Appendix A

Notice of Preparation, Notice of Completion, and Comments on the Notice of Preparation

Notice of Preparation

Of a Draft Environmental Impact Report for the
Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion

DATE: January 11, 2019

TO: Responsible, Trustee, and Other Interested Public Agencies; Interested Parties

FROM: City of Sunnyvale
Community Development Department
456 W. Olive Avenue
P.O. Box 3707
Sunnyvale, CA 94088-3707

NOTICE IS HEREBY GIVEN THAT the City of Sunnyvale, as Lead Agency under the California Environmental Quality Act (CEQA), has prepared a Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for the proposed Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion. The NOP includes a project description, exhibits, summary of key issues to be addressed in the EIR, and an overview of the purpose of this notice and the environmental review process.

30-Day NOP Review Period: Agencies and interested parties may provide the City with written comments on environmental topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5:00 p.m. on **February 11, 2019**. Please send all comments to:

George Schroeder, Senior Planner
City of Sunnyvale, Community Development Department/Planning Division
456 W. Olive Avenue
Sunnyvale, CA 94086

Phone: (408) 730-7443
gschroeder@sunnyvale.ca.gov

Public Scoping Meeting: The City of Sunnyvale (City) will hold a public scoping meeting to receive comments on environmental issues that should be addressed in the Draft EIR as well as the range of practicable alternatives to be evaluated in the Draft EIR. The date, time, and address of this meeting are as follows:

January 31, 2019
7:00 p.m.
City Hall
Council Chambers
456 W. Olive Avenue

Project Location: The City of Sunnyvale Lawrence Station Area Plan (LSAP) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California. The Lawrence Caltrain Station is situated below an overpass of Lawrence Expressway. Lawrence Expressway bisects the plan area north-south, while the Caltrain right-of-way bisects the area east-west. The existing plan area north of the tracks is bounded by Kifer Road and the City of Santa Clara border to the north, Uranium Drive and the City of Santa Clara border to the east, and 960 Kifer Road (APN 205-49-008) to the west.

The existing plan area south of the tracks is located west of Lawrence Expressway, north of Reed Avenue, and includes the Calstone-Peninsula Building Materials site at 1155-1175 Aster Avenue (APNs 213-01-034, - 033, -032), a townhouse development on Buttercup Terrace (APNs 213-73-001 to – 016), a commercial property at 1159 Willow Avenue (APN 213-01-023), and four commercial properties at the northeast corner of Willow Avenue and Reed Avenue (APNs 213-01-001, -002, -003, and -004).

Although the ½ mile radius around the Lawrence Caltrain Station includes properties within the City of Santa Clara and existing residential properties south of the tracks in the City of Sunnyvale, there are no changes proposed to these properties. There are only changes proposed to certain LSAP zoning districts described in the following sections. Refer to Exhibit 1 for a map of the LSAP and surrounding vicinity.

Project Background and Existing Land Uses: In December 2016, the City Council approved the LSAP and its associated General Plan Amendment and Rezoning. The City prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2013082030) for the LSAP that evaluated the environmental impacts associated with development of the LSAP. The LSAP supports mixed-use office/research and development (R&D), residential, and retail uses near the Lawrence Caltrain Station. The land uses and circulation identified in the LSAP support transit ridership and provide improved access throughout the LSAP area for pedestrians, bicyclists, and motor vehicles.

In April 2017, the City Council adopted an update to the City's Land Use and Transportation Element (LUTE) of its General Plan. The City prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2012032003) for the LUTE that evaluated the environmental impacts associated with development of the City based on the land use and transportation elements established in the LUTE. The LUTE EIR included the development assumptions in the LSAP. The LUTE designates land uses in the LSAP as Transit Mixed Use (TMU). The boundary expansion component of the project includes three sites currently designated as Industrial (IND).

At time of the LSAP adoption, the Council directed staff to return with a plan to study additional housing opportunities within the LSAP area. The City Council subsequently selected a preferred land use alternative on June 26, 2018, which studies an increase in the density allowance for both MXD-I (Flexible Mixed-Use I) and MXD-II (Flexible Mixed-Use II) zoned areas, and expands the area for where housing may be considered to the M-S/LSAP (Industrial and Service, LSAP Combining District) and O-R (Office/Retail) zoning districts. The LSAP update also includes a Sense of Place Plan which will address design criteria for sidewalks, lighting, tree grates, benches, etc. and outline an implementation plan for these elements. The Sense of Place Plan will also study a pedestrian/bicycle route from the east and west ends of the LSAP boundaries to the Lawrence Caltrain Station.

On August 14, 2018, the City Council authorized a study to include properties owned by Intuitive Surgical, Inc. at 932, 950, and 945-955 Kifer Road in the LSAP boundaries, and directed staff to include these amendments in the LSAP Housing Study. This would expand the existing LSAP boundary to the west, on either side of Kifer Road in the City of Sunnyvale. The Council also directed staff to study a pedestrian/bicycle route from the subject properties to the Lawrence Caltrain Station and analyze methods to retain trees and open space within the 945-955 Kifer Road property.

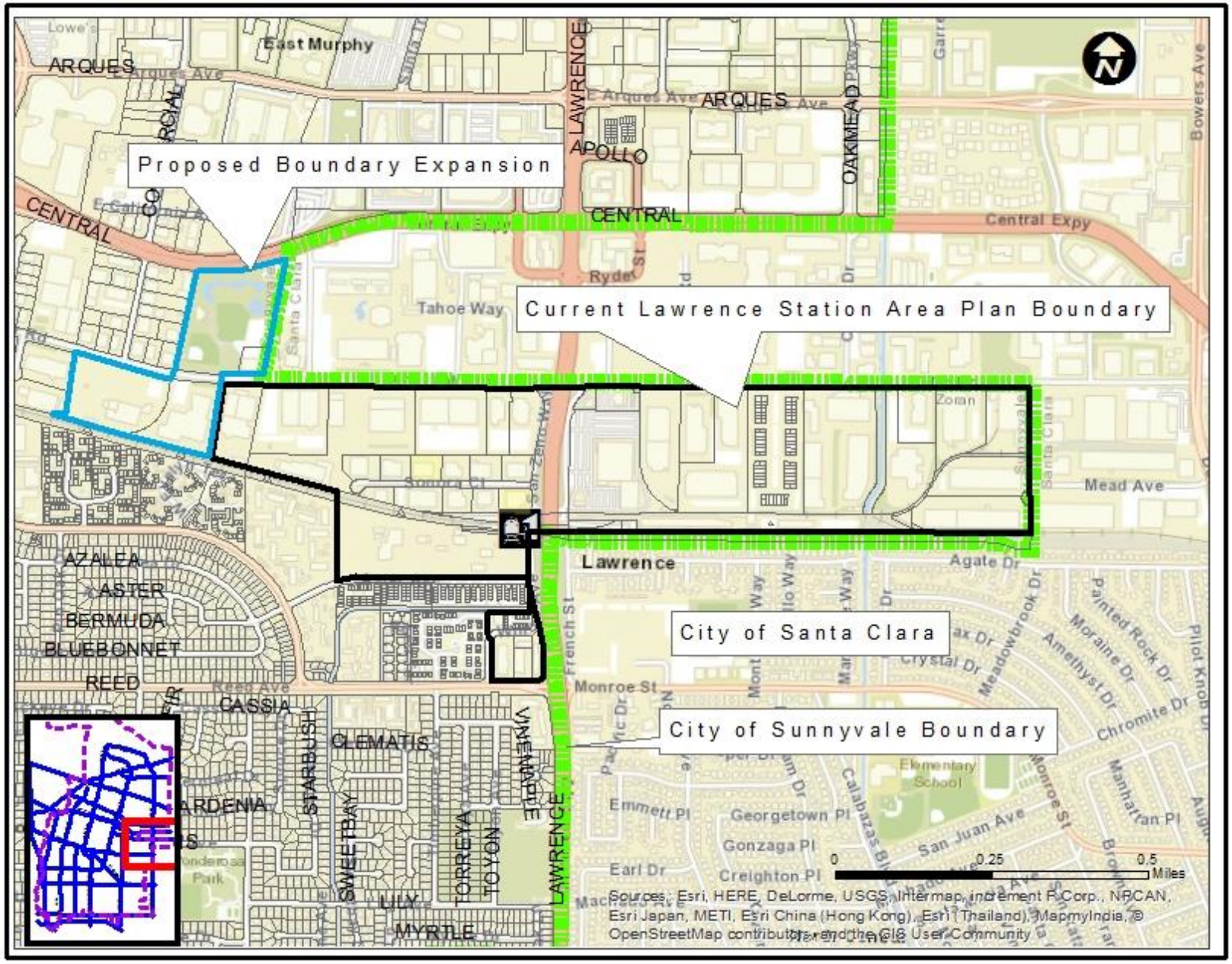


Exhibit 1 **Project Location**

Existing land uses in the LSAP north of the tracks consist of industrial and commercial uses on larger parcels. Several development projects are under construction, including new office buildings at 1050-1090 Kifer Road, a mixed-use residential/retail project at 1120-1130 Kifer Road, and a new self-storage building at 106 Lawrence Station Road. Land uses south of the rail line in the LSAP consist of a building materials site, townhomes, and commercial uses.

Project Description: There are two main components to the project – studying additional housing potential in the LSAP and expanding the boundary to include three additional office/research and development (R&D) sites. These components and the Sense of Place Plan are anticipated to require amendments to LSAP policy provisions and guidelines. Refer to Exhibit 2 for a map of the project description.

Housing Study

The Housing Study project description, as authorized by the City Council on June 26, 2018, consists of increasing the maximum density allowance (in dwelling units per acre – du/ac) for MXD-I and MXD-II zoned areas (from 68 du/ac to 100 du/ac) and expanding the area for where housing may be considered to the M-S/LSAP zoning district (maximum of 100 du/ac) and O-R (maximum of 54 du/ac). A total of 3,612 additional units will be studied, resulting in a total number of 5,935 allowable units in the LSAP. The maximum residential development capacity under the existing LSAP is 2,323 units. The below table shows the proposed changes in each of the LSAP zoning districts:

Zoning District	Existing LSAP Maximum Density with incentives	Proposed LSAP Maximum Density with incentives
MXD-I	68 du/ac	100 du/ac + 803 units
MXD-II	68 du/ac	100 du/ac + 961 units
MXD-III	54 du/ac	No change
O-R	0	54 du/ac + 166 units
M-S/LSAP	0	100 du/ac + 1,682 units
R-5	Based on lot area. See SMC Table 19.30.040	No change
	Additional units	**3,612**
	Current LSAP buildout – units	**2,323**
	Proposed buildout - units	**5,935**

Boundary Expansion

The proposed expansion of the western LSAP boundary was requested by Intuitive Surgical, Inc., and authorized to be studied by the City Council on August 14, 2018. The sites requested for inclusion in the LSAP boundary expansion are 932, 950, and 945-955 Kifer Road. The applicant intends to redevelop these sites for a total of 1,140,096 square feet of office/R&D development, which represents an increase of 949,540 square feet over existing conditions, or 646,049 square feet over the maximum allowed square footage under the current land use regulations. If included in the LSAP boundaries, the redevelopment of these sites would not require an increase to the overall LSAP development capacity, given the existing balance available. There would also be a higher floor area ratio (FAR) allowance above current regulations.

Environmental Issues to Be Addressed In EIR:

The City has determined that implementing the project may result in significant environmental impacts; therefore, an EIR will be prepared. As allowed under State CEQA Guidelines Section 15060(d) (when the decision to prepare an EIR has already been made), the City has elected not to prepare an initial study and will instead begin work directly on the EIR.

Potential issues and impacts to the existing environment to be analyzed in the Draft EIR include the following environmental topics:

- Aesthetics
- Hydrology and Water Quality
- Air Quality
- Energy
- Biological Resources
- Archaeological, Historical, and Tribal Cultural Resources
- Noise and Vibration
- Hazards and Hazardous Materials
- Land Use and Planning
- Population and Housing
- Public Services and Utilities
- Traffic and Circulation
- Geology and Soils
- Recreation
- Greenhouse Gas Emissions

Implementation of the project would have no impact on agricultural resources, forestry resources, or mineral resources as these resources do not exist in the LSAP area. The LSAP area is surrounded by urban development and is not adjacent to or intermixed with open space, natural land, or rural/agricultural lands. New construction is subject to the City Municipal Code and the California Fire Code, which includes safety measures to minimize the threat of fire. Thus, the project would have no impact related to wildfire risk. These issues will not be evaluated in the Draft EIR.

Other EIR Sections: In addition to the above environmental topics, the Draft EIR will also evaluate the potential cumulative and growth inducing effects of the project, as required by CEQA. Reasonably foreseeable future projects in the project vicinity will be considered in this analysis.

In accordance with section 15126.6 of the State CEQA Guidelines, an EIR must "describe a range of reasonable alternatives to the project, or to the location of the Project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." As required by CEQA, the EIR will evaluate a No Project Alternative. Aside from the No Project Alternative, the City has not yet determined what additional alternatives to the project will be evaluated in the EIR. These will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.

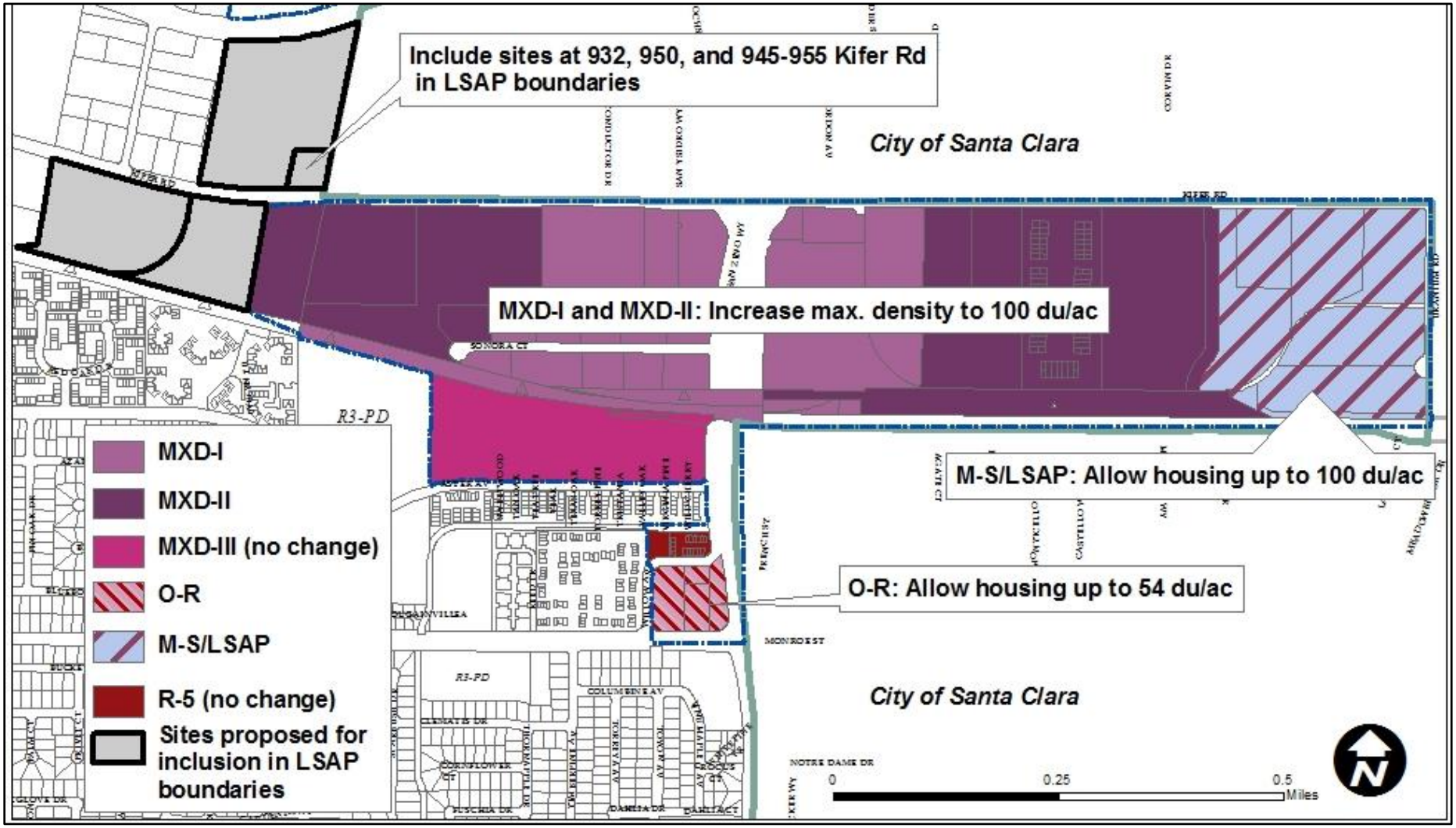


Exhibit 2 **Map of Project Description**

Purpose of this Notice: In accordance with the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15082), the City has prepared this NOP to inform agencies and interested parties that an EIR will be prepared for the above-referenced project. The purpose of an NOP is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (State CEQA Guidelines 14 CCR Section 15082[b]).

Environmental Review Process: Following completion of the 30-day NOP public review period, the City will incorporate relevant information into the Draft EIR, including results of public scoping and technical studies. The Draft EIR will be circulated for public review and comment for 45-day public review period. All parties that have requested to be included on the project mailing list will be provided a Notice of Availability for the Draft EIR.

A copy of this NOP has been posted on the City's website: https://sunnyvale.ca.gov/business/projects/lawrence.htm and is on file at the City's One-Stop Permit Center at 456 W. Olive Avenue Sunnyvale, CA 94086.

If you would like to be placed on the project mailing list or have any questions or comments, please contact George Schroeder, Senior Planner, City of Sunnyvale, at (408) 730-7443 or gschroeder@sunnyvale.ca.gov.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2019012022

Project Title: Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion

Lead Agency: City of Sunnyvale | Contact Person: George Schroeder
Mailing Address: 456 West Olive Avenue | Phone: 408-730-7443
City: Sunnyvale | Zip: 94086 | County: Santa Clara

Project Location: County: Santa Clara | City/Nearest Community: Sunnyvale/ Santa Clara
Cross Streets: Lawrence Expy & Kifer Rd/Reed Ave; Kifer Rd & Uranium Dr/Commercial St | Zip Code: 94085
Longitude/Latitude (degrees, minutes and seconds): 37 ° 22 ′ 26 ″ N / 121 ° 59 ′ 46 ″ W | Total Acres: 227
Assessor's Parcel No.: Multiple | Section: 32-33 | Twp.: 06S | Range: 01W | Base: MDB&M
Within 2 Miles: State Hwy #: 82 | Waterways: Calabazas Creek
Airports: Mineta San Jose International | Railways: Caltrain | Schools: Santa Clara Christian

Document Type:

CEQA: [X] NOP [ ] Draft EIR [ ] Early Cons [ ] Supplement/Subsequent EIR [ ] Neg Dec (Prior SCH No.) [ ] Mit Neg Dec Other:
NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI Other: [ ] Joint Document [ ] Final Document [ ] Other:

Governor's Office of Planning & Research
JAN 11 2019
STATE CLEARINGHOUSE

Local Action Type:

[ ] General Plan Update [X] General Plan Amendment [ ] General Plan Element [ ] Community Plan
[ ] Specific Plan [X] Master Plan [ ] Planned Unit Development [ ] Site Plan
[X] Rezone [ ] Prezone [ ] Use Permit [ ] Land Division (Subdivision, etc.)
[ ] Annexation [ ] Redevelopment [ ] Coastal Permit [ ] Other:

Development Type:

[X] Residential: Units 3,612 Acres 195
[X] Office: Sq.ft. 1.14M Acres 32 Employees
[ ] Commercial: Sq.ft. Acres Employees
[ ] Industrial: Sq.ft. Acres Employees
[ ] Educational:
[ ] Recreational:
[ ] Water Facilities: Type MGD
[ ] Transportation: Type
[ ] Mining: Mineral
[ ] Power: Type MW
[ ] Waste Treatment: Type MGD
[ ] Hazardous Waste: Type
[ ] Other:

Project Issues Discussed in Document:

[X] Aesthetic/Visual
[ ] Agricultural Land
[X] Air Quality
[X] Archeological/Historical
[X] Biological Resources
[ ] Coastal Zone
[X] Drainage/Absorption
[X] Economic/Jobs
[X] Fiscal
[X] Flood Plain/Flooding
[ ] Forest Land/Fire Hazard
[X] Geologic/Seismic
[ ] Minerals
[X] Noise
[X] Population/Housing Balance
[X] Public Services/Facilities
[X] Recreation/Parks
[X] Schools/Universities
[ ] Septic Systems
[X] Sewer Capacity
[X] Soil Erosion/Compaction/Grading
[X] Solid Waste
[X] Toxic/Hazardous
[X] Traffic/Circulation
[X] Vegetation
[X] Water Quality
[X] Water Supply/Groundwater
[X] Wetland/Riparian
[X] Growth Inducement
[X] Land Use
[X] Cumulative Effects
[X] Other: Greenhouse Gas

Present Land Use/Zoning/General Plan Designation:

Multiple land uses [residential (under construction), office/R&D, industrial, commercial, utility)]; General Plan: Transit Mixed-Use

Project Description: *(please use a separate page if necessary)*

The Housing Study project description consists of increasing the maximum density allowance (in dwelling units per acre – du/ac) for MXD-I and MXD-II zoned areas (from 68 du/ac to 100 du/ac) and expanding the area for where housing may be considered to the M-S/LSAP zoning district (maximum of 100 du/ac) and O-R (maximum of 54 du/ac). A total of 3,612 additional units will be studied, resulting in a total number of 5,935 allowable units in the LSAP. The maximum residential development capacity under the existing LSAP is 2,323 units. No changes are proposed to the MXD-III and R-5 zoning districts.
The proposed expansion of the western LSAP boundary was requested by Intuitive Surgical, Inc. The sites requested for inclusion in the LSAP boundary expansion are 932, 950, and 945-955 Kifer Road, which are intended for future redevelopment.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

____	Air Resources Board	____	Office of Historic Preservation
____	Boating & Waterways, Department of	____	Office of Public School Construction
____	California Emergency Management Agency	____	Parks & Recreation, Department of
____	California Highway Patrol	____	Pesticide Regulation, Department of
X	Caltrans District # 4	____	Public Utilities Commission
____	Caltrans Division of Aeronautics	X	Regional WQCB # 2
____	Caltrans Planning	____	Resources Agency
____	Central Valley Flood Protection Board	____	Resources Recycling and Recovery, Department of
____	Coachella Valley Mtns. Conservancy	____	S.F. Bay Conservation & Development Comm.
____	Coastal Commission	____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____	Colorado River Board	____	San Joaquin River Conservancy
____	Conservation, Department of	____	Santa Monica Mtns. Conservancy
____	Corrections, Department of	____	State Lands Commission
____	Delta Protection Commission	____	SWRCB: Clean Water Grants
____	Education, Department of	____	SWRCB: Water Quality
____	Energy Commission	____	SWRCB: Water Rights
____	Fish & Game Region # ____	____	Tahoe Regional Planning Agency
____	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
____	Forestry and Fire Protection, Department of	____	Water Resources, Department of
____	General Services, Department of		
____	Health Services, Department of	____	Other: ____
____	Housing & Community Development	____	Other: ____
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date January 11, 2019 Ending Date February 11, 2019

Lead Agency (Complete if applicable):

Consulting Firm: Ascent Environmental, Inc.
Address: 455 Capitol Mall, Suite 300
City/State/Zip: Sacramento, CA 95814
Contact: Pat Angell
Phone: 916-444-7301

Applicant: City of Sunnyvale
Address: 456 West Olive Avenue
City/State/Zip: Sunnyvale, CA 94086
Phone: 408-730-7440

Signature of Lead Agency Representative: _____ **Date:** 1/9/2019

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

CITY OF MOUNTAIN VIEW
COMMUNITY DEVELOPMENT DEPARTMENT • PLANNING DIVISION
500 Castro Street • Post Office Box 7540 • Mountain View • California • 94039-7540
650-903-6306 • Fax 650-962-8501

February 11, 2018

George Schroeder, Senior Planner
City of Sunnyvale, Community Development
456 W. Olive Avenue
P.O. Box 3707
Sunnyvale, CA 94088-3707

Re: Notice of Preparation of a Draft Environmental Impact Report for the Lawrence Station Area Plan Housing Study and Boundary Expansion

Dear Mr. Schroeder,

Thank you for allowing the City of Mountain View the opportunity to provide comments on environmental topics to be addressed in the Lawrence Station Area Plan EIR. The Notice of Preparation was reviewed by the Planning Division and the Public Works Department. The list of "Environmental Issues to be Addressed" appears to be comprehensive, and will consider Traffic and Circulation Issues that may result from the project and potentially create an impact within Mountain View. Neither Planning nor Public Works has additional comments.

Comments from Other City Departments

Please contact the appropriate point person listed below, if you have questions or comments:

- Public Works Department – Renée Gunn, Associate Civil Engineer, renee.gunn@moiuntainview.gov
- Planning Division – Brittany Whitehill, Assistant Planner, Brittany.whitehill@mountainview.gov

If you have any questions, please do not hesitate to contact me at my direct line, (650) 903-6199 or by email.
Sincerely,

Brittany Whitehill, Assistant Planner

City of Santa Clara
The Center of What's Possible

Planning Division

City of Sunnyvale
Attn:George Schroeder, Senior Planner
456 W. Olive Avenue
Sunnyvale, CA 94086

February 11, 2019

Re: Comments on Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion

Dear George:

Thank you for including the City of Santa Clara in the environmental review process for Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion ("Project"). City staff has reviewed the Notice of Preparation for studying additional housing potential in the Sunnyvale LSAP and expanding the boundary to include three additional office/research and development (R&D) sites.

The following comments are provided following our review of the NOP.

Transportation/Traffic

- The City of Santa Clara uses criteria within the VTA TIA Guidelines as a basis for determining study intersections. Accordingly, municipal and CMP intersections with ten or more project trips per approach lane should be analyzed. It is likely that project trips would travel to employment areas within Santa Clara. Intersections along Kifer Road, Central Expressway, Lawrence Expressway, Great America Parkway/Bowers Avenue and Arques Avenue/Scott Boulevard should be included in the traffic analysis should they meet the VTA 10-trip rule.

- Please use peak hour factors collected at time of counts, except at CMP intersections, and use our actual signal timing parameters for any intersections analyzed within the jurisdiction of Santa Clara. For signal timing or current intersection count data, please contact Carol Shariat at (408) 615-3024 or cshariat@santaclaraca.gov.

- The Sunnyvale Lawrence Station Area Plan (LSAP) should coordinate this plan with the Santa Clara Lawrence Station Area Plan immediately to the north of this project. Information regarding the City of Santa Clara's Lawrence Station Area Plan can be found at: http://santaclaraca.gov/government/departments/communitydevelopment/planning-division/specific-plans/lawrence-station.

- The existing LSAP recommends a road diet on Kifer Road. The City of Santa Clara does not support the road diet recommendation along Kifer Road within the plan. The City would like Sunnyvale to reconsider this recommendation in the revised plan. This recommendation will increase congestion along this roadway within the City of Santa Clara.

- The City of Santa Clara is currently working on our Creek Trail Master Plan which includes Calabazas Creek Trail which runs within the Sunnyvale LSAP area. For further information, related to this project, please contact Nguyen Cam at (408) 615- 3043 or ncam@santaclaraca.gov. Please coordinate any bike and pedestrian improvements with the Santa Clara Creek Trail Master Plan and consider connecting them to the proposed Calabazas Creek Trail.

- According to the CMP Guidelines, the TIA report must also include an analysis of bicycle and pedestrian facilities in terms of their availability, project effects on future bike/pedestrian plans, and improvements proposed by the project. Maps and information on existing and planned bicycle facilities within Santa Clara can be found on the City's website at http://santaclaraca.gov/government/departments/public-works/engineering/committees/bicycle-and-pedestrian-advisory-committee.

- The project site is located at the western boundary of the City of Santa Clara. Relevant approved projects within Santa Clara need to be included in the study estimates of the Background traffic volumes. This is consistent with the CMP TIA Guidelines. A list of approved projects within the City of Santa Clara is attached.

- Similarly, pending projects within Santa Clara needs to be incorporated in the Cumulative traffic volume estimates, in order to reflect the growth in both the local and regional traffic. A list of pending projects within the City of Santa Clara is attached.

- Any physical improvements required or planned at study intersections needs to evaluate secondary impacts to alternative modes of transportation.

- Fair share contributions should be made for significant impacts found along Santa Clara roadways and/or intersections, including the expressways.

Please draft the EIR and technical reports per the comments above. Should you have any questions regarding this letter, please contact Reena Brilliot, Planning Manager, via email at rbrilliot@SantaClaraCA.gov or phone at 408-615-2452.

Best regards,

Andrew Crabtree
Director of Community Development

Approved

															Dwelling Units				Commercial Space				Office Space				Industrial Space				Retail Space							
Date Updated	**Street Number & Street Name**	**APN**	**Submittal Date**	**Status of Entitlement**	**Approval Date**	**Applicant**	**Tidemark Description**	**SFD Units (Detached) For Sale**	**SF Units (Detached) For Rent**	**MF Units For Sale**	**MF Units For Rent**	**Total Dwelling Units**	**Affordable units?**	**Senior Units**	**Proposed Number of Dwelling Units**	**Existing Dwellings**	**Existing Dwellings to be Removed**	**Net Amount of Dwelling Units**	**Proposed Commercial (non-office) SQ Ft**	**Existing Commercial (non-office) SQ FT**	**Existing Commercial (non-office) to be removed SQ FT**	**Net Commercial (non-office) SQ. FT.**	**Proposed Office SQ. FT.**	**Existing Office SQ. FT.**	**Existing Office to be Removed SQ. FT.**	**Net Existing Office SQ. FT.**	**Proposed Industrial SQ. FT.**	**Existing Industrial SQ. FT.**	**Existing Industrial to be Removed SQ. FT.**	**Net Industrial SQ. FT.**	**Proposed Retail SQ. FT.**	**Existing Retail SQ. FT.**	**Existing Retail to be Removed SQ. FT.**	**Net Retail SQ. FT.**	**Current Zoning**	**Current GP**	**Proposed Entitlements**	**CEQA Review**
11/2/2016	5402 Great America Pkwy	216-31-075		Approved	5/22/2007	3 Com/Cognac Great America	Existing office use redeveloped to 555,000 sf of office/research & development					0	N/A		0			0				-	278,000	-		278,000				-				-	PD	Light Industrial	Extension of DA (2007); Previous approvals-GPA #40, Rezone from B to PD; DA	EIR
11/2/2016	2350 Mission College Blvd	104-13-097, 098 & 099		Approved		2350 Mission College Boulevard Office Retail	300,000 sf of office in two buildings and a 6 story parking garage; 6,000 square feet of retail					0	N/A		0			0				-	300,000			300,000		235,523	235,523	-	6,000			6,000	PD	High Intensity Office/R&D	Approved Rezone from PD to PD, Tentative Parcel Map & Architectural Review	Certified EIR
11/2/2016	4301, 4401, 4551 Great America Pkwy	104-42-009 & 020		Approved	4/15/2008	Sobrato Office Development	Rezone from PD & PD[ML] to construct (2) 12-story office buildings totaling 718,000 sq.ft. & (1) four-story parking garage on a developed property w/ (2) 300,000 sq.ft. existing office buildings that are to remain					0	N/A		0			0				-	718,000	600,000	-	1,318,000				-				-	PD	High Intensity Office/R&D	Rezone from PD[ML] to PD, Development Agreement, Tentative Map & Architectural Review	EIR
11/2/2016	2620-2727 Augustine Dr			Approved	7/1/2013	Augustine Bowers Industrial Campus / Equity Office	1,969,600 sf of office and up to 35,000 sf of retail					0	N/A		0			0		5,290	5,290	-	1,969,600	444,752	444,752	1,969,600				-	35,000			35,000	PD	Office/ Research & Development	General Plan Amendment, Rezone ML to PD, Subdivision Map, Development Agreement	Certified EIR
11/2/2016	2600 San Tomas Expy 2800 San Tomas Expy 2400 Condensa St			Approved	7/16/2013	NVIDIA	1,200,000 sf of office and high-tech lab buidlings replacing approx. 690,000 sf of office space. Revised DA					0	N/A		0			0				-	1,200,000	690,550	690,550	1,200,000				-				-	PD	Office/ Research & Development	Amendment to PD. Prior approval included General Plan Amendment Approved	Certified EIR
11/2/2016	5010 Old Ironsides Dr	104-04-064, 065, 111, 112, 113, 142, 143, 150 & 151		Approved	5/11/2010	(formerly Yahoo! Campus) 2016 LeEcco owned property	Phased development of a 3,060,000 sq.ft. office/R&D campus consisting of 13 six-story buildings, three commons buildings, surface parking & two levels of below grade parking					0	N/A		0			0				-	3,060,000	675,150	675,150	3,060,000				-				-	PD	High Intensity Office/R&D	Rezone from ML to PD, Development Agreement, Vesting Tentative Parcel Map	Certified EIR
11/2/2016	5403 Stevens Creek Blvd			Approved	7/17/2012	Mellon Bank /Perry Airellaga	General Plan Amendment from Low Intensity Office R&D to High Intensity Office R&D, Rezone from CT to PD & Architectural Review to construct (2) 6-story office buildings totalling 375,000 sq.ft. & (1) parking structure w/1281 spaces (2 below & 4 above) & 38 surface parking spaces in conjunction w/ demo of existing one-story commercial building (IHOP Restaurant)					0	N/A		0					6,130	6,130	-	375,000			375,000				-				-	Ct	Regional Commercial	GPA, Rezone, AC approval	TBD
11/2/2016	2200 Lawson Ln	224-44-024	5/23/2012	Approved	4/23/2013	Sobrato	Amend PD zoning (PLN2007-06379) and Development Agreement (PLN2008-06880) for approved office R&D campus to increase building sq.ft. of allowable office space fropm 516,000 to 613,800 sq.ft.					0	N/A		0			0				-	97,800	516,000	-	613,800				-				-	PD	High Intensity Office/R&D	Amendment to PD	Addendum to EIR SCH#2007042165 CEQ2012-01146
11/2/2016	3000 Bowers Ave	216-48-033	4/12/2012	Approved	3/26/2013	Office Building	New (2) 5-story 150,000 sq.ft.office buildings, (1) 2-story 17,400 sq.ft. amenity building, and 6 story parking structure with a total of 1,200 parking spaces in conjunction with demolition of an existing 100,042 sq.ft. 2-story office building					0	N/A		0			0				-	167,400		100,042	67,358				-				-	ML	High Intensity Office/R&D	Architectural Review	TBD
11/2/2016	4880 Great America Pkwy	104-04-115		Completed/Occupied	2014	Brad Krouskup	New 171,000 sq. ft. office building and new site improvements and two level parking garage					0	N/A		0			0				-	171,000	71,000	71,000	171,000				-				-	ML	Industrial	Architectural Review	possible MND
11/2/2016	2620 Augustine Dr			Approved	5/7/2014	Irvine Co.	General Plan Amendment #80 from High Intensity Office/R&D to Community Commercial [Retail Center] and Light Industrial to High Intensity Office/R&D [Office Phase II & III]; Rezone from Planned Development (PD) to Planned Development (PD) [Retail Center], and from Light Industrial (ML) to Commercial Park (CP) [Office Phase II & III] to allow the construction of up to 1,243,300 square feet of office space and up to 125,000 square feet of retail space for a total (inclusive of Office Phase I) of up to 2,000,100 square feet of development; Approval of Development Agreement Amendment No. 2					0	N/A		0			0				-	1,862,100	640,520	640,520	1,862,100				-	1,380,000	5,290	5,290	1,380,000			PD Rezone, D.A., Map, Architectural Review, potential GPA	
11/2/2016	3303 Scott Blvd			Completed/Occupied	2/5/2014	Applied Materials	New three-story office building at approximately 78,000 square feet. Design review and initial study required.					0	N/A		0			0				-	78,000			78,000		35,728	35,728	-				-				
11/2/2016	1460 Monroe St	269-03-067, 068, 142 & 143	3/11/2012	Approved		Silicon Sage Builders	Rezone from CT to PD to construct a 4-story mixed use development with 6726 sq.ft. of ground floor retail and 28 residential units above; 43 surface parking spaces				28	28	0		28			28				-	6,728	1,200	1	5,528				-	6,726	2,500	2,500	6,726	CT	Community Mixed Use	Rezoning to PD	MND
11/2/2016	4301 Great America Pkwy	104-42-021	1/1/2013	Approved	9/1/2014	SOBRATO	Rezone from PD & PD[ML] to PD to construct two high rise office buildings and one parking structure (CEQ2007-01051)construct up to 718,000 square feet of new office space in up to 1,018,000 square feet of office development; up to two, five-level parking structures with up to 3,360 total parking spaces;					0	N/A		0			0				-	718,000	418,000	118,000	1,018,000				-				-				

Approved

															Dwelling Units				Commercial Space				Office Space				Industrial Space				Retail Space							
Date Updated	**Street Number & Street Name**	**APN**	**Submittal Date**	**Status of Entitlement**	**Approval Date**	**Applicant**	**Tidemark Description**	**SFD Units (Detached) For Sale**	**SF Units (Detached) For Rent**	**MF Units For Sale**	**MF Units For Rent**	**Total Dwelling Units**	**Affordable units?**	**Senior Units**	**Proposed Number of Dwelling Units**	**Existing Dwellings**	**Existing Dwellings to be Removed**	**Net Amount of Dwelling Units**	**Proposed Commercial (non-office) SQ Ft**	**Existing Commercial (non-office) SQ FT**	**Existing Commercial (non-office) to be removed SQ FT**	**Net Commercial (non-office) SQ. FT.**	**Proposed Office SQ. FT.**	**Existing Office SQ. FT.**	**Existing Office to be Removed SQ. FT.**	**Net Existing Office SQ. FT.**	**Proposed Industrial SQ. FT.**	**Existing Industrial SQ. FT.**	**Existing Industrial to be Removed SQ. FT.**	**Net Industrial SQ. FT.**	**Proposed Retail SQ. FT.**	**Existing Retail SQ. FT.**	**Existing Retail to be Removed SQ. FT.**	**Net Retail SQ. FT.**	**Current Zoning**	**Current GP**	**Proposed Entitlements**	**CEQA Review**
11/2/2016	2620 Augustine Dr			Approved	5/1/2014	Irvine Co.	125,000 square foot retail center (adjustment to PD with office campus)					0	N/A		0			0				-	1,862,100	640,520	640,520	1,862,100				-	138,000	5,290	5,290	138,000	PD		Rezoning to PD - readjustment of Office campus	addendum to EIR
11/2/2016	5450 Great America Pkwy	104-52-026	12/20/2013	Approved	5/1/2014	BNP Leasing Corp	Architectural review for Phase 2 of approved 6-story office building on an existing office/R&D site with 3 office buildings subgrade and surface parking (certified EIR)					0	N/A		0			0				-	213,325	300,000		513,325				-				-			AC approval	
11/2/2016	2520 Augustine Dr 3333 Octavius Dr	216-45-036, 37, 38, 024, 025		Approved	8/14/2014	Irvine Co. Carlene Matchniff	Santa Clara Square Office Project (Phase II and III- see a. Two additional parcels are proposed to be added to the recently approved SCSQ Project. Addendum to the EIR and Amendment to Development Agreement is part of this proposal. The Office Sites proposed will not exceed the 2009 Project. Office Phase II and III are proposed to consist of 6-8 story office					0	N/A		0			0				-	1,862,100	640,570	775,570	1,727,100				-	138,000	5,290	5,290	138,000			PD Rezone, D.A. Amendment, Map, Architectural Review, GPA, VTM	Addendum to previously adoprted EIR
11/2/2016	1313 Franklin St 1052 Monroe St 1358 Benton St	269-20-076, -077, -078	10/22/2014	Approved	1/1/2015	Silicon Valley Builders	Multifamily Residential project with 46 units and 16K or retail space and 4 stories			46		0	4 plus partial in-liue fee		44	3	3	44				-				-				-	16,700	11,066	11,066	16,700	TBD		Rezone or AC: depending upon development	TBD
11/2/2016	3001, 3032 Coronado Dr	216-26-040	6/18/2013	Approved	10/1/2014	Tiemo Mehner	AC and DA for two new data centers along with vacation of a portion of Coronado Drive					0	N/A		0			0				-				-	201,350	33,784	33,784	201,350			-	ML	Light Industrial	Architectural Approval	
11/2/2016	1480 Main/1160 El Camino Real	269-05-107		Approved	4/21/2015	Mehdi Shemirizi	Rezone to PD to allow a mixed use project with 12 residential apartments and 1,000 sq ft of retail on a approx. 15,000 square foot lot					0	None (rental units only)		12			12				-				-				-	1,000			1,000	CC	Community Mixed Use	Rezone	Cat exemp/Infill project
11/2/2016	1701 Lawrence Rd	220-04-039, 040		Approved	7/1/2014	JOMA Studio architects	Rezone from PD (R3-18D) to PD to redevelopment of an existing developed parcel with 9 attached sfr (CEQA to be determined)					0	None		9	1	1	9		6,275	6,275	-				-				-				-	PD			
11/2/2016	3700 El Camino Real	313-06-004, 002		Approved	Yet all the links	Essex Property Trust	Gateway Santa Clara (formerly Kohls Site) Mixed use development- Redevelopment of entire site 87K retail/commercial and 476 housing units (apartments)				476	0	None		476			476				-				-				-	87,000	120,000	120,000	87,000			Rezone/Subdivision Map/AC approval 475 rental dwelling units and 86,000 square feet of retail space	EIR
11/2/2016	3345 Scott Blvd			Approved	4/22/2015	Menlo Equities	Amendment to approved project - Modification to site plan and building height of to be constructed 6-story Building D.					0	N/A		0			0				-	244,880			244,880				-				-				
11/2/2016	2950 Lakeside Dr			Approved	12/1/2015	Rashik Patel T2	New 7 story hotel with 188 rooms					0	NA		0			0	94,200	10,900	10,900	94,200				-	55,500			55,500				-				
11/2/2016	2600 Augustine	216-45-011 -022 -024 -025 -028; 216-29-053 -112 and 216-46-003		Approved	12/1/2015	Irvine	Santa Clara Square Mixed Use Project - - phased project 100+ acres 2,000 rental housing units 40,000 sf retail added 30 acres parks/open				1,800	1800	None		1800			1800				-				-				-				-		2025-35 Phase III General Plan High Density	GPA, rezone, subdivision map	
11/2/2016	100 N Winchester Blvd	303-16-073		Approved	1/1/2016	Santana Atrium Professional Center	92 unit senior apartment home community with onsite clubhouse and recreational amenities.				92	92	None		92			92				-		84,000	84,000	-				-				-	OA	Regional Mixed Use	rezone and GPA	MND OR EIR
11/2/2016	820 Civic Center Dr	224-29-022	6/1/2014	Approved	6/23/2015	Michael Fischer	application for a 3 unit Townhome develolpment (retention of one historic home- total of four units)	3				3	N/A		4	1	0	3				-				-				-				-	ML			
11/2/2016	1055 Helen Ave			Approved	11/1/2015	Mehdi Sadri	Rezone from R1-6L to PD & Architectural Review to construct a 4 unit townhome project w/ private street (Tentative Parcel Map PLN2015-11358)			4		4			4	1	1	4				-				-				-				-				
11/2/2016	3033 Scott Blvd and 3080 Alfred			Approved	3/1/2018	MCA	Expansion of activities at Muslim Community Association to include new high school student base, administrative offices. Director of Planning and Inspection administrative approval an increase of 500 students including up to 150 high school students. Use Permit for futher expansion. Initial Study/MND/MMRP prepared.					0	N/A		0			0	-			-				-				-				-				
11/2/2016	575 Benton St			Approved	2/1/2016	Irvine	Mission Towne Center Mission Town Center- 5-story mixed use project consisting ground floor 25,942 sf commercial space and 318 apartments on approximately 6.42 acres				417.00	417			417	$ 10.00	$ 10.00	417	25,942			25,942				-				-				-	varies	Station Area Plan	General Plan Amendment, Rezoning, parcel map	EIR
11/2/2016	3607 Kifer Rd			Approved	2/1/2016	Lennar Commercial	Use Permit to construct off-site 5-level parking structure at 3697 Tahoe Way and 5-story 199,460 sq.ft. office building at 3607 Kifer Rd as part of an existing off campus in conjunction with a Modification to increase maximum building height of the proposed office building to 87.5' and Architectural Review of the project					0	NA		0			0				-	199,460	-	-	199,460				-				-				-				
11/2/2016	1871 Bellomy St	269-33-021		Approved	4/1/2016	Jason and Linda Chen	Variance and AC approval for large duplex unit development	0	0		1	2	NA			2	0	2				-				-				-				-				
11/2/2016	2855 Stevens Creek Blvd	274-43-061, 071, 080		Completed/Occupied	3/1/2016	Westfield Valley Fair	New 10 screen Movie Theater complex and new retail tenant space . Demolition of 77,000 sq. ft. portion of the existing Westfield Valley Fair Shopping Mall, and the new construction of 102,210 square foot of commercial building area					0	N/A		0			0	73,700			-				-				-	25,000	52,000	52,000	25,000		CC	Use Permit for a new movie theater, and Variance to allowable building height,Shopping Mall, and the new	Addendum to EIR?
11/2/2016	1525 Alviso St	224-29-034		Approved	2/1/2016	City Ventures (Pulte Homes purchased project)	Application for 40 unit townhouse project- 3 stories (next to Mission Inn motel)- application following preapplication			40		40	4		40			40				-				-				-				-	PD	Community Mixed Use	Rezone	MND/TBD
11/2/2016	1627 Monroe St	224-26-062		Approved	8/1/2016	Samir Sharma	Architectural Review to construct 3 new two-story residences; Rezone from R1-6L to PD; Tentative Parcel Map to subdivide one lot into 3 lots	3				3	NA		3			3				-				-				-				-				NOE

Approved

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11/2/2016	1777 Laurelwood Rd		6/1/2015	Approved	5/25/2016	Ray Hashimoto /HMH for River of Life Church	New 35K sanctuary structure adjacent to existing building to allow full congregation to attend one service.					0	N/A		0			0				-				-	35,000	-		35,000				-		ML		
11/2/2016	3215 Stevens Creek Blvd			Approved	8/1/2015	Oscar Bakhtiari	Use Permit Expansion of an existing car dealership with new replacement construction of a 2-story 45,778 sq.ft. showroom/service facility & integrated parking structure w/ Modification to increase maximum building height to 40'2" Outdoor display. Project involves demolition of 1-story showrrom/service facility and surface parking lot					0	NA		0			0				-				-				-				-		Stevens Creek Focus Area	GPA for Ag portion of land, Lot Merger and AC approval and Rezone	
11/2/2016	820 Civic Center Dr	224-29-022		Approved	7/1/2016	Michael Fischer	Amendment to approved 3 unit Townhome develolpment (retention of one historic home- total of four units) and amendment to approve a 5th single family unit	3				3	N/A		3			3				-				-				-				-	ML			NOE
11/2/2016	5155 5120 Stars And Stripes Dr	104-03-036 & 037, 104-01-102, 097-01-039 & 097-01-073 ---------- 104-03-036, 038 and 039		Approved	7/1/2016	Related	City Place -Related Co project for redevelopment of five parcels that include Santa Clara Golf & Tennis Club, BMX track, Fire Station #10, and former City landfill and two parcels on other side of Stars and Stripes (formerly for Montana Lowe project) directly across from Levi's Stadium. Master Development totals of 9.2M square feet and proposes 5.7M sq ft office; 1.1M sq ft retail; 1,360 mixed density residential units; 700 hotel rooms; 250K restaurant uses; 190K entertainment space			360	1000	1360	TBD		1,360			1360	990,000			990,000	5,700,000	-		5,700,000				-	1,100,000	-		1,100,000	P	Public Quasi Public	EIR, General Plan Amendment, Rezone to PD or PD-MC, Tentative Map and/or Vesting Tentative Map, Development Agreement and/or Disposition Development Agreement	
11/2/2016	1627 Monroe St			Approved	7/1/2016	Samir Sharma	3 new two-story residences; Rezone from R1-6L to PD; Tentative Parcel Map to subdivide one lot into 3 lots	3				3	NA		3			3				-				-				-				-			Rezone and Architectural Review	NOE
11/2/2016	4935 Stevens Creek Blvd	296-20-004		Completed/Occupied	10/5/2016	Bright Horizons/Camas J. Steinmetz	Demolition of existing car wash and construct a new two-story child care center. Approx 18K building.					0	NA		0			0				-				-				-				-			Use Permit and AC approval	IS/MND
11/2/2016	3155 Stevens Creek Blvd			Approved	8/1/2016	Oscar Bakhtiari	Rezoning of one parcel from A to CT to allow for expansion of car dealership. Zoning must be approved to allow commercial use.					0	NA		0			0				-				-				-		Stevens Creek Focus Area	GPA for Ag portion of land, Lot Merger and AC approval and Rezone	
11/2/2016	3226 Scott Blvd	224-46-006		Approved	11/15/2016	Courtney Bauer	Architectural Review and ZA Modification to allow the demolition of the existing industrial building and development of a new 230,500 square foot office building with 93,640 parking structure and other onsite improvements.					0	NA		0			0				-				-				-				-				
11/2/2016	2880 Northwestern Pkwy			Approved	7/1/2016	Vantage Data Centers 4 LLC	Architectural review of proposed 108,858 square foot, 4-story Vantage V5 building. Proposal is for a new data center and involves parcel line changes.					0	NA		0			0				-				-	108,858	60,040	60,040	108,858				-				
11/2/2016	2041 Mission College Blvd	104-38-005		Approved	7/1/2016	Washington Holdings/Kelly Snyder	Build 5 new retail buildings totaling 24,000 sq. ft., a 5-story 175-room hotel, and various site improvements; Tentative Parcel Map to subdivide two parcels into three parcels					0	NA		0			0	115,000	0	0	115,000				-		92,293	92,293	-	25,000	-	-	25,000			Use Permit for hotel and retail in ML zone	MND
11/2/2016	3100-3200 Coronado Dr	224-26-062		Approved	2/1/2016	Irvine Company	Proposal for new office structures (2) totaling 245,000 and new parking garage					0	NA		0			0				-	245,000	76,000	76,000	245,000				-				-	ML		AC approval	
11/2/2016	1550 Space Park Dr	224-08-152		Approved	3/1/2016	Bourns	New 65,000 sq. ft. two story data center on an 89,000 sq. ft. lot.					0	NA		0			0				-				-	65,000			65,000				-			AC approval	
11/2/2016	2895 Northwestern Pkwy	216-28-048		Approved	9/1/2016	Scott Chappelle/Vantage Data Centers	Vantage 6 (V6) 69,025 sq.ft. (total both floors) new two story data center building with rooftop mechanical equipment, with Initial Study and/or Negative Declaration.					0	NA		0			0				-				-	69,025	-	-	69,025				-	ML		AC approval	IS/MND
11/2/2016	1890 El Camino Real	269-01-081, 82		Approved	9/27/2016	Pinn Bros	56 for sale units condo units (no commercial removed from project by CC and reduced project by 4 units)			56		56	3 to 4		56			56	-	4,250	4,250	-				-				-				-	CT	Community Mixed Use	Rezone, ARC review, TSM	EIR
11/2/2016	1990 El Camino Real	269-01-085	10/1/2016	Approved	9/27/2017	Leah Lombardi for Chick-fil-A	Use Permit to demo the existing drive-through restaurant (McDonald) and construct a new drive-through restuarant (Chck-fil-A) with on- and off-site improvement. The new tenant (Chick-fil-A) also proposes an indoor play area and a total of 36 outdoor seats in an existing patio.					0	NA		0			0	5,000	4,856	4,856	5,000				-				-				-				
11/2/2016	1 Great America Pkwy	104-42-008, 014, 019	12/1/2014	Approved	1/1/2017	Cedar Fair	PD rezone to allow 140,000 new retail for open access to general public and year round operation of park					0	NA		0			0	140,000			140,000				-				-				-			Rezone from CT to PD for California's Great America Park Master Plan	
11/2/2016	651, 725, and 825 Mathew St	APNs) 224-40-011 (0.26 acre), 224-40-002 (4.36 acres), and 224-40-001 (4.35	10/1/2016	Approved	3/29/2017	Vantage	New Data Center campus- Vantage 420,000 sq. ft. Total in up to 4 buildings with electrical substation					0	NA		0			0				-				-	420,000	107,600	107,600	420,000				-				
11/2/2016	3375 Scott Blvd		5/1/2016	Approved	4/19/2017	John Duquette	New six story office buildin 237,104 sf, 4 story parking structure with 14,000 sq.ft. amenity building (2 story building attached to garage for employee cafe and/or fitness center, etc.)					0	0		0			0		37,600	37,600		250,000			212,400				-				-				
11/2/2016	2250 El Camino Real		7/15/2016	Pending		Sobrato	Pre-application for 55 apartments- 3 floors over podium parking (Western Motel site)				55	55	tbd		55	0	0	55		10,595	10,595	10,595				-				-				-	PD/Multi family	High Density Residential	Rezone/ARC approval	
11/2/2016	1530, 1540 Pomeroy Ave		7/1/2016	Pending		Omid Shakeri	Rezoning of two different parcels (see also 1540 Pomeroy) from R1-6L for 1530 to PD and from A for 1540 to PD, one project, with Tentative Subdivison Map for 8 Townhome units and Lot A common lot.			8		8	0		8	2	2	8				-				-				-				-				
11/2/2016	1205 Coleman Ave	230-46-069	1/1/2016	Pending		Hunter Storm Properties	New multi-family residential project on former BAE site, up to 1360 residential units, approximately 15,000-25,000 square feet of community-serving retail and restaurant space, and amenities.				1360	1360	TBD		1360			1360				-				-	287,000	287,000	-	25,000	-	-	25,000		Station area plan	Rezone, tentative map	

Approved

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11/2/2016	917 Warburton Ave	224-27-049	10/1/2015	Approved	2/21/2017	Samir Sharma	6 unit single family homes - subdivision map to allow for sale housing	6				6	0		6	0		6				-				-				-				-				IS/MND
11/2/2016	967 Warburton Ave	224-27-048	12/1/2015	Approved	6/6/2017	Robert Botham	Rezone from Light Industrial (ML) to Planned Development (PD) to construct (4) detached two-story single family residences on a lot with an existing single family residence to be retained (Subdivision Tentative Map to create 5 for-sale single family lots & 1 common lot PLN2016-12065)	5	0			5	0		4	1	0	5	-			-				-				-				-				-				IS/MND
11/2/2016	3001 Tasman Dr	104-49-030	12/1/2015	Pending		Mike Hodges/Bixby Land Co	New 4-story core and shell building and two new parking structures and associated site improvements					0	NA		0			0				-	150,000	408,753	-	558,753				-				-				-				AC approval	EIR
11/2/2016	3305 Kifer Rd	216-33-001	11/1/2016	Approved	11/29/2017	Leah Draeger/True Life Co.	Development of 45 attached townhomes and stacked flats with 109 parking spaces and open space as part of the Lawrence Station Area Plan . 7.5 acre site project. The environmental review for this project will be covered under the LSAP EIR			45		45	10% of units		45	0	0	45				-		30,000	30,000	-				-				-				-				Rezone	TBD
11/2/2016	3069 Lawrence Expy	216-34-052	9/1/2015	Pending		Westlake Urban/Gaye Quinn	Proposal for 333 unit multi-family development; Tentative Subdivision Map 3.82 acres			333		333	TBD		333			333				-				-	-	70,000	70,000	-				-				-				Architectural Review, Rezone (for sale units) Tentative subdivision map	TBD
11/2/2016	3023 Homestead Rd	297-25-097	9/1/2015	Approved	9/1/2017	Kurt Keegan	Application to subdivide one lot into four lots and construct three new 1,900 sq. ft. detached homes, and move the existing listed resource onto lot four	4	0			4	0		3	1	0	4				-				-				-				-				-	R1-6L	Medium Density Residential (19-36 UPGA)	Rezone/subdivision Map/AC approval	
11/2/2016	3501 El Camino Real	220-03-010	10/1/2015	Pending		Prometheus/ Nathan Tuttle	Pre-application for the development of 100,000 square foot shopping center into a mixed use development including 80,000 86,000 sqft retail and up to 700 apartments				700	700	TBD		700			700				-				-				-	86,000	106,309	106,309	86,000	CT	RMU			
11/2/2016	3505 and 3485 Kifer Road; 2985, 2951, 2901, 2900 and 2960 Gordon Avenue; 3060, 2960, 3045 and 3049 Copper Road; and 3570 Ryder Street	29.4 acre site located at the northeast corner of Kifer Road and Lawrence Expressway. APNs: 216-34-041, -072, -066, -073, -051, -070, -045, -046, -047, -074, -075, -036, -	11/1/2016	Approved	11/29/2017	Johnathon Fearn/Summerhill Homes	Development of 996 residential units with 37,000 square foot retail and associated open space, landscaping, parking and other improvements as part of the Lawrence Station Area Plan.	41		298	657	996	10%	$ -	996	$ -		996				-				-		839,884		839,884	37,000	-		37,000	ML	Light Industrial	Rezone, Possible DA, Specific plan approval, ARC review	EIR
11/2/2016	2891 Homestead Rd	290-39-080	9/14/2014	pending		Anthony Ho	Pre-zone a 0.39 acre site to PD pending annexation, for the construction of 8 townhouses on a podium over subterranean parking area			11	0	11	1		11		1	10				-				-				-				-				-				
11/2/2016	2490, 2500 El Camino Real	290-46-001,002,003,015, 016,17 and 316-17-024	7/1/2015	pending		Lou Mariani	Proposal for 262 multi-family residential units and senior residential units and a 311-room hotel (full service and extended stay) with a total 215,074 square feet of commercial space consisting of commercial/hotel, retail, restaurants, bars, and meeting rooms on a 7.14 acre site			398		398	39	66	398	0	0	398	206,000	161,358	161,358	206,000				-				-				-				-				General Plan Amendment from Community Mixed Use to Regional Mixed Use for the development and PD rezoningl AC approval	
11/2/2016	909 Kiely Blvd			pending		Swim Center at Central Park	International Swim Center (ISC) proposal at Central Park CIP project #3172: project includes the following components: ISC, Community Recreation Center, Swimming Hall of Fame					0	N/A		0			0				-				-				-				-				-				
	90 North Winchester Boulevard (1834 Worthington Circle)	303-17-053	16-Dec	pending		CORE	Portion of former BAREC site (approx 6 acres). Amendment to Existing PD allowing 165 senior affordable units; 419 mixed income apts.' up to 584 housing units with 50% of units affordable, and up to 25,000 site serving commercial. Up to 1.5 acre open space		0	34	325	359	181	165	359	0	0	359				-				-				-				-				-				
	281 Serena Way	294-35-020	Feb-17	pending		Hanna Smolich / Bi Yun Liu	Conversion of SFD to daycare operation/ GPA and rezone needed					0			0	1	1	0				-				-				-				-				-				
	1500 Duane	224-08-070		Approved	8/2/2017	Richard Pedley	Arch review to allow the a 949 square foot addition and modificaiton of the existing 68,499 square foot warehouse building to convert a vacant warehouse to a new 69,448 square foot data center.					0			0			0				-				-	949	69,488		70,437				-				-				
	2904 Corvin	216-33-034	Feb-17	pending		Concentric	121 residential units 5-story multi-family with			121		121	60		121	0		121				-				-				-				-	lsap	lsap		
	3905 Freedom Circle	104-40-046 APNs 104-40-036 and 104-40-021	Feb-17	Pending		Greystar	A new mixed-use development w/followin uses: Office (606,968 square feet; Residential 1018 units; Commercial 18,653 square feet Publicly Accessible Open Space (2.5 acres). 16.58 acres of land bounded by Freedom Circle, Mission College Boulevard, Highway 101, and the San Thomas Aquino Creek. The existing site consists of 17,000 square feet Pedro's restaurant and a surface parking lot (APN 104-40-020), and 13.5 acres of vacant land .				1018	1018				1018			1018	18,653			18,653	**606,968**	-		606,968				-				-				GPA #89, Vesting Tentative Parcel Map, Rezoning to PD for Planned Mixed Use Development, Architectural Review, EIR:	
	2305 Mission College	104-13-096	18-Mar	Approved	Appeal pending - approved 4/18/18	Algined Data Centers	Architectural review to allow a demolition of an existing office building and construct a new 495,660 square foot two-story data center, including generator yard, equipment yard, underground water storage, parking for 75 cars (with land banking), and a new SVP substation.					0			0			0				-					495,660			495,660				-				

Approved

															Dwelling Units				Commercial Space				Office Space				Industrial Space				Retail Space								
Date Updated	**Street Number & Street Name**	**APN**	**Submittal Date**	**Status of Entitlement**	**Approval Date**	**Applicant**	**Tidemark Description**	**SFD Units (Detached) For Sale**	**SF Units (Detached) For Rent**	**MF Units For Sale**	**MF Units For Rent**	**Total Dwelling Units**	**Affordable units?**	**Senior Units**	**Proposed Number of Dwelling Units**	**Existing Dwellings**	**Existing Dwellings to be Removed**	**Net Amount of Dwelling Units**	**Proposed Commercial (non-office) SQ Ft**	**Existing Commercial (non-office) SQ FT**	**Existing Commercial (non-office) to be removed SQ FT**	**Net Commercial (non-office) SQ. FT.**	**Proposed Office SQ. FT.**	**Existing Office SQ. FT.**	**Existing Office to be Removed SQ. FT.**	**Net Existing Office SQ. FT.**	**Proposed Industrial SQ. FT.**	**Existing Industrial SQ. FT.**	**Existing Industrial to be Removed SQ. FT.**	**Net Industrial SQ. FT.**	**Proposed Retail SQ. FT.**	**Existing Retail SQ. FT.**	**Existing Retail to be Removed SQ. FT.**	**Net Retail SQ. FT.**	**Current Zoning**	**Current GP**	**Proposed Entitlements**	**CEQA Review**
	3625 Peterson Way	216-30-040	17-Mar	Pending		Boston Properties	Architectural review of (2) 8-story office buildings connected by bridges at 2 levels; a 4-level paking structure w/ attached amenity building that includes a roof deck and surface parking and site landscaping & Variance to increase maximum building height from 70' to 129' at tiop of parapet wall (w/ top of roof screen at 138.5')					0			0			0				-	672,000		53,069	618,931		206,000	206,000	-				-							
	3402 El Camino Real	290-01-136	Mar-17	Pending		John Vidovich	Rezoning of a 2.27 acre site that was recently burned down, and redevelop a mixed-use project with 66 apartment units, 9,440 square feet of retail, amenities on the third floor, surface parking, and two-level garage parking.				66	66			66	0		66	9,900							-				-	9,900	24,050	24,050	9,900				
	575 Benton	230-07-002, 004, 009, 010, 013, 029, 031, 034, 038, 053, 059, 060	17-Apr	Pending		Prometheus	(New MTC project proposal) GPA, Rezoning to PD to construct a mixed-use residential development project that consist of 355 apartment units, and approx. 26,000 square feet of retail with 697 parking spaces				355	355			355			355	14,000			14,000				-				-				-				
11/2/2016	2780 El Camino Real		17-Apr	Pending		Prometheus RE group (Marilyn Ponte)	General Plan Amendment from Regional Commercial to Medium Density Residential; Rezone from CC to PD & Architectural Review for 58- 3 story townhomes			58		58	6		58	0		58	-	36,000	36,000	-				-				-				-				MND
	1530 and 1540 Pomeroy	290-03-089		Pending		Omid Shakeri	Rezoning of a 0.48 acre site from Low Density Multiple Dwelling (R3-18D) and Agriculture (A) to Planned Development (PD) to construct eight attached townhomes with Tentative Subdivision Map for eight private residential lots and one common lot for driveway and guest parking areas. 1540 Pomeroy (A), 1530 Pomeroy (R3-18D) (CEQ2017-01036)					0			0			0				-				-				-				-				
	1700 Russell Ave		May-17	Approved	8/9/2017	Air Products	Use Permit to expand an existing air separation and gas production facility to increase the production of hydrogen for delivery to hydrogen fueling facilities (CEQ2017-01030)					0			0			0				-				-				-				-				
	1990 El Camino Real		Aug-16	Approved	9/1/2017	Chik-fil-A	Building façade upgrade, site improvement, and an addition of 1,790 square foot basement to an existing 3,234 square foot drive-through restaurant (McDonald). The new tenant (Chick-fil-A)					0			0			0				-				-				-				-				
	1375 El Camino Real		Apr-17	Pending		SCS Development	56 townhomes inclusive of 8 live work units					0			0			0				-				-				-				-				
11/2/2016	2232 El Camino Real	290-10-0913	6/30/2017	Approved	10/24/2017	Summerhill	Rezoning a 2.74 acre project site to PD fo a four-story mixed-use project with 151 senior apartment homes, 17,909 square foot of commercial space, and 277 parkin spaces provided in a wrapped parking structure and parking lot.				151	151	0	151	151		0	151		23,200	23,200	-				-				-	10,000			10,000			Rezoning, General Plan Amendment, and Vesting Tentative Parcel Map	
	1575 Pomeroy	290-03-089		Pending		Kurt Anderson and Nick Speno	Preliminary Review for a four-story 90-120 unit senior living apartment community																															
	3045 Stender	216-29-084	6/15/2017	Pending		Tiemo Mehner	Arch review for new 4-story 175,670 s.f. data center building with rooftop mechanical equipment. The project includes demolition of the existing single-story building.					0			0			0				-				-				-				-				
	1800 De La Cruz	230-04-02	7/12/2017	Pending	1/23/2018	Linda Evans	Use Permit for tenant improvements to an existing building in the heavy Industrial Area (MH) for conversion into a dog day care and boarding facility with covered outdoor activity area, landscape improvements and a new trash enclosure.					0			0			0				-				-				-				-				
	1150 Walsh	224-58-003	8/11/2017	Pending		Raging Wire/NTT	Proposed 248,000 square foot data cente and substation																						248,000		37,500					ML	LI		
	1725 De La Cruz	230-05-113	8/16/2017	Pending	10/25/2017	Silicon Valley Taproom	Use Permit to conversion of an existing 2,535 square foot light industrial building suite into a restaurant and tap room with a distilled spirits (Type 47 ABC) alcoholic beverage service license, 70 indoor seats and 12 outdoor patio seats, and to allow occassional indoor events live entertainment					0			0			0				-				-				-				-				
	500 El Camino Real	269-23-073	8/21/2017	Approved	9/20/2017	Santa Clara University	Architectural review of four-story, 368 bed dormitory (South Residence Hall)					0			0			0				-				-				-				-				
	2788 San Tomas Expressway	224-11-068	9/25/2017	Approved		Saris Regis for NVIDIA	Architectural review for a new 754,100 square-foot office building and a trellis; PHASE 2 of DA and allowed area additional 300K added to to Phase II originally planned for Phase III on other parcel.					0			0			0				-	754,100	-		754,100				-				-				
	2961 Corvin	216-33-040	Sep-17	Approved		Summerhill	Development application for 38 townhomes on .27 acre site consistent with LSAP. Tentative Subdivision Map filed.			38		38	3.8		38			38				-				-		4,503	4,503	-				-	LSAP		AC	

				Approved											Dwelling Units				Commercial Space				Office Space				Industrial Space				Retail Space								
Date Updated	**Street Number & Street Name**	**APN**	**Submittal Date**	**Status of Entitlement**	**Approval Date**	**Applicant**	**Tidemark Description**	**SFD Units (Detached) For Sale**	**SF Units (Detached) For Rent**	**MF Units For Sale**	**MF Units For Rent**	**Total Dwelling Units**	**Affordable units?**	**Senior Units**	**Proposed Number of Dwelling Units**	**Existing Dwellings**	**Existing Dwellings to be Removed**	**Net Amount of Dwelling Units**	**Proposed Commercial (non-office) SQ Ft**	**Existing Commercial (non-office) SQ FT**	**Existing Commercial (non-office) to be removed SQ FT**	**Net Commercial (non-office) SQ. FT.**	**Proposed Office SQ. FT.**	**Existing Office SQ. FT.**	**Existing Office to be Removed SQ. FT.**	**Net Existing Office SQ. FT.**	**Proposed Industrial SQ. FT.**	**Existing Industrial SQ. FT.**	**Existing Industrial to be Removed SQ. FT.**	**Net Industrial SQ. FT.**	**Proposed Retail SQ. FT.**	**Existing Retail SQ. FT.**	**Existing Retail to be Removed SQ. FT.**	**Net Retail SQ. FT.**	**Current Zoning**	**Current GP**	**Proposed Entitlements**	**CEQA Review**
	3005 Democracy	104-04-064, 65, 111, 112, 113, 142, 143, 150, 151	Oct-17	Pending		Ghenzan	General Plan Amendment from the High-Intensity Office/Research and Development (R&D) to a new designation allowing high-intensity mixed use development, including residential and office. 48.6 acre site. Former Yahoo office campus approval.					0			0			0				-				-				-				-							
	3035 El Camino Real	220-32-059	17-Oct	Pending		Hayden Land Corp.	Pre-application for 48 residential units (6 of which live-work units)			48		48	15%		48	0	0	48				-				-				-				-							
	1900 Warburton	224-20-027	11/14/2017	Pending		Samir Sharma	Rezone from General Office (OG) to Planned Development (PD) to construct 13 attached condo units in two buildings with a shared driveway on a 0.55 acre site			13		13	1		13	0		13				-				-		2,000	2,000	-				-							
10/12/2018	3035 El Camino Real	220-32-059	5/11/2018	Pending		Haden Land Company	Rezoning from CT to Planned Development (PD) and Architectural Review for the demolition of existing building and site improvements, and the new mixed use construction of 42 residential condominiums and 6 live work condominiums					48			48			48				-				-				-				-				-	CT	Community Mixed Use	Tentative Subdivision Map, Rezoning from CT to PD and AC approval	IS
10/12/2018	2200 Calle De Luna	097-05-098	7/27/2018	Pending		Holland Partner Group	Architectural review for three 12 residential towers over three-level parking garage wit 600 residential units.					601			601			601				-				-				-				-	B	Light Industrial		Addendum to EIR
10/12/2018	2101 Tasman Drive	097-05-056	7/30/2018	Pending		Related California	Architectural review of 950 multi-family units,associated amenity spaces, open space & 1.25 acre park (Addendum to EIR CEQ2018-01055). Tasman East Specific Plan.					950			950			950				-				-				-				-	ML	Light Industrial		Addendum to EIR
10/12/2018	2300 Calle De Luna	097-46-016	7/30/2018	Pending		Related California	Architectural review of 575 multi-family dwelling units, 25,000 sq.ft. retail, & associated amenity space (Addendum to EIR CEQ2018-01056). Tasman East Specific Plan					575			575			575	25,000			25,000				-				-				-	ML	Light Industrial		Addendum to EIR
10/12/2018	5185 Lafayette St.	097-46-011	7/31/2018	Pending		Ensemble Investments	Architectural review for a new mixed-use building consisting of 147 residential units and 3,650 square feet of retail space					147			147			147	3,650			3,650				-				-				-							
10/12/2018	5123 Calle Del Sol	097-46-019	7/31/2018	Pending		Ensemble Investments	Architectural Review of a 504 residential units and 23,170 square feet of retail space. In the first phase a single story industrial building will be demolished on parcel 19 to redevelop the property into a 85' tall mixed-use mid-rise consisting of 311 residential units with amenity space, 14,210 sf retail space and 462 parking spaces. In phase two a mixed-use high-rise will be built consisting of 193 residential units with amenity space, 8,960 sf of retail space and 149 parking spaces.					504			504			504	23,170			23,170				-				-				-				-							
10/12/2018	2263 Calle Del Mundo	097-05-060	7/31/2018	Pending			Architectural review for a new 148 unit residential developmen					0			0			0				-				-				-				-							
10/12/2018	2233 Calle Del Mundo	097-05-056	7/30/2018	Pending			Architectural review of 950 multi-family units,associated amenity spaces, open space & 1.25 acre park (Addendum to EIR CEQ2018-01055). Tasman East Specific Plan.					0			0			0				-				-				-				-							
10/12/2018	2529 Scott Blvd.	224-61-008	9/14/2018	Pending			Use Permit to allow coversion of an existing acupuncture to massage store. (Massage Establishment permit)					0			0			0				-				-				-				-							
10/12/2018	733 Scott Blvd.	269-30-043	9/26/2018	Pending			Variance application for one car garage, reduced front setback of 13'-6" and reduced side setback of 3'-6" in association with the 452 sq. ft. addition to the existing 1,328 sq.ft 3BR 2 B one story SFR resulting in 1,780 sq. ft. 4 BR 2 B one story SFR with the existing 248 sq. ft. one car garage.					0			0			0				-				-				-				-				-							
10/12/2018	1678 Coleman Ave	230-05-110	9/28/2018	Pending			Use Permit for a by-appointment fitness instruction center in an existing 5,600 square-foot building					0			0			0				-				-				-				-							
10/12/2018	2931 El Camino Real	220-31-079	7/16/2018	Pending			Use Permit to allow associated outdoor playground use(approximately 12,650 square feet) for a new pre-school/after school use for up to 167 children ages 3 years to 13 years in an existing 8,900 square foot one-story building. The proposed project would occupy only 40,698 square feet of the total 58,000 sq. ft property. This would include 70 full time children and 47 part time preschool and 50 afterschool children. Given the staggered schedule of the preschool and afterschool program, there will be a maximum of 120 students onsite at any time. The facility proposes to operate Monday through Friday from 8:00 a.m. to 6:30 p.m. with 9-12 staff members.					0			0			0				-				-				-				-				-							
10/12/2018	2343 Calle Del Mundo	097-05-063	7/30/2018	Pending			Architectural review of 347 unit apartment building & 0.425 acre park (Addendun to EIR CEQ2018-01057) & Lot Line Adjustment (Tasman East Specific Plan)					0			0			0				-				-				-				-				-							
10/12/2018	1444 Madison St.	269-03-034		Pending			Rezone from R3-36D to PD construct 3 detached single family residence each wit attached 2 car garage in conjunction with the demolition of the existing building strucutes on-site. Project includes a Tentative Parcel Map (PLN2018-13428).					0			0			0				-				-				-				-				-							
10/12/2018	2900 Lakeside Drive	216-30-048	7/11/2018	Pending	8/21/2018 (PCC)		Pre-application to demolish a two-story 54,000 square foot office building and site improvements, and construct a new 5-story 190 room hotel and associated parking structure on a 2.0 acre site					0			0			0				-				-				-				-				-							
10/12/2018	1190 Benton St.	269-22-069	6/21/2018	Approved	9/26/2018		Use Permit to allow outdoor play yard associated with new day care operation. Day care allowed as a permitted use under zoning.					0			0			0				-				-				-				-				-							

Approved

																Dwelling Units				Commercial Space				Office Space				Industrial Space				Retail Space							
Date Updated	Street Number & Street Name	APN	Submittal Date	Status of Entitlement	Approval Date	Applicant	Tidemark Description	SFD Units (Detached) For Sale	SF Units (Detached) For Rent	MF Units For Sale	MF Units For Rent	Total Dwelling Units	Affordable units?	Senior Units	Proposed Number of Dwelling Units	Existing Dwellings	Existing Dwellings to be Removed	Net Amount of Dwelling Units	Proposed Commercial (non-office) SQ Ft	Existing Commercial (non-office) SQ FT	Existing Commercial (non-office) to be removed SQ FT	Net Commercial (non-office) SQ. FT.	Proposed Office SQ. FT.	Existing Office SQ. FT.	Existing Office to be Removed SQ. FT.	Net Existing Office SQ. FT.	Proposed Industrial SQ. FT.	Existing Industrial SQ. FT.	Existing Industrial to be Removed SQ. FT.	Net Industrial SQ. FT.	Proposed Retail SQ. FT.	Existing Retail SQ. FT.	Existing Retail to be Removed SQ. FT.	Net Retail SQ. FT.	Current Zoning	Current GP	Proposed Entitlements	CEQA Review
10/12/2018	3131 Homestead	290-24-071	6/18/2018	Pending			Rezone from Moderate Density Residential (R3-25D) to Planned Development (PD) to demolish (8) 2-story apartment buildings and one-half 2-story apartment building (removing 86 units); (2) accessory buildings (central boiler & clubroom); & (8) carports (removing 94 parking stalls) for construction of (2) 4-story apartment buildings with 407 units over a partially subgrade parking structure with 439 parking spaces for a total of 585 units and 739 parking spaces on-site. PLN2018-013286 GPA & CEQ2018-01052					0			0			0			-				-				-				-				-							
10/12/2018	3725 El Camino Real		5/29/2018	Pending			Use Permit to allow a convenience store and potential restaurant in an existing service station					0			0			0				-				-				-				-							

From: Cliff Bargar [mailto:cliff.bargar@gmail.com]
Sent: Saturday, February 02, 2019 4:50 PM
To: George Schroeder <GSchroeder@sunnyvale.ca.gov>
Subject: Comments on Sunnyvale LSAP EIR scope

Hi George,

It was nice meeting you at Thursday's meeting. As I mentioned, I've spent over four years working inside the plan area and commute daily on Caltrain. Here are some of my thoughts on the scope of the draft EIR (similar to what I said during verbal public comment).

First, we know that regardless of what happens in the plan area, the populations of Sunnyvale, Santa Clara County, and the rest of the Bay Area will continue to grow. Given the plan area's close proximity to a large number of jobs and to Caltrain's Lawrence Station the overall environmental impact of adding more homes in the plan area is going to be lower than if those people were forced to live elsewhere in the county or in other counties.

Second, adding a higher density of homes (and to some extent offices) to the plan area will have a positive feedback effect. Having more people spending time in the plan area will enable more successful neighborhood retail, which in turn lessens the the environmental impact of residents (and workers) who are then able to do more of their shopping and other errands within this area. Similarly, a higher density of residents and workers is likely to sustain increased transit service, both on Caltrain and through potential new routes or higher frequency routes from VTA or other operators, which would also enable a lower environmental impact.

Similarly, the study should look at the effects of requiring parking on the total number of units that could be built, the cost of living in these units, and the ensuing travel patterns of residents. If less (or ideally no) parking is required it will be easier and cheaper for residents who don't own cars (or own fewer cars per household) to afford to live here. Parking should also be required to be unbundled from apartments so that residents aren't penalized for living a car-free or car-light lifestyle.

There should also be an investigation of the effects of improving the bike network connectivity (not just in the plan area but also with Santa Clara and the nearby parts of Sunnyvale), particularly in making Kifer Road more friendly to pedestrians and people on bikes. Building safer bike infrastructure and better sidewalks and crossings in (and near) the plan area will also facilitate a lower environmental impact by allowing residents, workers, and other visitors the opportunity to travel more easily, safely, and inexpensively without having to rely on cars for short trips or commutes.

Thanks,
Cliff

From: Sasan Saadat [mailto:ssaadat@earthjustice.org]
Sent: Thursday, February 14, 2019 2:38 PM
To: George Schroeder <GSchroeder@sunnyvale.ca.gov>
Cc: Matt Vespa <mvespa@earthjustice.org>
Subject: Earthjustice Comments on Lawrence Station Area Plan NOP

Mr. Schroeder,

Attached, please find comments from Earthjustice on the Notice of Preparation for the Lawrence Station Area Housing Study and Boundary Expansion.

Please ensure these comments are included in the administrative record for this action.

Thank you
Sasan

Sasan Saadat
Research and Policy Analyst
50 California Street, Suite 500
San Francisco, CA 94111
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EARTHJUSTICE.ORG

EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

Via Electronic Mail

February 14, 2019

George Schroeder

Senior Planner

City of Sunnyvale

gschroeder@sunnyvale.ca.gov

Re: Earthjustice Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Lawrence Station Area Plan Housing Study and Boundary Expansion

Earthjustice appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report ("DEIR") for the Lawrence Station Area Plan Housing Study and Boundary Expansion ("Project"), which contemplates increasing the maximum density allowance in the Project area for a possible total of 3,612 additional units. Our initial comments focus on the importance of incorporating building electrification requirements into the Project. The transition from gas to electric buildings is critical to reaching a zero emissions future and will not occur at the scale or timing needed absent decisive leadership from the City of Sunnyvale ("City"). Consistent with California Environmental Quality Act ("CEQA") requirements to adopt all feasible mitigation to reduce significant greenhouse gas ("GHG") and energy impacts, building electrification is essential mitigation to reduce Project impacts and take meaningful action to address climate change. Building electrification will also provide economic, safety, and air quality benefits for the City. We therefore urge the City to require all-electric construction as feasible mitigation in the DEIR for the Project.

I. The Plan Will Have Significant GHG and Energy Impacts.

CEQA requires a DEIR identify all the significant impacts of a proposed project, including from the project's GHG emissions and energy use.[1] To determine the significance of the Plan's GHG impacts, the City should apply a net-zero emissions threshold. A net-zero threshold is also consistent with the severity of the climate crisis and the recognition that any increase in GHG emissions exacerbates the cumulative impacts of climate.

In determining the significance of project impacts, the City "must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." *Cleveland National Forest Foundation v. San Diego Assn. of Gov'ts* (2017) 3 Cal.5th 497, 519. Non-zero numeric thresholds, such as the 1,100 MT GHG significance threshold proposed by the Bay Area Air Quality Management District ("BAAQMD") in 2009 are unlikely to survive legal

[1] CEQA Guidelines § 15126.2; Appendix F; Appendix G § VII.

scrutiny. The BAAQMD numeric threshold was derived from Assembly Bill ("AB") 32's 2020 GHG reduction targets and does not reflect Senate Bill 32's requirement to reduce GHGs to 40 percent below 1990 levels by 2030 or our increased understanding of the severity of climate impacts California is and will experience.[2] While useful when first recommended ten years ago, it has not kept in step with scientific knowledge and regulatory developments and is no longer supported by substantial evidence.

Alternative approaches to determining the significance of Project GHG impacts, such as using a comparison against "business-as-usual" emissions or a per capita emissions metric, may not withstand legal scrutiny and should not be used to evaluate the Plan's emissions in the DEIR. In *Center for Biological Diversity v. Cal. Dept of Fish & Wildlife* (2015) 62 Cal.4th 204, the California Supreme Court held that determining the significance of project GHG impacts by comparing project emissions with emissions under a business-as-usual scenario derived from statewide emissions reduction goals under AB 32 lacked substantial evidence. For similar reasons, use of statewide per capita emissions metrics to determine the significance of project emissions has also been rejected for the purpose of determining project GHG impacts under CEQA. As the court held in *Golden Door Properties LLC,* because "using a statewide criterion requires substantial evidence and reasoned explanation to close the analytical gap left by the assumption that the 'level of effort required in one [statewide] context . . . will suffice in the other, a specific land use development.'" *Golden Door Properties LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 904 (quoting *Center for Biological Diversity*, 62 Cal.4th at 227). While use of a statewide per capita metric to determine the significance of GHG impacts may be useful for a General Plan, which examines collective community emissions of existing and proposed new development, it is not appropriate for projects that only govern new development. Accordingly, the City should apply a net-zero emissions GHG threshold to ensure a legally defensible EIR. Because the Plan will result in an increase in GHG emissions, the City should consider its GHG impacts significant.

In addition to GHG emissions, a key purpose of the evaluation of project energy impacts under CEQA is "decreasing reliance on fossil fuels, such as coal, natural gas and oil."[3] Addressing energy impacts of proposed projects requires more than mere compliance with Title 24 Building Energy Efficiency Standards.[4] As the California Energy Commission ("CEC") determined its 2018 Integrated Energy Policy Report ("IEPR") Update:

> New construction projects, retrofitting existing buildings, and replacing appliances and other energy-consuming equipment essentially lock in energy system infrastructure for many years. As a result, each new opportunity for truly impactful investment in energy efficiency and fuel choice is precious. If the decisions made for new buildings result in new and continued fossil fuel use, it will be that much more difficult for California to meet its GHG emission

[2] *See* BAAQMD, *CEQA Guidelines Update, Proposed Thresholds of Significance* at 10-22 (Dec 7, 2009), http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/proposed-thresholds-of-significance-dec-7-09.pdf?la=en (explaining methodology for project-level GHG threshold).
[3] CEQA Guidelines, Appendix F, Sec. I.
[4] *See California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 211.

reduction goals. Parties planning new construction have the opportunity instead to lock in a zero- or low-carbon emission outcome that will persist for decades.[5]

Including gas hook-ups in new projects, and thereby perpetuating reliance on fossil fuels, is contrary to California's energy objectives and decarbonization trajectory and must be considered a significant impact.

II. Building Electrification is Feasible and Effective Mitigation to Reduce Project GHG and Energy Impacts.

A lead agency may not lawfully approve a Project where "there are feasible alternatives or feasible mitigation measures available which would substantially lessen [its] significant environmental effects."[6] Eliminating natural gas use in new buildings is feasible mitigation that will substantially lessen the Plan's GHG and energy impacts. Indeed, building electrification is one of the fastest and most cost-effective ways to achieve the transition to net-zero emissions. In the 2018 IEPR Update, the CEC recognized the "growing consensus that building electrification is the most viable and predictable path to zero-emission buildings . . . due to the availability of off-the-shelf, highly efficient electric technologies (such as heat pumps) and the continued reduction of emission intensities in the electricity sector."[7]

All-electric developments are being constructed for a range of building types pursuing low or zero emissions objectives and are a feasible mitigation requirement for new development under the Plan. Sacramento's Municipal Utility District has partnered with homebuilders to construct entire neighborhoods that are all-electric, with 400 all-electric homes planned in the next two years alone.[8] Some California developers now exclusively build all-electric homes, and have already deployed a range of affordable, luxury, single- and multi-family housing units all across the state.[9] Given that other entities are now requiring all-electric construction, there is no reason for the City not to also do so. For example, the University of California announced in August of 2018 that "[n]o new UC buildings or major renovations after June 2019, except in special circumstances, will use on-site fossil fuel combustion, such as natural gas, for space and water heating."[10]

Similarly, in its Downtown Specific Plan, the City of Hayward required for multifamily residential developments that "[a]ll buildings will be all electric, meaning that electricity is the only permanent source of energy for water-heating, mechanical and heating, ventilation, and air conditioning (HVAC) (i.e., space-heating and space cooling), cooking, and clothes-drying and

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[5] CEC, *2018 Integrated Energy Policy Report Update, Vol. II* at 18 (Jan. 2019), https://efiling.energy.ca.gov/getdocument.aspx?tn=226392

[6] Pub. Res. Code § 21002.

[7] CEC, *2018 Integrated Energy Policy Report Update, Vol. II* at 20 (Jan. 2019), https://efiling.energy.ca.gov/getdocument.aspx?tn=226392.

[8] Justin Gerdes, *All-Electric Homes Are Becoming the Default for New Residential Construction in Sacramento*, Greentech Media (Nov. 13, 2018), https://www.greentechmedia.com/articles/read/all-electric-homes-are-becoming-the-default-for-new-residential-constructio#gs.VYzCCMQ.

[9] *See* Redwood Energy, *Development Projects (A Small Sample)*, https://www.redwoodenergy.tech/development-projects/.

[10] University of California, *UC sets higher standards, greater goals for sustainability* (Sept. 4, 2018), https://www.universityofcalifornia.edu/press-room/uc-sets-higher-standards-greater-goals-sustainability.

there is no gas meter connection."[11] The natural next step is to extend such a requirement to commercial developments, which can also be feasibly electrified.[12]

III. There Are Multiple Co-Benefits to Achieving Zero Emission Buildings through Electrification.

Beyond achieving the energy and GHG emissions reductions essential for preventing climate breakdown, electrification of new buildings will produce a range of important co-benefits for the economic well-being, safety, and health of the community. Building electrification offers the potential to lower energy bills, reduce the cost of new construction, improve air quality, public safety, and climate resiliency, as well as create new jobs. Far from being a barrier to new housing, all-electric new construction can enable greater opportunities for affordable housing construction by reducing costs and streamlining mitigation requirements. For disadvantaged populations that pay a disproportionate amount of their income to energy costs, and who are more likely to suffer from asthma due to poor indoor air quality, zero emission homes are an important opportunity to deliver social equity.[13]

A. Lowering Energy Bills and Cost of New Construction

All-electric buildings can lower utility bills for tenants, reduce the cost of construction of new housing in the City, and shield customers from the volatile and increasing costs of gas. A recent report, *Decarbonization of Heating Energy Use in California Buildings*, by Synapse Energy Economics found that electrification could lower utility bills by up to $800 annually and lower the cost of new construction in Los Angeles by roughly $1,500 to $6,000.[14] Other analysis has found that new homes and apartment buildings can cost between $1,000 and $18,000 less to build if they are not connected to gas distribution pipelines.[15] The UC has carefully examined feasibility and costs of all-electric buildings in the report: UC Carbon Neutral Buildings Cost Study. The first key insight offered is that "[a]ll-electric buildings are comparable or slightly less expensive tha[n] gas + electric buildings from a 20-year Life Cycle Cost perspective."[16] The most significant cost savings were found for residential buildings, where the average Life Cycle Cost for all-electric was $5.28/sf lower compared to gas + electric options.[17]

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[11] City of Hayward, *Hayward Downtown Specific Plan DEIR, Greenhouse Gas Emissions Chapter* at 4.6-40 (Jan. 7, 2019), https://www.hayward-ca.gov/sites/default/files/documents/dtsp-eir-greenhouse-gas-emissions.pdf.
[12] *See, e.g.*, Redwood Energy, *Zero Carbon Commercial Construction: An Electrification Guide for Large Commercial Buildings and Campuses* (2019), https://drive.google.com/file/d/1L5IBsSmT-p8he6dmrW565l6ZB_dkXya9/view.
[13] Kelly Vaugh, *Social Equity, Affordable Housing, and the Net-Zero Energy Opportunity*, Rocky Mountain Institute (May 9, 2018), https://rmi.org/social-equity-affordable-housing-and-the-net-zero-energy-opportunity/.
[14] Synapse Energy Economics, *Decarbonization of Heating Energy Use in California Buildings* at 2, 39 (Oct. 2018), http://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf.
[15] Stone Energy Associates, *Accounting for Cost of Gas Infrastructure*, CEC Docket 17-BTSD-01 (May 4, 2017), https://efiling.energy.ca.gov/GetDocument.aspx?tn=217420&DocumentContentId=26959.
[16] Point Energy Innovations, *UC Carbon Neutral Buildings Cost Study* at 3 (June 2017), https://www.ucop.edu/sustainability/_files/Carbon%20Neutral%20New%20Building%20Cost%20Study%20FinalReport.pdf.
[17] *Id.*

B. A Safer Community

Recent events from Aliso Canyon, San Bruno, and the state of Massachusetts add to the devastating record of hazardous natural gas infrastructure. Between 2015 and 2017, natural gas pipeline explosions and incidents in the country claimed on average 15 fatalities, 57 injuries, and $316,647,907 in property damage *annually*.[18] As climate impacts intensify, the escalating risks of aging natural gas infrastructure will outpace the industry's rate of pipeline replacement. Sea level rise, which promises to be one of the many significant climate impacts affecting the region, especially amplifies the risks of natural gas.[19]

Methane leakage, a pervasive problem with natural gas infrastructure, can be particularly hazardous for families living in earthquake and fire-prone areas since leaking gas exacerbates fires after earthquakes. The California Seismic Safety Commission estimates that 20 to 50 percent of total post-earthquake fires are fires related to gas leaks.[20] Beginning to electrify entire communities is a key precautionary strategy to mitigate the growing risks of California's massive gas system.

C. Improved Air Quality

Gas appliances in buildings make up a quarter of California's nitrogen oxide (NO_x) emissions from natural gas. NO_x is a precursor to ozone and a key pollutant to curb in order to comply with state and federal ambient air quality standards. Electrifying buildings will help the City to reduce NO_x and ground level ozone, improving *outdoor* air quality and benefiting public health. Electrification of fossil fuel appliances will also immediately improve *indoor* air quality and health. On average, Californians spend 68 percent of their time indoors, making indoor air quality a key determinant of human health.[21] The combustion of gas in household appliances produces harmful indoor air pollution, specifically nitrogen dioxide, carbon monoxide, nitric oxide, formaldehyde, acetaldehyde, and ultrafine particles.[22] The California Air Resources Board warns that "cooking emissions, especially from gas stoves, have been associated with

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[18] Pipeline and Hazardous Materials Safety Administration, *Pipeline Incident 20 Year Trends* (Nov. 2018), https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends.

[19] Radke *et al.*, *Assessment of California's Natural Gas Pipeline Vulnerability to Climate Change*, University of California, Berkeley (2016), https://www.energy.ca.gov/2017publications/CEC-500-2017-008/CEC-500-2017-008.pdf.

[20] California Seismic Safety Commission, *Improving Natural Gas Safety in Earthquakes* at 1 (adopted July 11, 2002), http://ssc.ca.gov/forms_pubs/cssc_2002-03_natural_gas_safety.pdf.

[21] Klepeis *et al.*, *The National Human Activity Pattern Survey (NHAPS): A Resource for Assessing Exposure to Environmental Pollutants*, J. EXPO. ANAL. ENVIRON. EPIDEMIOL., Vol. 11(3), 231-52 (2001).

[22] *See, e.g.*, Logue *et al.*, *Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California*, ENVIRON. HEALTH PERSP., Vol. 122(1), 43-50 (2014); Victoria Klug & Brett Singer, *Cooking Appliance Use in California Homes—Data Collected from a Web-based Survey*, LAWRENCE BERKELEY NATIONAL LABORATORY (Aug. 2011); John Manuel, *A Healthy Home Environment?* ENVIRON. HEALTH PERSP., Vol. 107(7), 352-57 (1999); Mullen *et al.*, *Impact of Natural Gas Appliances on Pollutant Levels in California Homes*, LAWRENCE BERKELEY NATIONAL LABORATORY (2012).

increased respiratory disease."[23] Young children and people with asthma are especially vulnerable to indoor air pollution.

D. Pathways to Good, Green Jobs

Electrification of buildings will enable local workforce development for jobs that will be critical in California's broader energy transition. Partnering with local organizations and community colleges, the City can foster training and pipeline programs for new jobs in construction, HVAC installation, electrical work, energy efficiency and load management services, as well as manufacturing.

These jobs will rapidly grow in demand as local governments across the state look to rapidly address the emissions from their building sector. In Sacramento Municipal Utility District territory, where all-electric buildings are quickly becoming the default for new developments, demand for specialized plumbers and HVAC technicians is expected to grow enormously. The region expects to install more than 300,000 heat pump space heaters in the next 15 to 20 years.[24]

The next one to five years will be a critical window of opportunity for the City to jump-start this transition away from gas to clean energy buildings. CEQA is an essential vehicle to take all feasible action to reduce GHGs and limit further expansion of gas infrastructure and we urge incorporation of all-electric building design into the Project.

Please contact Matt Vespa at mvespa@earthjustice.org, Sasan Saadat at ssaadat@earthjustice.org with any questions or concerns, and please include each of us in future notifications on the Plan's development.

Sincerely,

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[23] California Air Resources Board, *Combustion Pollutants* (last reviewed Jan. 19, 2017), https://www.arb.ca.gov/research/indoor/combustion.htm.
[24] Justin Gerdes, *Experts Discuss the Biggest Barriers Holding Back Building Electrification*, Greentech Media (Sept. 19. 2018), https://www.greentechmedia.com/articles/read/here-are-some-of-the-biggest-barriers-holding-back-building-electrification#gs.fBEBKJy2.

County of Santa Clara

Office of the County Clerk-Recorder
Business Division

County Government Center
70 West Hedding Street, E. Wing, 1st Floor
San Jose, California 95110 (408) 299-5688

Santa Clara County - Clerk-Recorder Office
State of California

File Number: ENV21959

ENVIRONMENTAL FILING
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Expires: 02/10/2019

REGINA ALCOMENDRAS, Clerk-Recorder
By: Mike Louie, Deputy Clerk-Recorder

CEQA DOCUMENT DECLARATION

ENVIRONMENTAL FILING FEE RECEIPT

PLEASE COMPLETE THE FOLLOWING:

1. **LEAD AGENCY:** City of Sunnyvale
2. **PROJECT TITLE:** Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion
3. **APPLICANT NAME:** City of Sunnyvale **PHONE:** 408-730-7440
4. **APPLICANT ADDRESS:** 456 W. Olive Avenue, Sunnyvale, CA 94086
5. **PROJECT APPLICANT IS A:** ☒ **Local Public Agency** ☐ **School District** ☐ **Other Special District** ☐ **State Agency** ☐ **Private Entity**
6. **NOTICE TO BE POSTED FOR** 30 **DAYS.**
7. **CLASSIFICATION OF ENVIRONMENTAL DOCUMENT**

a. **PROJECTS THAT ARE SUBJECT TO DFG FEES**

☐ 1. **ENVIRONMENTAL IMPACT REPORT** (PUBLIC RESOURCES CODE §21152)	$ 3,271.00	$ 0.00
☐ 2. **NEGATIVE DECLARATION** (PUBLIC RESOURCES CODE §21080(C)	$ 2,354.75	$ 0.00
☐ 3. **APPLICATION FEE WATER DIVERSION** (STATE WATER RESOURCES CONTROL BOARD ONLY)	$ 850.00	$ 0.00
☐ 4. **PROJECTS SUBJECT TO CERTIFIED REGULATORY PROGRAMS**	$ 1,112.00	$ 0.00
☐ 5. **COUNTY ADMINISTRATIVE FEE** (REQUIRED FOR **a-1** THROUGH **a-4** ABOVE) Fish & Game Code §711.4(e)	$ 50.00	$ 0.00

b. **PROJECTS THAT ARE EXEMPT FROM DFG FEES**

☐ 1. **NOTICE OF EXEMPTION** ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)	$ 50.00	$ 0.00
☐ 2. **A COMPLETED "CEQA FILING FEE NO EFFECT DETERMINATION FORM" FROM THE DEPARTMENT OF FISH & GAME, DOCUMENTING THE DFG'S DETERMINATION THAT THE PROJECT WILL HAVE NO EFFECT ON FISH, WILDLIFE AND HABITAT, OR AN OFFICIAL, DATED RECEIPT / PROOF OF PAYMENT SHOWING PREVIOUS PAYMENT OF THE DFG FILING FEE FOR THE *SAME PROJECT IS ATTACHED** ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)		
DOCUMENT TYPE: ☐ ENVIRONMENTAL IMPACT REPORT ☐ NEGATIVE DECLARATION	$ 50.00	$ 0.00

c. **NOTICES THAT ARE *NOT* SUBJECT TO DFG FEES *OR* COUNTY ADMINISTRATIVE FEES**

☒ **NOTICE OF PREPARATION** ☐ **NOTICE OF INTENT**	NO FEE	$ NO FEE

8. **OTHER:** _____ **FEE** (IF APPLICABLE): $ _____
9. **TOTAL RECEIVED** ..... $ 0.00

*NOTE: "***SAME PROJECT***" MEANS **NO** CHANGES. IF THE DOCUMENT SUBMITTED IS NOT THE SAME (OTHER THAN DATES), A "NO EFFECT DETERMINATION" LETTER FROM THE DEPARTMENT OF FISH AND GAME FOR THE **SUBSEQUENT** FILING OR THE APPROPRIATE FEES ARE REQUIRED.

THIS FORM MUST BE COMPLETED AND ATTACHED TO THE FRONT OF ALL CEQA DOCUMENTS LISTED ABOVE (*INCLUDING COPIES*) SUBMITTED FOR FILING. WE WILL NEED AN ORIGINAL (WET SIGNATURE) AND TWO (2) COPIES. IF THERE ARE ATTACHMENTS, PLEASE PROVIDE THREE (3) SETS OF ATTACHMENTS FOR SUBMISSION. *(YOUR ORIGINAL WILL BE RETURNED TO YOU AT THE TIME OF FILING.)*

CHECKS FOR ALL FEES SHOULD BE MADE PAYABLE TO: SANTA CLARA COUNTY CLERK-RECORDER

PLEASE NOTE: FEES ARE ANNUALLY ADJUSTED (Fish & Game Code §711.4(b); PLEASE CHECK WITH THIS OFFICE AND THE DEPARTMENT OF FISH AND GAME FOR THE LATEST FEE INFORMATION.

". . . NO PROJECT SHALL BE OPERATIVE, VESTED, OR FINAL, NOR SHALL LOCAL GOVERNMENT PERMITS FOR THE PROJECT BE VALID, UNTIL THE FILING FEES REQUIRED PURSUANT TO THIS SECTION ARE PAID." Fish & Game Code §711.4(c)(3)

(Fees Effective 01-01-2019)

Sunnyvale

Notice of Preparation

Of a Draft Environmental Impact Report for the
Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion

DATE: January 11, 2019

TO: Responsible, Trustee, and Other Interested Public Agencies; Interested Parties

FROM: City of Sunnyvale
Community Development Department
456 W. Olive Avenue
P.O. Box 3707
Sunnyvale, CA 94088-3707

NOTICE IS HEREBY GIVEN THAT the City of Sunnyvale, as Lead Agency under the California Environmental Quality Act (CEQA), has prepared a Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for the proposed Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion. The NOP includes a project description, exhibits, summary of key issues to be addressed in the EIR, and an overview of the purpose of this notice and the environmental review process.

30-Day NOP Review Period: Agencies and interested parties may provide the City with written comments on environmental topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5:00 p.m. on **February 11, 2019**. Please send all comments to:

George Schroeder, Senior Planner
City of Sunnyvale, Community Development Department/Planning Division
456 W. Olive Avenue
Sunnyvale, CA 94086

Phone: (408) 730-7443
gschroeder@sunnyvale.ca.gov

Public Scoping Meeting: The City of Sunnyvale (City) will hold a public scoping meeting to receive comments on environmental issues that should be addressed in the Draft EIR as well as the range of practicable alternatives to be evaluated in the Draft EIR. The date, time, and address of this meeting are as follows:

January 31, 2019
7:00 p.m.
City Hall
Council Chambers
456 W. Olive Avenue

Project Location: The City of Sunnyvale Lawrence Station Area Plan (LSAP) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California. The Lawrence Caltrain Station is situated below an overpass of Lawrence Expressway. Lawrence Expressway bisects the plan area north-south, while the Caltrain right-of-way bisects the area east-west. The existing plan area north of the tracks is bounded by Kifer Road and the City of Santa Clara border to the north, Uranium Drive and the City of Santa Clara border to the east, and 960 Kifer Road (APN 205-49-008) to the west.

The existing plan area south of the tracks is located west of Lawrence Expressway, north of Reed Avenue, and includes the Calstone-Peninsula Building Materials site at 1155-1175 Aster Avenue (APNs 213-01-034, - 033, -032), a townhouse development on Buttercup Terrace (APNs 213-73-001 to – 016), a commercial property at 1159 Willow Avenue (APN 213-01-023), and four commercial properties at the northeast corner of Willow Avenue and Reed Avenue (APNs 213-01-001, -002, -003, and -004).

Although the ½ mile radius around the Lawrence Caltrain Station includes properties within the City of Santa Clara and existing residential properties south of the tracks in the City of Sunnyvale, there are no changes proposed to these properties. There are only changes proposed to certain LSAP zoning districts described in the following sections. Refer to Exhibit 1 for a map of the LSAP and surrounding vicinity.

Project Background and Existing Land Uses: In December 2016, the City Council approved the LSAP and its associated General Plan Amendment and Rezoning. The City prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2013082030) for the LSAP that evaluated the environmental impacts associated with development of the LSAP. The LSAP supports mixed-use office/research and development (R&D), residential, and retail uses near the Lawrence Caltrain Station. The land uses and circulation identified in the LSAP support transit ridership and provide improved access throughout the LSAP area for pedestrians, bicyclists, and motor vehicles.

In April 2017, the City Council adopted an update to the City's Land Use and Transportation Element (LUTE) of its General Plan. The City prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2012032003) for the LUTE that evaluated the environmental impacts associated with development of the City based on the land use and transportation elements established in the LUTE. The LUTE EIR included the development assumptions in the LSAP. The LUTE designates land uses in the LSAP as Transit Mixed Use (TMU). The boundary expansion component of the project includes three sites currently designated as Industrial (IND).

At time of the LSAP adoption, the Council directed staff to return with a plan to study additional housing opportunities within the LSAP area. The City Council subsequently selected a preferred land use alternative on June 26, 2018, which studies an increase in the density allowance for both MXD-I (Flexible Mixed-Use I) and MXD-II (Flexible Mixed-Use II) zoned areas, and expands the area for where housing may be considered to the M-S/LSAP (Industrial and Service, LSAP Combining District) and O-R (Office/Retail) zoning districts. The LSAP update also includes a Sense of Place Plan which will address design criteria for sidewalks, lighting, tree grates, benches, etc. and outline an implementation plan for these elements. The Sense of Place Plan will also study a pedestrian/bicycle route from the east and west ends of the LSAP boundaries to the Lawrence Caltrain Station.

On August 14, 2018, the City Council authorized a study to include properties owned by Intuitive Surgical, Inc. at 932, 950, and 945-955 Kifer Road in the LSAP boundaries, and directed staff to include these amendments in the LSAP Housing Study. This would expand the existing LSAP boundary to the west, on either side of Kifer Road in the City of Sunnyvale. The Council also directed staff to study a pedestrian/bicycle route from the subject properties to the Lawrence Caltrain Station and analyze methods to retain trees and open space within the 945-955 Kifer Road property.

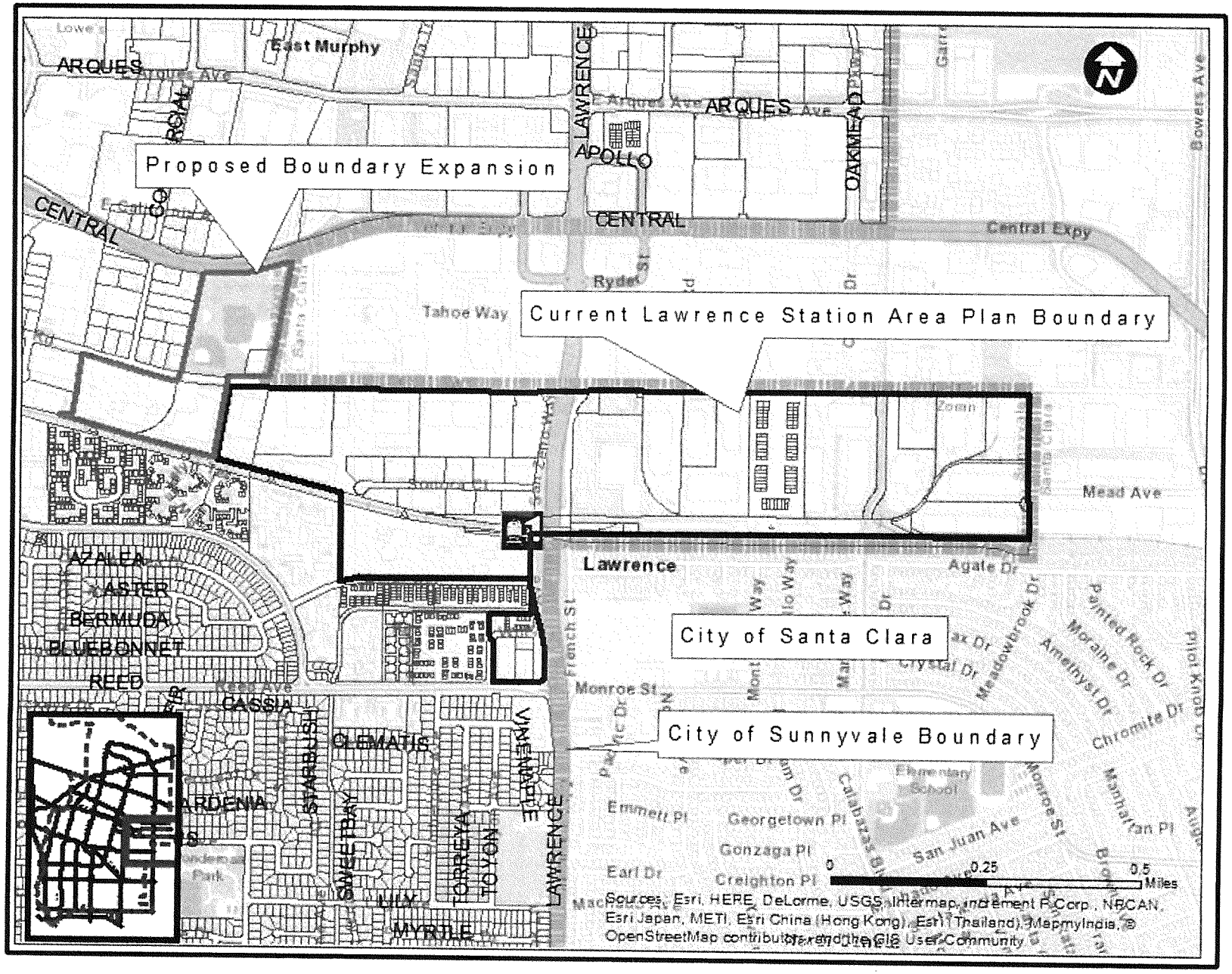


Exhibit 1

Project Location

Existing land uses in the LSAP north of the tracks consist of industrial and commercial uses on larger parcels. Several development projects are under construction, including new office buildings at 1050-1090 Kifer Road, a mixed-use residential/retail project at 1120-1130 Kifer Road, and a new self-storage building at 106 Lawrence Station Road. Land uses south of the rail line in the LSAP consist of a building materials site, townhomes, and commercial uses.

Project Description: There are two main components to the project – studying additional housing potential in the LSAP and expanding the boundary to include three additional office/research and development (R&D) sites. These components and the Sense of Place Plan are anticipated to require amendments to LSAP policy provisions and guidelines. Refer to Exhibit 2 for a map of the project description.

Housing Study

The Housing Study project description, as authorized by the City Council on June 26, 2018, consists of increasing the maximum density allowance (in dwelling units per acre – du/ac) for MXD-I and MXD-II zoned areas (from 68 du/ac to 100 du/ac) and expanding the area for where housing may be considered to the M-S/LSAP zoning district (maximum of 100 du/ac) and O-R (maximum of 54 du/ac). A total of 3,612 additional units will be studied, resulting in a total number of 5,935 allowable units in the LSAP. The maximum residential development capacity under the existing LSAP is 2,323 units. The below table shows the proposed changes in each of the LSAP zoning districts:

Zoning District	Existing LSAP Maximum Density with incentives	Proposed LSAP Maximum Density with incentives
MXD-I	68 du/ac	100 du/ac + 803 units
MXD-II	68 du/ac	100 du/ac + 961 units
MXD-III	54 du/ac	No change
O-R	0	54 du/ac + 166 units
M-S/LSAP	0	100 du/ac + 1,682 units
R-5	Based on lot area. See SMC Table 19.30.040	No change
	Additional units	**3,612**
	Current LSAP buildout – units	**2,323**
	Proposed buildout - units	**5,935**

Boundary Expansion

The proposed expansion of the western LSAP boundary was requested by Intuitive Surgical, Inc., and authorized to be studied by the City Council on August 14, 2018. The sites requested for inclusion in the LSAP boundary expansion are 932, 950, and 945-955 Kifer Road. The applicant intends to redevelop these sites for a total of 1,140,096 square feet of office/R&D development, which represents an increase of 949,540 square feet over existing conditions, or 646,049 square feet over the maximum allowed square footage under the current land use regulations. If included in the LSAP boundaries, the redevelopment of these sites would not require an increase to the overall LSAP development capacity, given the existing balance available. There would also be a higher floor area ratio (FAR) allowance above current regulations.

Environmental Issues to Be Addressed In EIR:

The City has determined that implementing the project may result in significant environmental impacts; therefore, an EIR will be prepared. As allowed under State CEQA Guidelines Section 15060(d) (when the decision to prepare an EIR has already been made), the City has elected not to prepare an initial study and will instead begin work directly on the EIR.

Potential issues and impacts to the existing environment to be analyzed in the Draft EIR include the following environmental topics:

- Aesthetics
- Hydrology and Water Quality
- Air Quality
- Energy
- Biological Resources
- Archaeological, Historical, and Tribal Cultural Resources
- Noise and Vibration
- Hazards and Hazardous Materials
- Land Use and Planning
- Population and Housing
- Public Services and Utilities
- Traffic and Circulation
- Geology and Soils
- Recreation
- Greenhouse Gas Emissions

Implementation of the project would have no impact on agricultural resources, forestry resources, or mineral resources as these resources do not exist in the LSAP area. The LSAP area is surrounded by urban development and is not adjacent to or intermixed with open space, natural land, or rural/agricultural lands. New construction is subject to the City Municipal Code and the California Fire Code, which includes safety measures to minimize the threat of fire. Thus, the project would have no impact related to wildfire risk. These issues will not be evaluated in the Draft EIR.

Other EIR Sections: In addition to the above environmental topics, the Draft EIR will also evaluate the potential cumulative and growth inducing effects of the project, as required by CEQA. Reasonably foreseeable future projects in the project vicinity will be considered in this analysis.

In accordance with section 15126.6 of the State CEQA Guidelines, an EIR must "describe a range of reasonable alternatives to the project, or to the location of the Project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." As required by CEQA, the EIR will evaluate a No Project Alternative. Aside from the No Project Alternative, the City has not yet determined what additional alternatives to the project will be evaluated in the EIR. These will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.

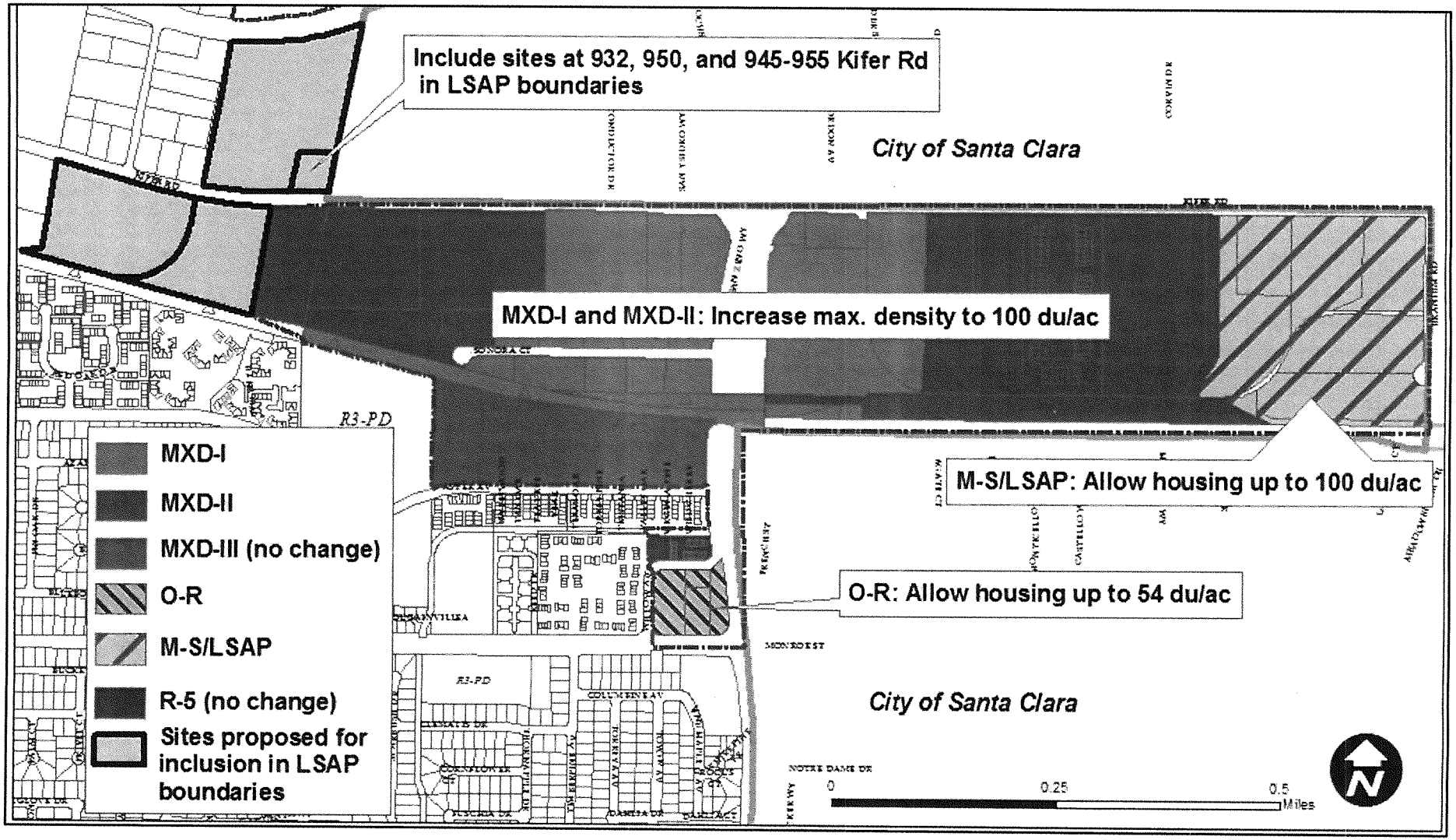


Exhibit 2

Map of Project Description

Purpose of this Notice: In accordance with the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15082), the City has prepared this NOP to inform agencies and interested parties that an EIR will be prepared for the above-referenced project. The purpose of an NOP is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (State CEQA Guidelines 14 CCR Section 15082[b]).

Environmental Review Process: Following completion of the 30-day NOP public review period, the City will incorporate relevant information into the Draft EIR, including results of public scoping and technical studies. The Draft EIR will be circulated for public review and comment for 45-day public review period. All parties that have requested to be included on the project mailing list will be provided a Notice of Availability for the Draft EIR.

A copy of this NOP has been posted on the City's website: https://sunnyvale.ca.gov/business/projects/lawrence.htm and is on file at the City's One-Stop Permit Center at 456 W. Olive Avenue Sunnyvale, CA 94086.

If you would like to be placed on the project mailing list or have any questions or comments, please contact George Schroeder, Senior Planner, City of Sunnyvale, at (408) 730-7443 or gschroeder@sunnyvale.ca.gov.

Regina Alcomendras
Santa Clara County
Clerk-Recorder
(408) 299-5688
https://www.clerkrecorder.org

Receipt: 19-6434

Product	Name	Extended
CEQA	ENVIRONMENTAL FILING	$0.00
	# Pages	8
	Document #	ENV21959
	Document Info:	CITY OF SUNNYVALE
	Filing Type	P
Total		$0.00
Change (Cash)		$0.00

PLEASE KEEP FOR REFERENCE

1/11/19 10:41 AM mlouie

State of California - Department of Fish and Wildlife

2018 ENVIRONMENTAL FILING FEE CASH RECEIPT

DFW 753.5a (Rev. 10/31/17) Previously DFG 753.5a

RECEIPT NUMBER: ENV21959

STATE CLEARINGHOUSE NUMBER *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEADAGENCY EMAIL	DATE
CITY OF SUNNYVALE		01/11/2019

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
SANTA CLARA	

PROJECT TITLE

LAWRENCE STATION AREA PLAN (LSAP) HOUSING STUDY AND BOUNDRY EXPANSION

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
CITY OF SUNNYVALE		(408) 730-7440

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
456 W. OLIVE AVENUE	SUNNYVALE	CA	94086

PROJECT APPLICANT *(Check appropriate box)*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,168.00	$
☐ Mitigated/Negative Declaration (MND)(ND)	$2,280.75	$
☐ Certified Regulatory Program document (CRP)	$1,077.00	$

☐ Exempt from fee

- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach copy of previously issued Environmental Filing Fee Cash Receipt (DFW 753.5a))

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$
☐ County documentary handling fee		$
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☐ Check ☒ Other **TOTAL RECEIVED** $ $0.00

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X Mike Louie	Mike Louie, Deputy County Clerk-Recorder

ORIGINAL - PROJECT APPLICANT COPY - CDFW/ASB COPY - LEAD AGENCY COPY - COUNTY CLERK DFW 753.5a (Rev. 20151215)

LSAP Environmental Scoping Meeting
Thursday, January 31, 2019
City Council Chambers

of Attendees: 10, including the general public, area property owners, and representatives from Intuitive Surgical

Verbal Comments:

Cliff Bargar

- This would be the best possible place to add more housing.
- Additional housing near transit would minimize parking demand, encourage transit use, attract more retail, and result in less auto trips.
- The road diet on Kifer Road should be expedited.
- The existing conditions on Kifer Road discourage people from walking on the street.

I also got a follow-up e-mail from him that I'll send over.

Nilo Coban

- Lives near the O-R zoning district on Reed Ave.
- Supports mixed-use development here, will help meet VMT reduction goals.
- Parking minimums should be reduced.
- Lawrence Expy/Reed Ave intersection not very safe, especially the free right turn lane. Dangerous conditions for pedestrians.
- Make it safer to walk to the existing residential area around Reed Ave.

Sue Serrone

- Plan is forward thinking.
- Would like to see more affordable housing options.
- Likes transit-oriented development.
- Would like to advocate for a clearer definition of biological resources.
- How can we make the land and habitat better for humans and biological resources? We should create sustainable paradigms.
- Would like to see mandatory incentives.
- Test soils for regenerative soils, carbon sequestration.

From: Marja Bienk
To: George Schroeder
Subject: Lawrence Station Area Plan
Date: Saturday, January 12, 2019 8:39:37 AM

Hello,

I would like to know if the affordable housing incentives listed here are typical of this area. Housing is so expensive in the Bay Area--what is this development doing to address this problem?

Marie Bienkowski
1078 Clematis Dr, Sunnyvale, CA 94086

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

Planning Division
RECEIVED
JAN 30 2019
City of Sunnyvale

January 25, 2019

George Schroeder
City of Sunnyvale
456 West Olive Ave.
Sunnyvale, CA 94086

RE: SCH# 2019012022 Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion, Santa Clara County

Dear Mr. Schroeder:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Gayle.Totton@nahc.ca.gov.

Sincerely,

for

Gayle Totton
Associate Governmental Program Analyst

cc: State Clearinghouse

Dear Mr. Schroeder,
I write regarding the LSAP EIR. Building housing with unbundled parking near transit--like Lawrence Station--is the single best thing we can do for the environment. The goal of this project should be to make it easy for people to live without cars. This will reduce traffic and CO2 emissions. We should be aiming to put as much housing and as little parking as possible on this site. Any reduction in housing density in the LSAP would lead to adverse environmental impacts, by denying people the opportunity to live near transit and encouraging commuting by car.

Sincerely,
Richard Mehlinger

From: Aghegnehu, Ben [mailto:ben.aghegnehu@rda.sccgov.org]
Sent: Monday, February 11, 2019 4:50 PM
To: George Schroeder <GSchroeder@sunnyvale.ca.gov>
Cc: Talbo, Ellen <Ellen.Talbo@rda.sccgov.org>
Subject: RE: Reminder: LSAP NOP Comments Deadline on Feb 11th

February 11, 2019

George Schroeder
Senior Planner
Community Development Department

Subject: Draft Environmental Impact Report (EIR) for the LSAP Housing Study and Boundary Expansion project

Dear George Schroeder,

The County of Santa Clara Roads and Airports Department (The County) appreciates the opportunity to review the Draft Environmental Impact Report (EIR) for the LSAP Housing Study and Boundary Expansion project and is submitting the following comments:

- The attached letter we sent for the initial NOP-DEIR for the Lawrence Station Area Plan (LSAP) still applies to the proposed boundary expansion. In addition to the study locations listed in the letter, the new TIA should also include intersection on San Tomas Expressway from Scott to Monroe, including the Central/San Tomas On/Off ramps.
- The County recommends that the analysis for Existing + Project, Background, Project, and Cumulative Conditions should combine the initial LSAP and current proposed expansion and not isolate the increase only.
- Queuing Analysis should be done for all turn pockets with added project trips.
- The project should mitigate any impacts on County intersections as a result of the proposed project.
- Please contact The County for signal timing information, if needed.

If you have any questions or concerns about these comments, please contact me at 408-573-2462 or ben.aghegnehu@rda.sccgov.org

Thank you,

Ben Aghegnehu
Associate Transportation Planner
County of Santa Clara | Roads & Airports
101 Skyport Rd | San Jose, CA, 95110
408-573-2462 (o)

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Planning Division
RECEIVED
JAN 16 2019
City of Sunnyvale

Notice of Preparation

January 11, 2019

To: Reviewing Agencies

Re: Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion
SCH# 2019012022

Attached for your review and comment is the Notice of Preparation (NOP) for the Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

George Schroeder
City of Sunnyvale
456 West Olive Ave.,
Sunnyvale, CA 94086

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2019012022
Project Title Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion
Lead Agency Sunnyvale, City of

Type **NOP** Notice of Preparation

Description The Housing Study project description consists of increasing the maximum density allowance (in dwelling units per acre - du/ac) for MXD-I and MXD-II zoned areas (from 68 du/ac to 100du/ac) and expanding the area for where housing may be considered to the M-S/LSAP zoning district (maximum of 100 du/ac) and O-R (maximum of 54 du/ac). A total of 3,612 additional units will be studied, resulting in a total number of 5,935 allowable units in te LSAP. The maximum residential development capacity under the existing LSAP is 2,323 units. No changes are proposed to the MXD-III and R-5 zoning districts. The proposed expansion of the western LSAP boundary was requested by Intuitive Surgical, Inc. The sites requested for inclusion in the LSAP boundary expansion are 932,950 and 945-955 Kifer Rd, which are intended for future redevelopment.

Lead Agency Contact

Name George Schroeder
Agency City of Sunnyvale
Phone 408-730-7443 **Fax**
email
Address 456 West Olive Ave.,
City Sunnyvale **State** CA **Zip** 94086

Project Location

County Santa Clara
City Sunnyvale, Santa Clara
Region
Cross Streets Lawrence Expy. & Kifer Rd.,/Reed Ave.; Kifer Rd., & Uranium Dr./Commercial St.
Lat / Long 37° 22' 26" N / 121° 59' 46" W
Parcel No. multiple
Township 06S **Range** 01W **Section** 32-33 **Base** MDB&M

Proximity to:

Highways 82
Airports Mineta San Jose International
Railways Caltrain
Waterways Calabazas Creek
Schools Santa Clara Christian
Land Use Multiple land uses [residential (under construction), office/R&D, industrial, commercial, utility)]; General Plan: Transmit Mixed-Use

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Fiscal Impacts; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 3; Office of Emergency Services, California; Department of Housing and Community Development; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 4; Air Resources Board, Transportation Projects; Air Resources Board, Major Industrial Projects; State Water Resources Control Board, Division of Drinking Water; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 01/11/2019 ***Start of Review*** 01/11/2019 ***End of Review*** 02/11/2019

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019012022

Project Title: Lawrence Station Area Plan (LSAP) Housing Study and Boundary Expansion

Lead Agency: City of Sunnyvale
Contact Person: George Schroeder
Mailing Address: 456 West Olive Avenue
Phone: 408-730-7443
City: Sunnyvale Zip: 94086 County: Santa Clara

Project Location: County: Santa Clara City/Nearest Community: Sunnyvale/ Santa Clara
Cross Streets: Lawrence Expy & Kifer Rd/Reed Ave; Kifer Rd & Uranium Dr/Commercial St Zip Code: 94085
Longitude/Latitude (degrees, minutes and seconds): 37 ° 22 ′ 26 ″ N / 121 ° 59 ′ 46 ″ W Total Acres: 227
Assessor's Parcel No.: Multiple Section: 32-33 Twp.: 06S Range: 01W Base: MDB&M
Within 2 Miles: State Hwy #: 82 Waterways: Calabazas Creek
Airports: Mineta San Jose International Railways: Caltrain Schools: Santa Clara Christian

Document Type:

CEQA: [x] NOP [ ] Draft EIR
[ ] Early Cons [ ] Supplement/Subsequent EIR
[ ] Neg Dec (Prior SCH No.) _____
[ ] Mit Neg Dec Other: _____

NEPA: [ ] NOI Other: [ ] Joint Document
[ ] Draft EIS [ ] Final Document
[ ] FONSI [ ] Other: _____

Governor's Office of Planning & Research
JAN 11 2019
STATE CLEARINGHOUSE

Local Action Type:

[ ] General Plan Update [ ] Specific Plan [x] Rezone [ ] Annexation
[x] General Plan Amendment [x] Master Plan [ ] Prezone [ ] Redevelopment
[ ] General Plan Element [ ] Planned Unit Development [ ] Use Permit [ ] Coastal Permit
[ ] Community Plan [ ] Site Plan [ ] Land Division (Subdivision, etc.) [ ] Other: _____

Development Type:

[x] Residential: Units 3,612 Acres 195
[x] Office: Sq.ft. 1.14M Acres 32 Employees _____
[ ] Commercial: Sq.ft. _____ Acres _____ Employees _____
[ ] Industrial: Sq.ft. _____ Acres _____ Employees _____
[ ] Educational: _____
[ ] Recreational: _____
[ ] Water Facilities: Type _____ MGD _____
[ ] Transportation: Type _____
[ ] Mining: Mineral _____
[ ] Power: Type _____ MW _____
[ ] Waste Treatment: Type _____ MGD _____
[ ] Hazardous Waste: Type _____
[ ] Other: _____

Project Issues Discussed in Document:

[x] Aesthetic/Visual
[ ] Agricultural Land
[x] Air Quality
[x] Archeological/Historical
[x] Biological Resources
[ ] Coastal Zone
[x] Drainage/Absorption
[x] Economic/Jobs
[x] Fiscal
[x] Flood Plain/Flooding
[ ] Forest Land/Fire Hazard
[x] Geologic/Seismic
[ ] Minerals
[x] Noise
[x] Population/Housing Balance
[x] Public Services/Facilities
[x] Recreation/Parks
[x] Schools/Universities
[ ] Septic Systems
[x] Sewer Capacity
[x] Soil Erosion/Compaction/Grading
[x] Solid Waste
[x] Toxic/Hazardous
[x] Traffic/Circulation
[x] Vegetation
[x] Water Quality
[x] Water Supply/Groundwater
[x] Wetland/Riparian
[x] Growth Inducement
[x] Land Use
[x] Cumulative Effects
[x] Other: Greenhouse Gas

Present Land Use/Zoning/General Plan Designation:

Multiple land uses [residential (under construction), office/R&D, industrial, commercial, utility)]; General Plan: Transit Mixed-Use

Project Description: *(please use a separate page if necessary)*

The Housing Study project description consists of increasing the maximum density allowance (in dwelling units per acre – du/ac) for MXD-I and MXD-II zoned areas (from 68 du/ac to 100 du/ac) and expanding the area for where housing may be considered to the M-S/LSAP zoning district (maximum of 100 du/ac) and O-R (maximum of 54 du/ac). A total of 3,612 additional units will be studied, resulting in a total number of 5,935 allowable units in the LSAP. The maximum residential development capacity under the existing LSAP is 2,323 units. No changes are proposed to the MXD-III and R-5 zoning districts.
The proposed expansion of the western LSAP boundary was requested by Intuitive Surgical, Inc. The sites requested for inclusion in the LSAP boundary expansion are 932, 950, and 945-955 Kifer Road, which are intended for future redevelopment.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List

County: Santa Clara

SCH# 2019012022

esources Agency

- [ ] **Resources Agency** Nadell Gayou
- [ ] **Dept. of Boating & Waterways** Denise Peterson
- [ ] **California Coastal Commission** Allyson Hitt
- [ ] **Colorado River Board** Elsa Contreras
- [ ] **Dept. of Conservation** Crina Chan
- [ ] **Cal Fire** Dan Foster
- [ ] **Central Valley Flood Protection Board** James Herota
- [ ] **Office of Historic Preservation** Ron Parsons

Dept of Parks & Recreation Environmental Stewardship Section

- [ ] **S.F. Bay Conservation & Dev't. Comm.** Steve Goldbeck
- [ ] **Dept. of Water Resources** Resources Agency Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife** Scott Flint Environmental Services Division
- [ ] **Fish & Wildlife Region 1** Curt Babcock
- [ ] **Fish & Wildlife Region 1E** Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2** Jeff Drongesen
- [ ] **Fish & Wildlife Region 3** Craig Weightman
- [ ] **Fish & Wildlife Region 4** Julie Vance
- [ ] **Fish & Wildlife Region 5** Leslie Newton-Reed Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6** Tiffany Ellis Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M** Heidi Calvert Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M** William Paznokas Marine Region

Other Departments

- [ ] **California Department of Education** Lesley Taylor
- [ ] **OES (Office of Emergency Services)** Monique Wilber
- [ ] **Food & Agriculture** Sandra Schubert Dept. of Food and Agriculture
- [ ] **Dept. of General Services** Cathy Buck Environmental Services Section
- [ ] **Housing & Comm. Dev.** CEQA Coordinator Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission** Erik Vink
- [ ] **Delta Stewardship Council** Anthony Navasero
- [ ] **California Energy Commission** Eric Knight
- [ ] **Native American Heritage Comm.** Debbie Treadway
- [ ] **Public Utilities Commission** Supervisor
- [ ] **Santa Monica Bay Restoration** Guangyu Wang
- [ ] **State Lands Commission** Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)** Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics** Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR** Christian Bushong
- [ ] **California Highway Patrol** Suzann Ikeuchi Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1** Rex Jackman
- [ ] **Caltrans, District 2** Marcelino Gonzalez
- [ ] **Caltrans, District 3** Susan Zanchi
- [ ] **Caltrans, District 4** Patricia Maurice
- [ ] **Caltrans, District 5** Larry Newland
- [ ] **Caltrans, District 6** Michael Navarro
- [ ] **Caltrans, District 7** Dianna Watson
- [ ] **Caltrans, District 8** Mark Roberts
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- [ ] **Caltrans, District 10** Tom Dumas
- [ ] **Caltrans, District 11** Jacob Armstrong
- [ ] **Caltrans, District 12** Maureen El Harake

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- [ ] **Transportation Projects** Nesamani Kalandiyur
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- [ ] **State Water Resources Control Board** Regional Programs Unit Division of Financial Assistance
- [ ] **State Water Resources Control Board** Cindy Forbes – Asst Deputy Division of Drinking Water
- [ ] **State Water Resources Control Board Div. Drinking Water #_____**
- [ ] **State Water Resources Control Board** Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- [ ] **State Water Resouces Control Board** Phil Crader Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #_____** CEQA Tracking Center
- [ ] **Department of Pesticide Regulation** CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1** Cathleen Hudson North Coast Region (1)
- [ ] **RWQCB 2** Environmental Document Coordinator San Francisco Bay Region (2)
- [ ] **RWQCB 3** Central Coast Region (3)
- [ ] **RWQCB 4** Teresa Rodgers Los Angeles Region (4)
- [ ] **RWQCB 5S** Central Valley Region (5)
  - [ ] **RWQCB 5F** Central Valley Region (5) Fresno Branch Office
  - [ ] **RWQCB 5R** Central Valley Region (5) Redding Branch Office
- [ ] **RWQCB 6** Lahontan Region (6)
  - [ ] **RWQCB 6V** Lahontan Region (6) Victorville Branch Office
- [ ] **RWQCB 7** Colorado River Basin Region (7)
- [ ] **RWQCB 8** Santa Ana Region (8)
- [ ] **RWQCB 9** San Diego Region (9)

- [ ] **Other** _____

_____

_____

- [ ] _____ Conservancy

Last Updated 5/22/18

From: Molseed, Roy [mailto:Roy.Molseed@VTA.ORG]
Sent: Monday, February 11, 2019 4:01 PM
To: George Schroeder <GSchroeder@sunnyvale.ca.gov>
Subject: LSAP Housing Study and Boundary Expansion

George,

VTA has no comments on the above NOP at this time.

Thanks for the opportunity to review. Please contact me if any questions.

Roy Molseed
Senior Environmental Planner

Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134
Phone **408-321-5784**



Appendix B1

Public Draft of
Proposed Amendments to the
Lawrence Station Area Plan, 2021







Public Draft of Amended
LAWRENCE STATION AREA PLAN

Sunnyvale, California

Draft Amendments 2021

Public Draft of Amended
LAWRENCE STATION AREA PLAN

Sunnyvale, California

City of Sunnyvale Department of Community Development

Originally Adopted December 2016
Draft Amendments 2021

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The original preparation of this Plan was funded in large part by a station area planning grant from the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) as part of state and regional efforts to encourage planning for a sustainable future in the Bay Area region. The Plan is guided by the MTC's Resolution 3434 Transit-Oriented Development Policy (July 2005), which includes goals for transit ridership and related supporting land uses within a half-mile radius of rail transit stations throughout the Bay Area.





BACKGROUND

This Lawrence Station Area Plan (LSAP or "the Plan") was adopted in 2016 to guide future development of the area surrounding the Lawrence Caltrain Station in Sunnyvale, California. The focus of this Plan is limited to approximately 229 acres (without roads) of already urbanized lands within the City of Sunnyvale, adjacent to the Station. It was part of a larger original Study Area, which was generally defined by a one-half-mile radius circle centered on Lawrence Station. Research indicates that this distance represents approximately a 10-minute walk for an average pedestrian, a threshold that pedestrians are generally willing to walk on a regular basis to access a transit station.

The larger original Study Area included portions of the City of Santa Clara, in order to ensure coordination of circulation systems and land uses between the two cities. However, the plans, policies, and guidelines of this Plan are limited to the jurisdictional area of the City of Sunnyvale, and the boundaries of the adopted Plan are different than the original Study Area. The City of Santa Clara also adopted their Lawrence Station Area Plan in 2016, which applies to their jurisdiction bounded by Kifer Road to the south, Lawrence Expressway to the west, Central Expressway to the north, and Calabazas Creek to the east. The original Sunnyvale LSAP Study Area also included existing residential properties south of the tracks in the City of Sunnyvale, but these properties are not in the adopted LSAP boundary, and therefore no changes are proposed.

Purpose of the Plan

Lawrence Station has historically been surrounded by uses that do not support transit ridership, as well as a circulation framework that makes access through the area for pedestrians, bicyclists and motor vehicles a challenge. In 2019, the station ranked 18th out of 29 stations in the Caltrain system for average mid-weekday boardings.

The purpose of this Plan is to promote greater use of this existing transit asset and guide the development of a diverse neighborhood of employment, residential, retail, other support services and open space. With a Plan horizon of 2040, the Plan includes goals, policies and guidelines to guide public and private investment in the area.

Original LSAP Planning Process and Community Outreach

On December 6, 2016, the City of Sunnyvale adopted the original LSAP and certified the Environmental Impact Report (EIR). The preparation of the original LSAP took place in two distinct phases, beginning in December 2010. The first phase included extensive research on existing conditions and the preparation of three conceptual alternative strategies for the future development of the area. The results of this first phase effort were summarized in the LSAP phase one report dated August 2011 and accepted by the Sunnyvale City Council on November 1, 2011.

During the second phase of the planning process, a 19-member Citizens Advisory Group (CAG) was appointed by the City Council to refine the goals and vision for the Plan area and recommend a preferred alternative. In February 2013, the Sunnyvale Planning Commission and City Council voted to accept the CAG's recommendation of a preferred plan for the area. The preferred plan accepted by the City Council provides the basis for the LSAP described in this document.

Throughout the two-phase process, extensive input was received in community-wide workshops, business and property owner meetings, specific focus groups, the Sunnyvale Planning Commission, the Sunnyvale City Council, and, during Phase II, the CAG.

Important input was also provided in regular meetings of a Technical Advisory Group (TAG) comprised of representatives from the City of Sunnyvale, City of Santa Clara, County of Santa Clara, SamTrans, Valley Transportation Authority (VTA), Bay Area Air Quality Management District, Caltrain, and representatives from the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

LSAP Update 2021

On XXXXX XX, 2021, the City of Sunnyvale adopted amendments to the Plan, including: 1) revisions to housing densities and expanding areas where housing may be considered that would result in an estimated likely development of 3,612 additional housing units (for a total buildout of 5,935 units); 2) an expansion of the west boundary to include three additional non-residential properties; and, 3) the Lawrence Station Area Sense of Place Plan. The City of Sunnyvale also certified a Subsequent EIR for the amendments. At the time of the LSAP adoption in 2016, the Council directed staff to return with a plan to study additional housing opportunities within the plan area, and to develop a sense of place plan for the area. The City Council subsequently selected a preferred land use alternative on June 26, 2018. On August 14, 2018, the City Council authorized a study to include three Kifer Road properties in the LSAP boundaries, and directed staff to include the boundary expansion in the housing study.

PLAN VISION

The Plan is based on a set of seven guiding principles that establish the overall Vision for the Lawrence Station area and serve as the basis for all elements of the Plan and its implementing policies.

1 | LAND USE DIVERSITY: Promote a diversity of land uses and densities that will support transit usage and neighborhood services.

Mixed-Use

Nine different zoning districts are used in the Plan area. Five of these are Mixed-Use districts that allow a mix of office/research and development (R&D), industrial, residential and retail uses. Four of these districts are new land use categories. Amendments to land use designations in the Zoning Code and rezoning of sites are coordinated as part of plan adoption.

Protect Existing Neighborhoods and Businesses

Existing legal uses in the Plan area will be allowed to remain as legal, conforming uses with the ability to grow and expand. The Plan discourages these uses from using hazardous materials in their operation, especially when located adjacent to residential uses.

Base Maximum Development Densities

A key goal of the Plan is to ensure that future new development is of a type and at a sufficient density to create a diverse area that can support a mix of employment and residential uses, support transit use, and can provide necessary amenities and support services, such as open space and neighborhood retail. Therefore, base maximum development densities are established. New residential development will not be allowed at densities less than 85 percent of these base maximum densities.

Higher Densities Achieved through the LSAP Incentive Program and State Density Bonus

The LSAP is an incentive-based plan. Development incentives (in the form of density bonuses) will allow property owners to develop their properties beyond the base maximum densities in residential development and base maximum floor area ratios in office/R&D/industrial development in exchange for providing community benefits such as mixed-use development, connectivity enhancements, access easements, public open space, additional affordable housing, financial contributions, and other features that advance the goals of the Plan. In residential development, community benefits are worth a defined amount of dwelling units per acre points. Development Agreements, subject to adoption by the City Council, are required for office/R&D/industrial projects requesting access to higher floor area ratios (FAR) through the incentives program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program. Developers are not required to build with incentives. Rather they will have the option to choose which incentives best suit their business plans and economic goals.

For projects with residential uses that propose to include affordable units pursuant to State Density Bonus Law, the bonus percentage that must be provided under state law is added to the maximum density obtained with incentive points for the particular project, or to the base maximum density if the project applicant does not propose to utilize incentive points through the LSAP Incentive Program.

Estimated Likely Development

Development of the Plan Area was estimated for purposes of environmental impact analysis and determining infrastructure needs. The "estimated likely development" is based on a set of assumptions about the likelihood of certain buildout scenarios, instead of being based on the absolute maximum allowable buildout. At the time of the original LSAP study, it was assumed that 50% of the maximum allowable development (with incentives) would occur, and that 50% of the already-existing industrial/office/R&D space would remain. These assumptions resulted in a total build-out of the original study area of approximately 3,500 residential units, 3.6 million square feet of office/R&D development, 220,000 square feet of retail space, and 26,500 square feet of industrial space. Buildout projections included all pre-existing residential development in the original study area that would remain and be protected. The City Council ultimately adopted the LSAP in 2016 with an

Land Use Plan

- STUDY AREA BOUNDARY
- SUNNYVALE / SANTA CLARA BORDER
- EL CAMINO STORM DRAIN CHANNEL / CALABAZAS CREEK
- LAWRENCE CALTRAIN STATION

SUNNYVALE EXISTING LAND USE

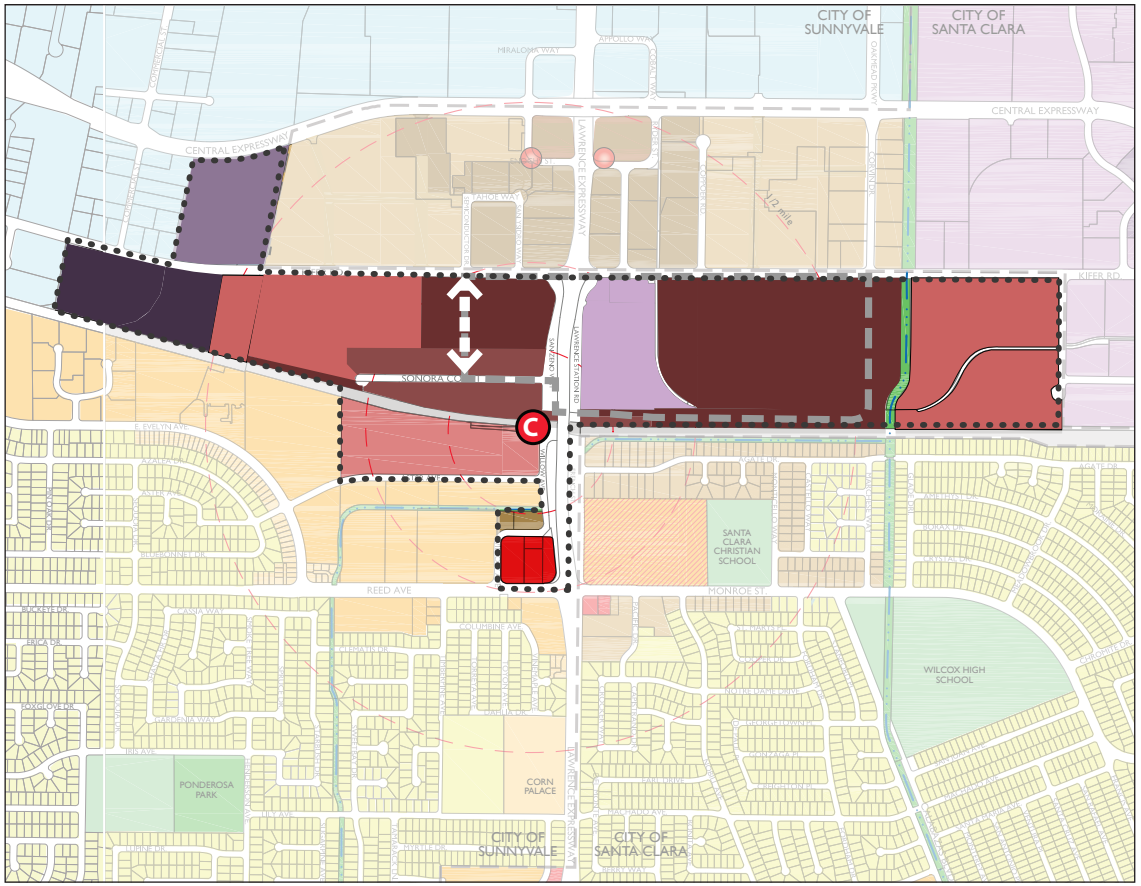
- LOW DENSITY RESIDENTIAL
- LOW-MEDIUM DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- INDUSTRIAL & SERVICE
- EXISTING PUBLIC PARKS
- EXISTING SCHOOLS AND OTHER CIVIC USES

SUNNYVALE LSAP LAND USE

- FLEXIBLE MIXED-USE I
- FLEXIBLE MIXED-USE I / SONORA COURT
- FLEXIBLE MIXED-USE II
- FLEXIBLE MIXED-USE III
- FLEXIBLE MIXED-USE IV
- HIGH-DENSITY RESIDENTIAL
- LSAP INDUSTRIAL AND SERVICE
- LSAP INDUSTRIAL AND SERVICE 60%
- LSAP INDUSTRIAL AND SERVICE 120%
- PRIMARY LOOP ROAD
- SANTA VITTORIA TERRACE

SANTA CLARA EXISTING & GENERAL PLAN LAND USE

- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- REGIONAL MIXED USE
- LOW INTENSITY OFFICE/R&D
- LOW DENSITY RESIDENTIAL



Station Area Development Standards

		Office/R&D/Industrial		Retail	Residential		Height (feet)
Land Use color	Land Use/Zoning	Base Maximum FAR	Maximum FAR with incentives[3]	Minimum FAR	Base maximum density (du/ac)[1, 2]	Total du/ac incentive points available	Maximum residential and non-residential height
	Flexible Mixed-Use I (MXD-I)	*35%*	*150%*	*N/A*	*45*	*35*	*100*
	Flexible Mixed-Use I/Sonora Court (MXD-I/S)	*35%*	*150%*	*N/A*	*54*	*26*	*100*
	Flexible Mixed-Use II (MXD-II)	*35%*	*150%*	*N/A*	*36*	*32*	*100*
	Flexible Mixed-Use III (MXD-III)	*35%*	*100%*	*N/A*	*28*	*17*	*55*
	Flexible Mixed-Use IV (MXD-IV)	*35%*	*50%*	*25%*	*28*	*17*	*55*
	High-density Residential (R5)	*N/A*	*N/A*	*N/A*	*Based on lot area per SMC Table 19.30.040*	*N/A*	*55*
	LSAP Industrial and Service (M-S/LSAP)	*35%*	*150%*	*25%*	*N/A*	*N/A*	*85*
	LSAP Industrial and Service 60% (M-S/LSAP 60% FAR)	*35%*	*60%*	*N/A*	*N/A*	*N/A*	*85*
	LSAP Industrial and Service 120% (M-S/LSAP 120% FAR)	*35%*	*120%*	*N/A*	*N/A*	*N/A*	*85*

1 New residential development in the LSAP is required to build to at least 85 percent of the zoning district's base maximum zoning density.
2 Additional densities may be achieved above the base maximum density or density obtained through the LSAP Incentives Program by providing affordable housing consistent with State Density Bonus Law.
3 A Development Agreement is required for additional FAR above the base maximum through the LSAP Incentives Program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program.

allowance for 2,323 net new housing units and 1.2 million square feet of net new office/R&D development.

Under the 2021 LSAP Amendment, for purposes of environmental impact analysis, the estimated likely development was increased from 2,323 to 5,935 net new residential units (including units entitled or built from the original 2,323), an increase of 3,612 units. The 1.2 million square feet of net new office/R&D/industrial development did not change.

Development Capacity and Growth Monitoring Program

In order to ensure that long-term development does not exceed the carrying capacity of infrastructure systems and the environment, a growth monitoring program with a development capacity was established with adoption of the original LSAP. The original LSAP anticipated and studied a development capacity of 2,323 net new residential units and 1.2 million square feet of net new office/ R&D, consistent with the findings of the Environmental Impact Report (EIR) that was conducted as part of the planning process. The housing capacity is raised from 2,323 to 5,935 units as part of the 2021 LSAP Amendment. If this development capacity is reached, subsequent development proposals would need to conduct additional environmental analysis per the California Environmental Quality Act (CEQA).

2 | DENSE STATION AREA DEVELOPMENT: Locate highest intensity development closest to the Lawrence Station.

Because of the abundant transportation options that are available, close proximity and access to Lawrence Station is a key determinant of the pattern of allowable densities in the Plan area. The highest development intensities are allowed north of the Caltrain tracks. The area north of the tracks is generally within walking distance to the station and would benefit from the direct access to the station with the new loop road and path/pathway improvements identified in this Plan. There are also no existing lower density residential neighborhoods directly adjacent to the properties north of the tracks. The Caltrain tracks buffer the Plan area from the existing lower density residential neighborhood in the City of Santa Clara (east of Lawrence Expressway) and existing multi-family neighborhood in Sunnyvale (west of Lawrence Expressway).

The area south of the tracks is also within walking distance to the station, but at a lower density due to compatibility with existing low and medium density residential uses near the LSAP boundary.

Retail uses, both north and south of the tracks, are also allowed and encouraged as part of mixed-use projects in order to create a critical mass of successful local-serving retail activity; auto-oriented retail is not considered a preferred use, notwithstanding the existing big-box retail use at 150 Lawrence Station Road. Depending on location, uses may be configured as vertical mixed-use, such as with retail under several floors or residential or office, or as single use buildings.

3 | CONNECTIVITY: Improve connectivity for all modes of travel.

A New Framework of the Loop Road and Shared-Use Paths

In order to provide improved access throughout the Plan area in general, and to Lawrence Station in particular, a framework of a publicly-accessible central loop road and pedestrian/bicycle shared-use paths will be established. In the residential areas south of the Caltrain tracks, the existing framework of streets and blocks will be retained. Minor improvements to provide safer street crossings and minor access improvements for pedestrians, bicycles and transit users will be provided. Refer to the Lawrence Station Area Sense of Place Plan under separate cover for more detail.

In the area north of the Caltrain tracks, a new loop road with direct access to Lawrence Station will emerge over time as individual properties are redeveloped by individual property owners. Developer incentives to provide public access through easements and improvements for these new corridors will be available for the northern properties when they redevelop.

New primary pedestrian/bicycle paths and trails, known as "shared-use paths" or "Class I shared-use paths" are also proposed within the Plan area. In the area north of the Caltrain tracks, primary Class I shared-use paths are included at the east and west ends of the Plan boundaries. As individual properties redevelop over time, the shared-use paths will eventually connect to the station.

Improved North-South Connectivity through the Area

East-west connections throughout the Plan area are relatively good. However, north-south linkages are poor. This is particularly true north of the Caltrain tracks, due to the barrier presented by the tracks and the historical large-lot industrial development of the area. Therefore, a primary goal of the planned new loop road is to provide improved north-south access throughout the Plan area.

The Plan includes three key features to achieve this goal: 1) The new loop road on the north side of the tracks, 2) Improvements to Willow Avenue on the south side of the tracks, 3) two potential new pedestrian/bicycle crossings as envisioned in the original LSAP, either over or under the tracks.

Secondary Pathway Network

In order to create a finer grained street-and-block framework the Plan includes a secondary network of new pedestrian and/or bicycle pathways, depending on site conditions, that will provide enhanced local access and shortened travel paths to the station and commercial areas both within the Lawrence Station Area neighborhood and to and from nearby areas.

Parking Management

Currently, there is an overabundance of on- and off-street parking in the Plan area, which is a costly, inefficient use of resources and contributes to higher auto usage and lower transit ridership. The Plan therefore outlines strategies to manage the future parking supply so that it promotes and supports transit and more closely relates to the needs of employers and residents of the area.

Make Lawrence Expressway a Better Neighbor

Lawrence Expressway is a key element of the circulation infrastructure of the City. It presents, however, a great challenge to the integration of the neighborhoods in the Plan area, and, despite its transportation function, actually presents an obstacle to the ultimate success of the LSAP. In September 2014, the County of Santa Clara released a study (partially funded by the cities of Sunnyvale and Santa Clara) titled the "Lawrence Expressway Grade Separation Study", with the goals of a) reducing traffic congestion on local intersections, b) reducing the barrier to east-west movement created by the existing design of the Expressway, c) better balancing vehicle access to Lawrence Station, while minimizing conflicts with pedestrians, d) providing direct vertical access to Lawrence Station, and e) improving through-capacity of the Expressway itself.

4 | NEIGHBORHOOD CHARACTER: Ensure the area has a character that is unique to its location while being compatible with the overall character of Sunnyvale and sensitive to existing environmental assets.

The Plan area contains a variety of neighborhoods, districts and places with differences in scale and character and varying opportunities for development. In the area south of the Caltrain tracks, the overall scale of development will change very little, with the exception of two areas. Policies to protect and enhance the character and quality of existing residential neighborhoods will require new development to propose lower heights and building massing along existing neighborhood edges. The two areas anticipated for change are: 1) the 17-acre site between Aster Avenue and the railroad tracks (former Calstone/ Peninsula Building Materials site) anticipated a 3-7 story mixed-use residential and retail development; and, 2) the commercial center bounded by Willow Avenue, Reed Avenue, and Lawrence Expressway.

North of the Caltrain tracks, the LSAP envisions a future that is a departure from the existing pattern of low scale, large footprint buildings and parking lots. Reflecting the overall trend toward higher density developments for office and R&D in Silicon Valley and increasing land values, this area will be allowed and encouraged to naturally transition to a more dense urban scale. Over time, the area north of the Caltrain tracks will thus become a defined and unique regional and local urban hub, job center, and new neighborhood for urban living, served by a diverse multi-modal circulation system.

The increased development of the northern area will have little impact on the existing residential neighborhoods to the south of the railroad tracks adjacent to the Plan area, due to the separation created by the tracks. In addition, Design Guidelines that are a part of the LSAP will allow property owners to make design decisions while assuring that new development meets certain standards to ensure compatibility with the city and the environment.

5 | COMMUNITY IDENTITY: Create a strong sense of place and neighborhood identity with the development of a vibrant neighborhood center.

New Neighborhood Center

An identifiable sense of place and identity within the City and the area will be established with the development of a new neighborhood center focused around Lawrence Station and streets that serve it. A diverse, high-density mix of land uses in a central location allows for increased community interactions between residents, employees, and visitors.

6 | FLEXIBILITY: Allow the area to redevelop over time through a flexible system that is responsive to the goals, schedule and needs of individual business and property owners, developers, and residents.

The LSAP is designed to accommodate development according to the timing and needs of property owners and the marketplace. All land use changes in the Plan area will be undertaken at the initiative and schedule of private landowners. The City of Sunnyvale has no intent to purchase land for redevelopment or force private landowners and businesses to change land uses in order to meet the objectives of the Plan. Existing legal uses will continue to be allowed and will not be adversely impacted by the implementation of the Plan. The Plan focuses primarily on guiding the future of new development.

Implementation of the LSAP will, however, require the coordinated efforts of both the public and private sector working cooperatively to achieve a common goal. This will be achieved through the coordinated application of four general types of public and private actions:

1. Public policy and regulatory actions;
2. Impact fees and assessments;
3. Grant funding; and
4. Public administrative actions

Chapter 7: Plan Implementation lists the key improvements that will be needed to achieve the goals of the Plan and the range of implementation methods and potential responsibilities that can be used to complete these improvements.

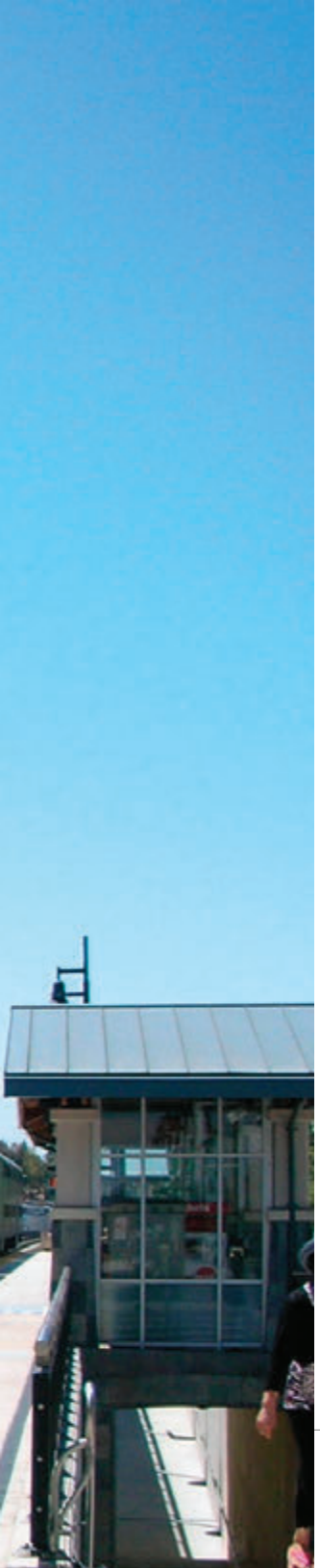
7 | SUSTAINABILITY: Redevelop the area in a manner that is environmentally, economically, and socially sustainable.

The LSAP embraces a commitment to sustainability where land use and transportation diversity is the key to the long-term sustainable development of the Plan area. The Plan area provides a mix of land uses to allow people to live, work, shop, and relax in the area without needing an automobile for access. Diversity of transportation options will provide feasible long-term alternatives in response to climate change and other unforeseen challenges.

1 INTRODUCTION

The purpose of the Lawrence Station Area Plan is to establish a framework for the future development of the area, in order to improve the relationship between transit availability and land use for the long-term development of an economically, environmentally and socially vibrant mixed-use district in Sunnyvale.





1 INTRODUCTION

This Lawrence Station Area Plan (the Plan) was adopted in order to guide future development of a 229-acre area (without roads) surrounding the Lawrence Caltrain Station in Sunnyvale, California. The original plan was funded in large part by a station area planning grant from the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) as part of state and regional efforts to encourage planning for a sustainable future in the Bay Area region. The Plan is guided by the MTC's Resolution 3434 Transit-Oriented Development Policy (July 2005), which includes goals for transit ridership and related supporting land uses within a half-mile radius of rail transit stations throughout the Bay Area.

> ***"The Policy aims to capitalize on investments in new transit corridors in the region by promoting the development of vibrant, mixed-use neighborhoods around new stations. It aims to stimulate the construction of at least 42,000 new housing units along the region's major new transit corridors, helping to ease the Bay Area's chronic housing shortage and preserve regional open space, while at the same time improving the cost-effectiveness of regional investments in new transit expansions."***
>
> ***– MTC's Resolution 3434 Policy (July 2005)***

PURPOSE OF THE PLAN

There is a growing awareness of the important role that land use plays in the success of public transportation systems. Anecdotal and empirical data indicates that without a sufficient population living and working in close proximity and easy access of a transit station, the use of the station is limited, resulting in low ridership on the overall system. Without adequate ridership, the transit system cannot achieve adequate farebox revenue, placing an unsustainably heavy burden on public subsidies to support ongoing investments in capital improvements, operations and maintenance.

Lawrence Station is a good example of this problem. Historically surrounded by uses that do not support transit ridership, as well as a circulation framework that makes access for pedestrians, bicyclists and motor vehicles a challenge, the station ranked 18th out of 31 stations in the Caltrain system for average mid-weekday boardings, comprising only 1.6 percent of the system-wide total, according to the Caltrain 2019 Ridership Report.

Conversely, economic studies in the Bay Area in recent years indicate that proximity to an active and viable public transit facility is good for land values, the local economy and the environment. A diversity of employment and housing uses at a range of densities not only supports transit, it also supports the provision of desired retail, open space and other support uses and can encourage a lively, 24-hour community that is less dependent on the use of the automobile for daily needs.

This, then, is the Purpose of the LSAP: To establish a framework for the future development of the area, facilitated by a partnership between local residents, businesses, property owners and the City, in order to improve the relationship between transit availability and land use for the long-term development of an economically, environmentally and socially vibrant mixed-use district in Sunnyvale.

LOCATIONAL CONTEXT

The LSAP is situated at the eastern edge of the City of Sunnyvale, in the heart of Silicon Valley and the County of Santa Clara, approximately 42 miles south of San Francisco. It lies in relatively close proximity to major transportation hubs and corridors, including US Highway 101, Interstate 280, and State Route 82 (El Camino Real), San Jose International Airport (7 miles away), freight and commuter rail corridors, Santa Clara Valley Transportation Authority (VTA) bus routes and other transportation corridors. Important nearby regional centers include Downtown Sunnyvale (approximately 2 miles), Downtown Santa Clara (4 miles), and Downtown San Jose (9 miles).

Lawrence Station is about 2.0 miles east of the downtown Sunnyvale Caltrain Station and about 3.6 miles west of the Santa Clara Caltrain and Altamont Commuter Express Station (serving downtown Santa Clara and Santa Clara University). Lawrence Station sits below an overpass of Lawrence Expressway. Lawrence Expressway bisects the Plan area north-south, while the Caltrain right-of-way bisects the area east-west.

The original study area was generally defined by a one-half-mile radius circle centered on Lawrence Station. Research indicates that this distance represents approximately a 10-minute walk for an average pedestrian, a threshold that pedestrians are generally willing to walk on a regular basis to access a transit station. This distance is widely recognized as a typical unit of measurement for station area planning. The one-half-mile radius contains lands in both Sunnyvale and Santa Clara with city boundaries that interlock with one another. The original study area included portions of the City of Santa Clara in order to ensure coordination of circulation systems and land uses between the two cities. The original study area also deviated from a symmetrical circle in order to correspond to the city boundaries north of the station and to encompass a remnant agricultural parcel (former Corn Palace) in the south.

Figure 1.1: Regional Location

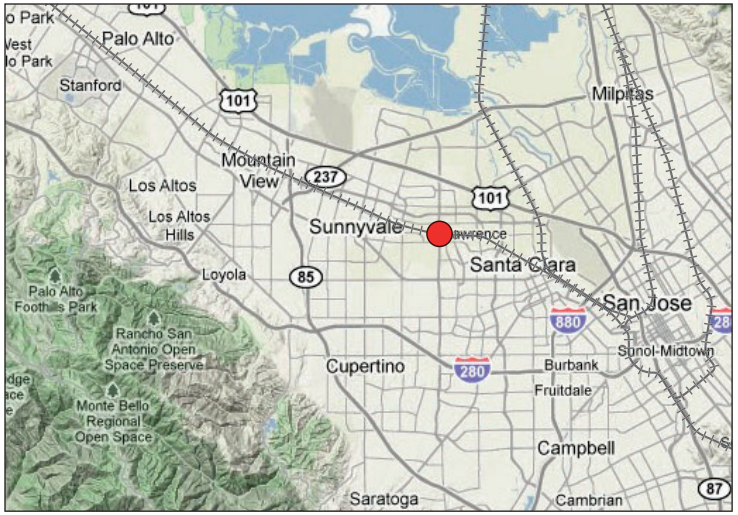


Figure 1.2: Local Context

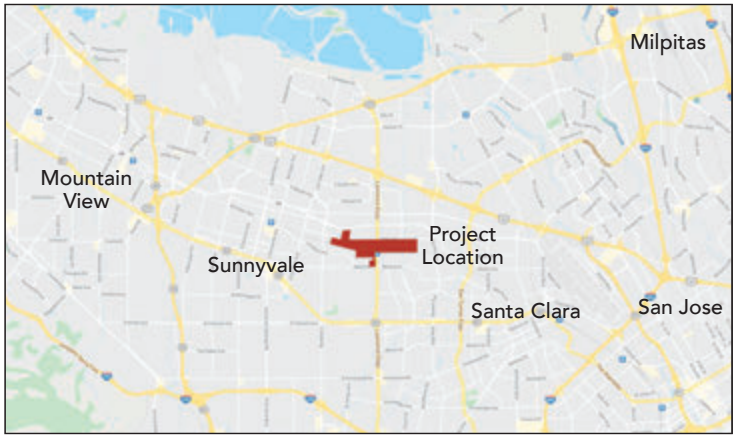
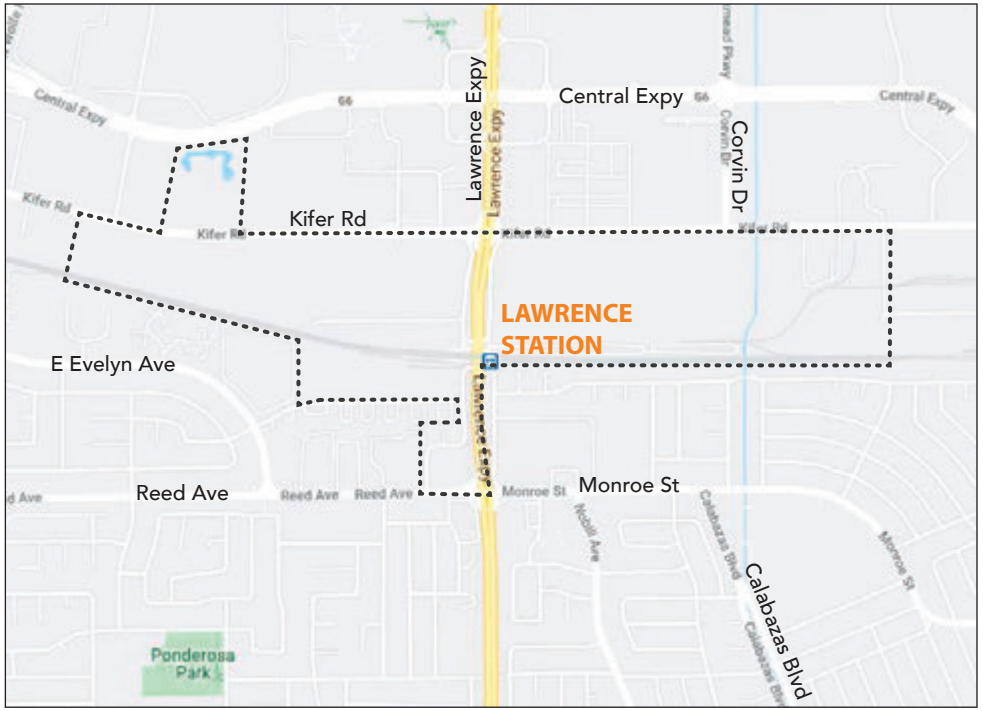


Figure 1.3: Plan Area Boundary



At the time of the LSAP adoption in 2016, the boundaries were limited to parcels that were envisioned for potential redevelopment and did not include existing low density residential areas in the southwest portion of the original study area, including the former 20-acre farm commonly called the Corn Palace at the southern edge. The western boundary was expanded in 2021 to include three properties at 932, 950, and 945-955 Kifer Road. The boundary was expanded to support growth of an existing business campus and to comprehensively plan for the Kifer Road corridor.

The current plan area north of the railroad tracks is bounded by 932 and 945-955 Kifer Road (near Commercial Street) to the west; Uranium Drive and the City of Santa Clara Border to the east; and Kifer Road, 945-955 Kifer Road, and the City of Santa Clara border to the north. The plan area south of the railroad tracks is located west of Lawrence Expressway, north of Reed Avenue, and includes the site at 1155-1175 Aster Avenue (formerly Calstone/ Peninsula Building Materials), a townhouse development on Buttercup Terrace, a commercial property at 1159 Willow Avenue, and four commercial properties at the northeast corner of Willow Avenue and Reed Avenue.

PLAN AREA DEVELOPMENT HISTORY

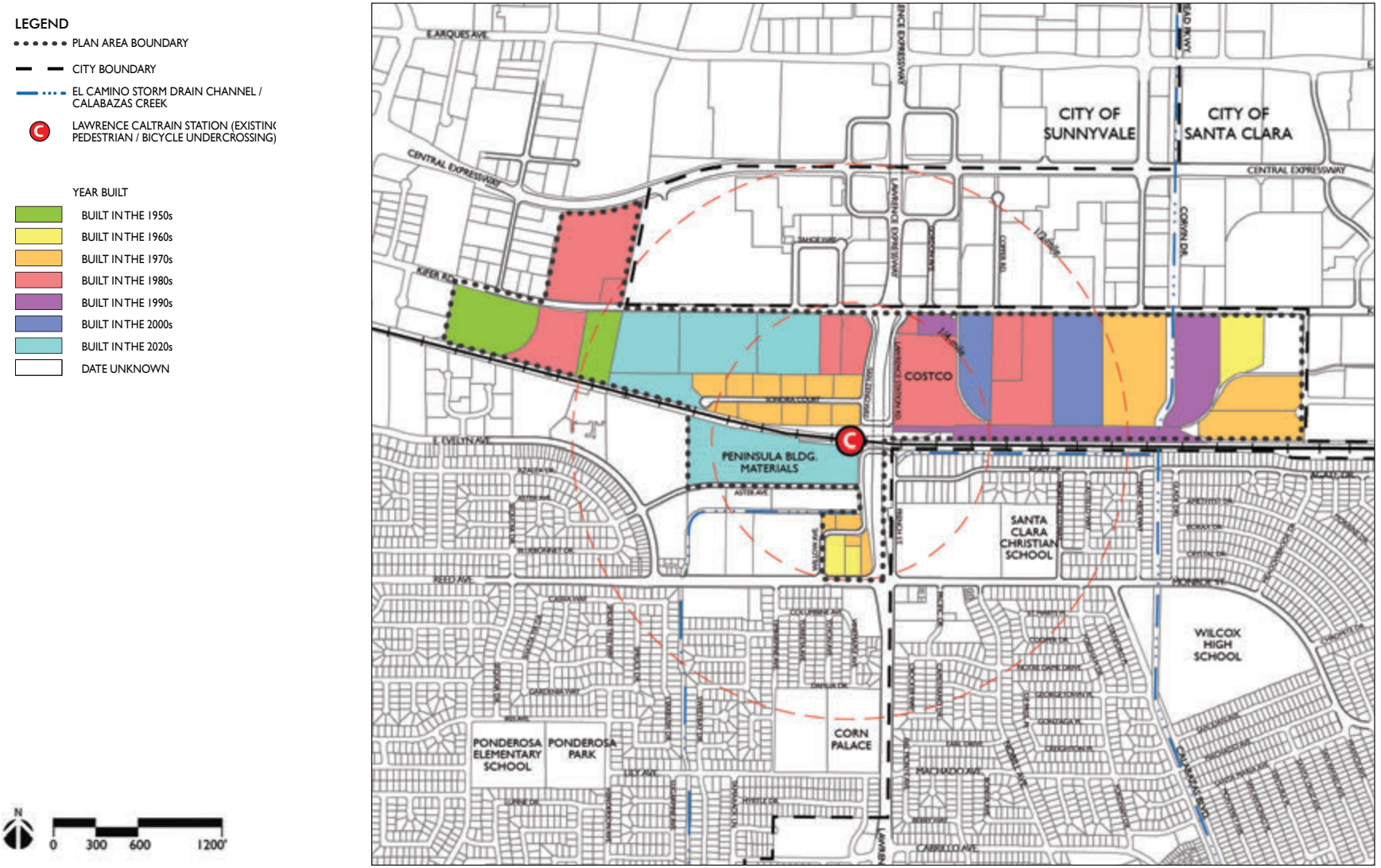
The Caltrain railroad line that currently runs from San Francisco to San Jose was built by the San Francisco and San Jose Railroad in 1863. Known as the Peninsula Commute, it was a private, for-profit commuter railroad operated by the San Francisco and San Jose Railroad, which ran between the two cities. In 1870, the rails were purchased by Southern Pacific Railroad, which continued to operate the commuter train service. Due to operating losses, the Southern Pacific Railroad petitioned to discontinue the commuter rail service in 1977. In 1980, subsidies were provided by the California Department of Transportation (CalTrans) to continue the rail service, and it was renamed Caltrain. In 1987, the Peninsula Corridor Joint Powers Board (PCJPB) formed an authority comprising the three counties of Santa Clara, San Mateo and San Francisco and their transit agencies. In 1991, the PCJPB purchased the tracks from Southern Pacific and in 1992, the PCJPB signed a contract with Amtrak as the contract operator for the Caltrain rail service.

Exactly when Lawrence Station was built as a station is unclear; however, maps dating from 1908 show Lawrence as a station on the Southern Pacific line. Lawrence Station was most recently renovated by Caltrain in 2004.

Sunnyvale was founded at the end of the 1800s as one of several new communities that developed along the Southern Pacific line. Along with other communities in the area, Sunnyvale was once dominated by orchards and farms. As technology businesses flourished in the last half of the 20th century, the orchards gave way to industrial and business parks and residential subdivisions. Until recently, these uses have been configured almost exclusively in large, single-use districts or neighborhoods.

As shown in Figure 1.4, the majority of development in and around the Lawrence Caltrain station occurred forty or more years ago. Most of the residential neighborhoods that lie to the south of the rail line date from the 1970s or earlier. New residential development in the Plan area since the 1970s includes townhouses fronting Aster Avenue and Willow Avenue; 741 townhome, condominium, and apartment units at 1155-1175 Aster Avenue (formerly Calstone/Peninsula Building Materials), and 520 apartment units on Kifer Road at Santa Vittoria Terrace.

Figure 1.4: Development History



EXISTING CONDITIONS

Today, the area north of the railroad tracks is dominated by industrial and commercial uses on large parcels. Many of these date from the early years of Silicon Valley growth and consist of one-story structures. Recent development has occurred throughout the plan area, including new apartments, townhomes, and office and R&D uses. Parking is typically in large surface lots. Roadways are wide and pedestrian and bicycle facilities are generally lacking.

South of the rail line, the Plan area consists primarily of medium-density residential developments and commercial properties at Willow Avenue and Reed Avenue.

The Plan area contains few distinguishing natural physical characteristics and is generally flat, with elevation relief provided only by the overpass of Lawrence Expressway at the Caltrain tracks. Calabazas Creek, which flows south-to-north to the San Francisco Bay, runs in a concrete channel near the eastern edge of the Plan area. It has little to no vegetation within its approximately 65-foot right-of-way. The El Camino Storm Drain Channel borders the LSAP and runs through the residential neighborhoods south of the station and along the south edge of the rail tracks in the City of Santa Clara before draining into Calabazas Creek. This channel, though mostly concrete, has stretches of grass and earthen banks along its 40 to 45 foot right-of-way.

The entire Plan area has no publicly dedicated parks or open space and very little natural vegetation. There are two private parks with public access, one at Kifer Road and Santa Vittoria Terrace and the other in the 1100 block of Aster Avenue. Additionally, the streets and gardens of some of the industrial areas contain an abundance of mature planted street trees and ornamental plantings, including a dramatic stand of Redwood and Cedar trees along Sonora Court one block north of the station.

RELATION TO OTHER REGULATORY AND POLICY DOCUMENTS

The vision and policy recommendations contained in this plan have been coordinated with preparation of other Sunnyvale planning efforts including the Land Use and Transportation Element (LUTE) of the Sunnyvale General Plan (adopted in 2017), and revisions to other regulatory documents.

SUSTAINABILITY IN THE LAWRENCE STATION AREA PLAN

Sustainable Development is generally defined as that which meets the needs of the present without compromising the ability of future generations to meet their own needs. It has three major components: environmental (making the best use of our resources), social (improving the quality of life for residents), and economic (spurring economic growth).

The City currently has several policies and plans in place to address sustainability. A key document the City uses to address sustainability issues is the Climate Action Playbook (CAP) which was adopted in 2019. The CAP contains hundreds of current and future policies related to City facilities and infrastructure, development policies, and operational goals.

The City of Sunnyvale Consolidated General Plan also contains numerous goals and policies that address sustainability. These include goals and policies related to land use and transportation, community vision, housing, environmental management, air quality and solid waste.

In addition, the City adopted its first comprehensive Green Building Program for new development and alterations to existing buildings in 2009. The Green Building Program has been updated several times since its adoption, and continues Sunnyvale's commitment to being a leader in sustainable development. In 2020, the City adopted a phased Reach Codes program to reduce use of natural gas and promote electric vehicle (EV) infrastructure as actions to help lower greenhouse gas (GHG) emissions.

The LSAP continues the City's commitment to sustainability. Environmental, social, and economic sustainability goals and policies are embedded throughout the Plan in all topical areas of this report: land use, circulation

and parking, utilities and public services, and urban design. A particular focus has been placed on environmental sustainability; these goals and policies are indicated with the following symbol.

You will see this symbol throughout this document. Where it occurs indicates a goal or policy that exhibits the City's commitment to environmental sustainability.

PLANNING PROCESS AND COMMUNITY INVOLVEMENT

The preparation of the 2016 Lawrence Station Area Plan (LSAP) took place in two distinct phases. Throughout the two-phase process, extensive input was received from the overall Sunnyvale community, business and property owners, specific focus groups, the Sunnyvale Planning Commission, Bicycle and Pedestrian Advisory Commission, Sustainability Commission, Housing and Human Services Commission, the Sunnyvale City Council, and, during Phase II, a Citizens Advisory Group (CAG).

Important input was also provided in regular meetings of a Technical Advisory Group (TAG) comprised of representatives from the City of Sunnyvale, City of Santa Clara, County of Santa Clara, SamTrans, Valley Transportation Authority (VTA), Caltrain, and representatives from the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The LSAP was updated in 2021 to include an increase in housing potential from 2,323 to 5,935 units, a boundary expansion to the west, and to adopt a Sense of Place Plan.

ORIGINAL LSAP PHASE I

The Sunnyvale City Council approved a feasibility study for the LSAP in May 2009, which subsequently led to receipt of the MTC/ABAG grant to prepare a Phase 1 study. This first phase of the Plan preparation process was initiated in December 2010.

Following early community outreach meetings, initial concepts were prepared for the future of the Plan area in an iterative process that included input and review from the TAG, Planning Commission, City staff and the Consultant Team.

ORIGINAL LSAP PHASE II

The second phase of the planning process refined the Preliminary Circulation Framework and Conceptual Land Use Alternatives and resulted in selection of a preferred plan, which was the basis of the plans, policies, and guidelines of the 2016 LSAP.

At the beginning of Phase II, in August, 2012 a Community Advisory Group (CAG) was established. The CAG, which was appointed by the City Council, included 19 members (and 3 alternates), and represented a broad spectrum of the Sunnyvale community, including neighborhood residents, business and property owners, and representatives from the Sustainability, Housing and Human Services, and Planning Commissions.

One of the first tasks the CAG undertook was to articulate four key goals which were intended to guide the selection of a preferred alternative and other details as the planning process moved forward:

Goal 1: Increase transit ridership by adding more jobs and residents in the area.
Goal 2: Improve circulation to the station and throughout the study area.
Goal 3: Provide transit-oriented development.
Goal 4: Ensure quality development.

The CAG also articulated the following vision statement:

> ***"The Lawrence Station Area will achieve its full potential as a local residential and employment center where people can live, work, shop and play in a vibrant, walkable environment that takes advantage of its proximity to transit. Towards this end, the plan will establish land use and parking policies, access and circulation, pedestrian/ bicycle and streetscape improvements, urban design guidelines, and infrastructure improvements through an extensive and inclusive public outreach and stakeholder process."***

Subsequently, the CAG engaged in a process to select a preferred land use concept from the three alternatives prepared during Phase I. After reviewing the three alternatives, the CAG selected Concept C: Mixed-use Development as the appropriate direction for the long-term evolution of the Plan area to meet their stated goals. The CAG further refined that concept by proposing a "flexible" mixed-use designation. The intent is to allow a mix of uses throughout the Plan area rather than in specifically assigned areas.

The CAG noted the benefits associated with having a mix of uses – jobs, residential, and retail and service – in proximity to one another, so that no single use would dominate and the mix of uses would help to ensure neighborhood vitality and a critical mass of activity. The CAG also noted the current lack of services and amenities and the opportunity for new land uses in the study area to mitigate this problem. With this direction, various draft elements of the LSAP, such as design guidelines, cost analysis and implementation strategies were prepared.

In February 2013, the Sunnyvale Planning Commission and City Council voted to accept the CAG's recommendation of a flexible mixed-use plan for the area. Subsequently, at its meeting of June 19, 2013, the CAG recommended that a strong incentive-based program be established in order to implement the Plan.

Key priorities included the following:

- Mixed use. A mix of uses should not be required on any specific property or area, but it should be a high priority of the incentive program.
- The Loop Roadway. Prioritize the provision of incentives for property owners who provide right-of-way and improvements for this key roadway.
- Affordable Housing. Place a high priority on incentives for property owners who provide affordable housing beyond current minimum City and State requirements.

The Plan accepted by the City Council, together with the implementation recommendations of the CAG, provided the basis for the goals, policies and guidelines described in this document. In addition, the 2016 Plan was accompanied by a Program Environmental Impact report (EIR), prepared in accordance with the California Environmental Quality Act (CEQA), which evaluated potential environmental impacts of the plan and described potential mitigations that may be needed.

2021 LSAP UPDATE

At time of the LSAP adoption on December 6, 2016, the City Council directed staff to return with a plan to study additional housing opportunities within the LSAP area, in addition to the 2,323 net new residential units adopted in the plan area. There were no increases directed for the adopted 1.2 million net new square feet of office/R&D development potential. The City Council approved a budget supplement from the City's General Fund for the costs of the study. The Council subsequently selected a preferred land use alternative on June 26, 2018, which studied an increase in the incentive residential density allowance north of the railroad tracks, and expanded the area where housing may be considered to include the commercial properties at Willow Avenue and Reed Avenue and to industrial properties bounded by Calabazas Creek, Kifer Road, Uranium Drive, and the railroad tracks. This increase would result in the potential for an additional 3,612 residential units.

On August 14, 2018, the City Council authorized a study to include properties owned by a major Lawrence Station Area company (Intuitive Inc.) at 932, 950, and 945-955 Kifer Road in the LSAP boundaries, and directed staff to include these amendments in the LSAP Housing Study. This would expand the original LSAP boundary to the west, on both sides of Kifer Road in the City of Sunnyvale. The Council also directed staff to study a pedestrian/bicycle route from the subject properties to Lawrence Station and analyze methods to retain trees and open space within the 945-955 Kifer Road property.

The Lawrence Station Area Sense of Place Plan was also developed along with the housing study and boundary expansion update. A Subsequent EIR per CEQA was prepared to analyze the environmental impacts of the plan updates.

Several community and board/commission meetings, as well as study sessions with the Planning Commission and City Council were held during the update process to solicit feedback. The housing increase of 3,612 units, boundary expansion, and Sense of Place Plan were adopted by the City Council on XXXXX, XX, 2021.

2 VISION FOR THE STATION AREA

The vision for the Lawrence Station Area Plan evolved through extensive public outreach and a dedicated Citizens Advisory Group. The four key goals are to: increase transit ridership, improve circulation, provide transit-oriented development and ensure quality development. Other guiding principles are discussed throughout the plan.





2 VISION FOR THE STATION AREA

"The Lawrence Station Area will achieve its full potential as a local residential and employment center where people can live, work, shop and play in a vibrant, walkable environment that takes advantage of its proximity to transit. Towards this end, the plan will establish land use and parking policies, access and circulation, pedestrian/ bicycle and streetscape improvements, urban design guidelines, and infrastructure improvements through an extensive and inclusive public outreach and stakeholder process."

- Lawrence Station Area Plan Citizens Advisory Group (CAG)

The Vision for the Lawrence Station Area Plan area was established based on the goals defined by the CAG and the TAG, as well as input from the public, City boards and commissions, and the City Council. The overall Vision serves as the basis for all elements of the Plan and its implementing policies. The seven major Vision goals follow.







V-1 LAND USE DIVERSITY

Promote a diversity of land uses and densities that will support transit usage and neighborhood services.

The Plan will guide the evolution of the area to become a new urban neighborhood in Sunnyvale with a mix of both employment and residential uses at a variety of densities. The mix of uses will allow people the opportunity to access their homes, jobs, recreational facilities and neighborhood goods and services within close proximity of one another, reducing their dependence on the automobile.

Densities will vary across the Plan area, with the higher-density residential and employment uses north of the railroad tracks. The range of densities will allow a full range of housing options at all levels of affordability. It will also allow variety in business and job opportunities and provide a sufficient population base to support transit as well as provide critical mass to support neighborhood services and amenities such as retail, open space and recreational facilities.





V-2 DENSE STATION AREA DEVELOPMENT

Locate highest intensity development closest to Lawrence Station.

The higher employment and residential populations that will result from locating higher intensities of development near Lawrence Station will support transit ridership and energize station area public spaces. This will further regional goals for housing and employment while also capitalizing on Lawrence Station, an existing built asset that is currently underutilized. It will also lessen the need for increased expenditures on regional highways and associated increases in greenhouse gas emissions and other adverse environmental impacts related to heavy reliance on automobiles in the overall transportation system.

The higher populations will also support commercial establishments near the station, which will serve the needs of the new population and also help meet the needs of existing residents and workers in nearby neighborhoods.





V-3 CONNECTIVITY

Improve connectivity for all modes of travel.

Over time, a new framework of the loop road and shared-use paths will be created that allows access throughout the Plan area for pedestrians, bicyclists, transit vehicles, automobiles and service vehicles. This new framework will be designed to facilitate easy access to retail goods and services, transit, and open space amenities for residents, workers and visitors with minimal need for use of the automobile. The Sense of Place Plan describes the details of this framework.

The new framework of the loop road and shared-use paths emphasizes improved north-south connectivity, both to provide access to Lawrence Station as well as to link the neighborhoods on both sides of the tracks together and to improve access to regional transportation facilities such as Central Expressway.


CINDY
VALET
SNOW PATROL
THE OFFSPRING



V-4 NEIGHBORHOOD CHARACTER

Ensure the area has a character that is unique to its location while being compatible with the overall character of Sunnyvale and sensitive to existing environmental assets.

The new framework of the loop road and shared-use paths will help ensure that future development of the Plan area is consistent with the development patterns of the surrounding neighborhoods and Sunnyvale as a whole. Additionally, unique existing physical features of the Plan area, such as the Redwood and Cedar street trees on Sonora Court and the Calabazas Creek channel will be protected and enhanced, thereby contributing to the unique character and fabric of this particular neighborhood.

New development will also be planned to make this area unique in the City by enhancing the quality and character of the neighborhood. While greater density and land use diversity is envisioned in new development areas, buffer zones, setbacks, building heights, landscape and open space and other physical design elements will be an essential ingredient of the design and review process, consistent with the guidelines established by this Plan.


P
PARKING
LEASING
SHOPS
1120



V-5 COMMUNITY IDENTITY

Create a strong sense of place and community identity with the development of a vibrant neighborhood center.

With the development of a more intensive, mixed-use environment with added employment and households, there is a new opportunity to create a community with an identifiable sense of place and identity. The focus of this will be an active "main street" commercial area on the Santa Vittoria Terrace portion of the new loop road with a strong pedestrian orientation.

Lawrence Station and Downtown Sunnyvale are described as Transit Mixed-Use areas in the 2017 LUTE, which allow for a wide variety of uses and densities located in close proximity to rail stations. These areas will be the center of the community, providing an active, mixed-use zone where offices or residential uses may be found over ground-level shops or dining. Wide sidewalks, low vehicular travel speeds, on-street parking and proximity to the Caltrain station will allow access to all modes of travel. The Santa Vittoria Terrace portion of the new loop road in the center of the Plan area near Lawrence Station will be active throughout the day and evening, providing much needed goods and services as well as a focal point for the neighborhoods around the station.

V-6 FLEXIBILITY

Allow the area to redevelop over time through a flexible system that is responsive to the goals, schedule and needs of individual business and property owners, developers, and residents.

The Plan is a long-range vision for change over time. It will be implemented through the coordinated efforts of the City of Sunnyvale working in partnership with businesses, property owners, developers and residents. Change will occur according to the timing and needs of property owners and the marketplace. This flexible, market-based approach will help ensure a diversity of land uses and densities are developed while also making certain that the process is orderly and that appropriate uses are developed in appropriate locations and at densities that are appropriate to meet the goals of the City as a whole and the neighborhood in particular.

The key to the success of such a flexible planning and development approach will be the establishment of two new primary regulatory tools, which will encourage development according to the vision of the Plan: 1) establishment of base maximum densities, and 2) a system of development incentives and bonuses above base maximum densities that will reward property owners in specific target areas who choose to provide the mix of uses, amenities and infrastructure necessary to achieve the vision of the plan.

V-7 SUSTAINABILITY

Re-develop the area in a manner that is environmentally, economically, and socially sustainable.

The City currently has several policies and plans in place to address sustainability, including the General Plan, Climate Action Playbook, Green Stormwater Infrastructure Plan, the Green Building Program, and Reach Codes. The LSAP builds on this commitment to sustainability.

Diversity is the key to the long-term sustainable development of the Plan area. Diversity of land use will allow flexibility in response to varying market conditions over time as well as allowing access to a range of job and housing opportunities. Diversity of transportation options will reduce dependence on a single mode of transportation and provide feasible long-term alternatives in response to fuel shortages, climate change and other unforeseen challenges.

By its nature, the LSAP has its roots in sustainability, as its focus is to enhance utilization of an existing commuter rail line: the Lawrence Caltrain station. Heavy dependence upon the automobile will decrease as future development in the Plan area provides a mix of uses to allow people to live, work, shop and relax in the area without needing an automobile for access. Increasing walking and bicycling opportunities also furthers the sustainability goal by providing a diversity of transportation choices.

3 LAND USE

Opportunities for the future of the Lawrence Station Area are dependent to some degree on conditions that currently exist. These may relate to existing land uses and the pattern of ownership and existing facilities; the degree to which the existing transportation network serves the project area; and the short, medium, and long-term opportunities provided by the real estate market in this part of Silicon Valley.





3 LAND USE

INTRODUCTION

The land use plan for the Lawrence Station area, illustrated in Figure 3.2, defines a land use pattern and allowable development densities that will result in a diverse neighborhood with an active daytime and nighttime environment that supports transit ridership both outbound and inbound of Lawrence Station. It is a mixed-use plan, conceived to result in a new neighborhood with a variety of housing types as well as office/research and development (R&D) uses that will provide significant employment. And, it is a flexible plan, allowing business and property owners to play a central role in its implementation over time and according to their specific needs and circumstances.

Mixed-use refers to development that combines different types of land uses—usually homes, shops, offices and community facilities—within easy walking distance. Within that broad definition, mixed-use development can take many forms: it may be vertical (within the same building). For example, the traditional office over the store is vertical mixed-use. Mixed-use can also be horizontal, such as office and residential in different buildings but on the same block or adjoining blocks. It may be low-, medium- or high-density; it may combine just two uses or several; and it may be located near a transit station (in which case it is also known as transit-oriented development) or accessible primarily by other means.

Mixed-use development is an old concept that is being revived and is gaining renewed popularity across the country. Through the early 20th century, before the widespread advent of zoning, most neighborhoods featured a diversity of land uses, and housing above stores was common. These development patterns can still be seen in older, traditional neighborhoods. Zoning developed as a response to rapid industrialization and urbanization, at a time when factories and many commercial activities were noisy, odorous

or hazardous. In its early stages, zoning focused on separating and buffering housing from industrial and commercial uses, to protect residents from polluting, noxious and harmful activities.

While many industrial uses still need to be segregated, much commercial activity today is benign or easily controlled. Retail, restaurants and offices can be safely integrated with housing. Indeed, there are many advantages to doing so. Compared to isolated and sprawling suburban development, mixed-use makes for more vibrant, active and convenient neighborhoods, and gives residents more opportunities to socialize and work near home. Equally important, when properly planned, mixed-use reduces dependence on driving and increases transit usage, thereby optimizing the return on transit investments, reducing the rise of greenhouse gas emissions and reducing the need to build ever-more highways and parking lots.

Flexibility in this land use plan means that most properties in the Plan area have the option to develop office/R&D, commercial, or residential uses. This provides enormous advantages to property owners and developers to respond to market conditions as they may evolve and to tailor uses and densities to particular locations within the Plan area.

LAND USE CHALLENGES

Several existing land uses in the Plan area present challenges for a vibrant, transit-oriented neighborhood. Most land uses and densities as of 2021 do not support transit; there is a preponderance of low-density, light industrial, one- and two-story uses north of the railroad tracks. These low intensity employment uses are surrounded by surface parking lots. The area south of the tracks is dominated by single-family and some medium-density multi-family residential neighborhoods, which have poor access to the station.

While there is abundant square footage of retail uses in the Plan area and nearby in the City of Santa Clara, generally they are poorly located, inaccessible to pedestrians, and of a type that is inconsistent with the needs of the existing office/R&D uses, neighborhoods or transit users.

Although it is unknown how many properties in the area would redevelop as part of the plan, there will surely be properties and uses that will remain. A key aspect of the plan will be to allow existing properties in the Plan area to remain and thrive.

LAND USE

Land Use Goals

LU-G1 Protect existing residential areas south of the railroad tracks.

LU-G2 Allow existing legal uses in the Plan area to remain as legal, conforming uses with the ability to grow and expand. These uses, however, should be discouraged from using hazardous materials in their operation, especially when located adjacent to residential uses and sites identified as appropriate for residential development.

LU-G3 Promote a mix of employment and residential uses.

LU-G4 Although the plan allows for flexible use of property, a balance should be found to ensure the mix of uses remains diverse at all times.

LU-G5 Provide a mix of uses within the Plan area that encourages transit ridership, creates a neighborhood of 24-hour activity and supports the provision of amenities such as open space and support services such as retail.

LU-G6 Provide a flexible land use pattern that provides the desired balance of employment and residential uses in order to create an active daytime and nighttime environment.

LU-G7 Incorporate land use flexibility to respond to variable market conditions, while promoting a blend of employment, residential and retail uses.

LU-G8 Provide amenities and services for existing and new neighborhoods.

LU-G9 Provide sufficient development intensity to allow the feasible development of associated amenities (such as open space) and support services.

LU-G10 Maximize development intensities in order to support transit usage.

LU-G11 Respect the scale and character of the existing residential uses located south of the railroad tracks.

Land Use Policies

LU-P1 Buffer / transition new development located adjacent to existing residential neighborhoods through site planning, land use and design strategies.

LU-P2 Allow existing legal businesses to remain and prosper as legal conforming uses.

LU-P3 Allow transition to higher density transit-supportive uses as opportunities arise through turnover of businesses or property ownership.

LU-P4 Establish appropriate levels of development for employment and residential uses to ensure an appropriate ratio exists in the plan area.

LU-P5 Ensure compatibility between adjoining residential and non-residential uses.

HOUSING

Housing will be allowed on specifically-zoned properties, as stand-alone residential or a part of a mixed use project. The residential components of mixed-use projects should be planned to maximize privacy for the residents while taking advantage of new and existing employment centers in the area.

AFFORDABLE HOUSING

An Affordable Housing and Anti-Displacement Strategy was prepared as part of the original 2016 LSAP to assess the potential need for affordable housing in the Plan area and recommend strategies to meet the City's affordable housing goals. The key findings and recommendations are listed here.

The City's affordable housing policies as of 2021 include a 15 percent affordability requirement for residential developments, and housing mitigation fees for most net new nonresidential development.

The Regional Housing Needs Allocation (RHNA) is a program implemented by ABAG that sets goals for future housing in accordance with State law. Sunnyvale will be allocated a goal that about 40 percent of new housing in Sunnyvale should be affordable at Low and Very-Low Income levels. However, requiring developers to provide affordable housing comparable to the RHNA targets is infeasible, as it creates an extreme cost burden that would eliminate the financial incentive to construct much new housing. Not for profit housing developers that specialize in affordable housing will be key players in helping Sunnyvale towards the RHNA affordability goals.

In order to provide developers with a financial incentive to produce more affordable housing than is required under current City policy, benefits that maintain profitability through added value or reduced costs will be needed. Therefore, this Plan includes a variety of affordable housing strategies, including the following:

- A local density bonus program that provides additional density (i.e., market-rate units) in exchange for additional affordable units for both for-sale and rental projects.
- Parking requirement reductions for all projects as compared to other areas of the City.
- Financial support for the construction or renovation of units by nonprofit builders and apartment operators by prioritizing the use of local resources such as the Housing Mitigation Fund in the Plan area.
- Procedurally support the construction or renovation of units by nonprofit builders and apartment operators. Facilitate providing affordable housing through the state density bonus law and assert that development projects reaching lower income levels through the use of tax credits and similar resources are expected and encouraged.

ANTI-DISPLACEMENT

To avoid displacement of existing lower-income residents, no upzoning or increases in allowable densities on sites currently occupied by housing will occur. Retaining existing density allowances will minimize the financial incentive to demolish and replace existing units to achieve higher property values, thus minimizing the concern that existing residents will be physically displaced by new development.

Housing Goals

H-G1 Provide sufficient housing in the Plan area to support an increase in rail transit ridership.

H-G2 Provide a range of housing types in the station area to provide for all income groups and lifestyles.

H-G3 Encourage and support development of affordable housing in the Plan area.

Housing Policies

H-P1 Encourage a diverse mix of housing tenure, including ownership, rental, affordable and housing for seniors.

H-P2 Prioritize the provision of affordable housing in the Plan area.

H-P3 Provide City-based incentives to promote development of affordable housing.

RETAIL

Retail development is an important component of the plan area in order to serve employees and residents of the area. Retail components can include restaurants, personal services, stores and hotels. Kifer Road, Sonora Court, Willow Avenue, Reed Avenue, and the Santa Vittoria Terrace portion of the new loop road provide excellent opportunity locations for ground floor restaurants and retail uses in order to take advantage of the tree-lined streets and proximity to the station.

Retail Goals

R-G1 Encourage a variety of retail uses.

R-G2 Provide retail that supports the needs of surrounding neighborhoods.

R-G3 Retain existing regional-serving retail but do not encourage additional regional-serving retail.

R-G4 Provide retail that is convenient and accessible to pedestrians and transit users.

R-G5 Do not encourage new auto-oriented and auto-serving retail.

Retail Policies

R-P1 Concentrate retail uses closest to the station in order to energize the station area.

R-P2 Encourage the development of restaurant uses on Kifer Road, Sonora Court, Willow Avenue, Reed Avenue, and Santa Vittoria Terrace.





New retail uses in the plan area will be oriented to serve neighborhood needs for goods, services, dining and entertainment.

INDUSTRIAL

The industrial users in the Plan area as of 2021 are an important part of the city, and are allowed to maintain their business and expand as necessary. Care should be taken, however, to ensure industrial materials, operations and work hours are compatible with the new uses as the area redevelops to more transit-oriented mix of uses.

Industrial Goals

I-G1 Allow existing legal industrial uses to remain in the area, but ensure materials used, operations and work hours are compatible with nearby residential users.

Industrial Policies

I-P1 Prohibit new use of hazardous materials on properties adjacent to residential uses and sites identified as appropriate for residential development. Existing hazardous material usage should be phased out on properties adjacent to residential uses.

OPEN SPACE AND RECREATION

Parks and open space are essential amenities for residents and workers that provide breathing room and recreational opportunities in a built urban environment. Its uses can include active and passive recreation, wildlife habitat, food production, and simple visual relief.

The Plan area contains no publicly dedicated parks, but there are a few private open spaces available for public use, such as the mixed-use development at Kifer Road and Santa Vittoria Terrace, and on the 1100 block of Aster Avenue. Public open space is also found outside the Plan area at Ponderosa Park and Elementary School. Eventually a two-acre site at Lily Avenue and Toyon Avenue (part of the former "Corn Palace" site) will be developed as a public park.

Visual open space and landscape improvements are found in various areas throughout the Plan area including the landscaped embankments of Lawrence Expressway, within the Calabazas Creek and El Camino Drainage channels, the attractive mature Redwood and Cedar plantings on Sonora Court, the large private open space at 945-955 Kifer Road, the mature street trees along Kifer Road, San Zeno Way, and Uranium Drive and the mature landscape of the existing neighborhoods south of the Caltrain tracks. However, none of these landscape improvements provide usable open space that is available for public use.

See Chapter 19.37 of the Municipal Code for landscaping requirements and Chapter 19.35 for residential useable open space requirements and site/surface parking lot landscaped area requirements.

Open Space Goals

OSG-1 Establish a system of parks and public spaces connected by green corridors and linear parks that serve and connect both new residential development and new non-residential development.

OSG-2 Provide open space within a five-to-ten minute walk of all residents and employees.

OSG-3 Connect open space areas to local and regional bikeways and trail networks to the greatest extent possible.

Open Space Policies

OSP-1 Strive to provide at least 54 acres of new open spaces and plazas open to the public throughout the Plan area.

OSP-2 Utilize the Calabazas Creek corridor to create new linear open space connectors available to the public.

OSP-3 Evaluate improving the following street corridors as Green Streets as linkages in the open space connector system.

- Loop Road, including Santa Vittoria Terrace
- Sonora Court
- Kifer Road
- Willow Avenue
- Aster Avenue
- Reed Avenue
- Uranium Drive
- Lawrence Station Road

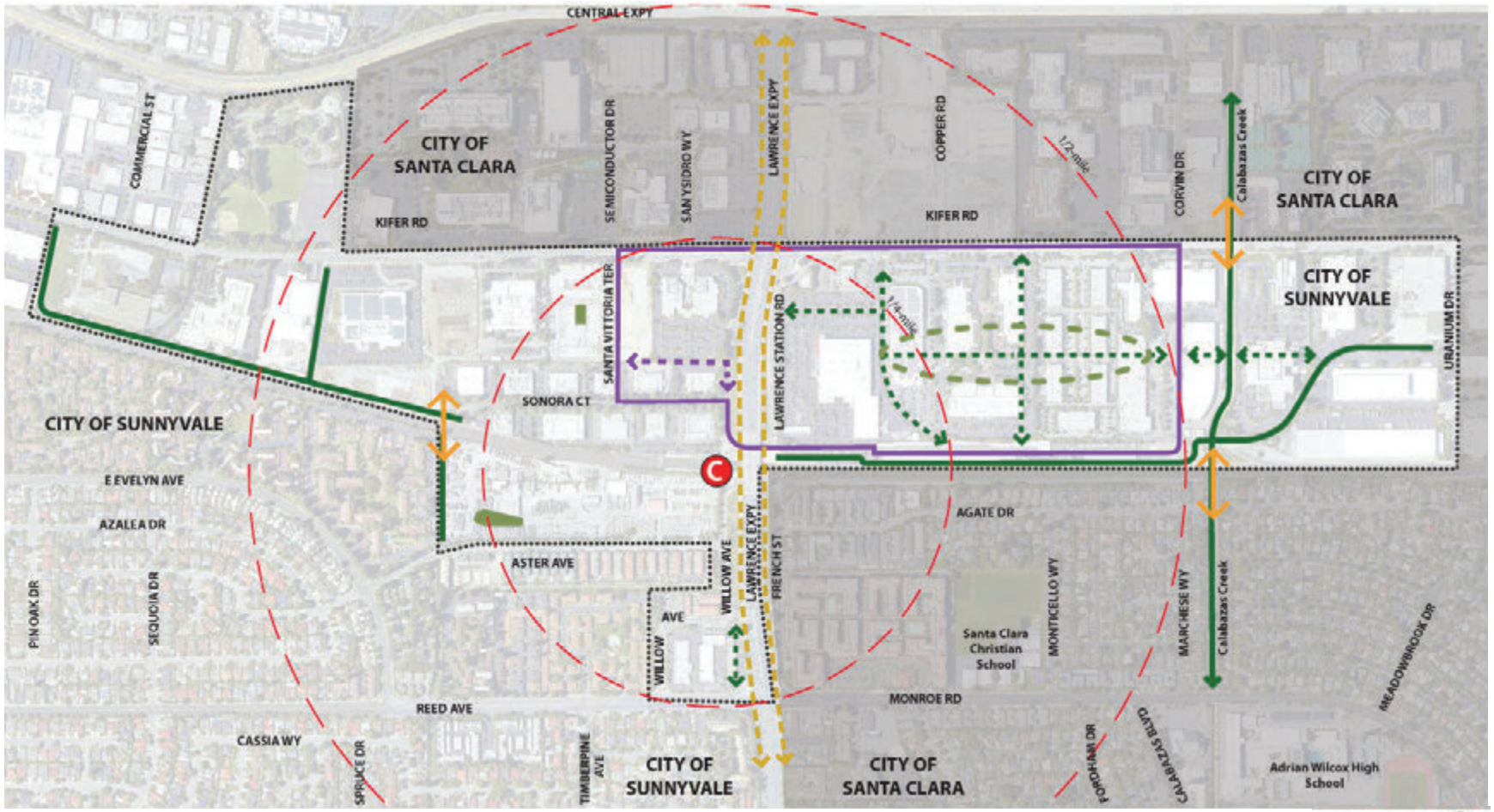
OSP-4 Provide pedestrian and bicycle amenities on all Green Streets, including abundant landscaping, Class I or Class II bicycle facilities, lighting and intersection amenity and safety improvements.

OSP-5 Locate all new dedicated open space to be adjacent to, and accessible from, the backbone open space system of linear parks and Green Streets.

OSP-6 Preserve and protect the existing mature street trees on Sonora Court, Uranium Drive, San Zeno Way, and Kifer Road .

OSP-7 Prepare a comprehensive maintenance program for all open spaces, plazas, and landscape areas with defined responsibilities for public and private stakeholders in the Plan area.

Figure 3.1: Open Space Framework



LAND USE CLASSIFICATIONS

The Land Use Plan (Figure 3.2) designates nine land use categories for the Plan area, one of which is exclusively a residential use, three are exclusively employment uses, and five are mixed-use designations. These designations align with the different zoning districts of the LSAP.

The land use classifications in this section represent City of Sunnyvale policy and are intended to be broad enough to allow flexibility in implementation, but specific enough to provide sufficient direction to carry out the Plan. In addition to the direction related to uses provided here, public uses, including parks, government offices, police and fire stations, and public schools, are permitted in all land use classifications, subject to environmental review and City approval (except for public schools and certain governmental offices). Table 3.1 describes the density and height development standards associated with these land use designations, including bonus densities driven by incentives. These standards are also found in Chapter 19.35 of the Municipal Code.

FLEXIBLE MIXED-USE I (MXD-I ZONING DISTRICT)

Properties designated Flexible Mixed-Use I are located north of the tracks within 1/4 to 1/2-miles of Lawrence Station. For properties on Sonora Court, refer to the Flexible Mixed-Use I/Sonora Court district. Because of this proximity to the station and commensurate abundant transportation access, high base maximum density is required for future development in this district.

Office, research and development (R&D), and residential uses are allowed in this classification. Retail uses are also allowed and encouraged in this area in order to create a critical mass of successful retail activity. Uses may be configured as vertical mixed-use, such as with retail under several floors of residential or office, or as single use buildings or parcels.

FLEXIBLE MIXED-USE I/SONORA COURT (MXD-I/S ZONING DISTRICT)

Properties designated Flexible Mixed-Use I/Sonora Court are located along Sonora Court, a cul-de-sac one block north of the railroad tracks, and just northwest of Lawrence Station. Parcels on Sonora Court are significantly smaller than others north of the tracks, averaging 1.2 acres. Because of the closest proximity to the station and smaller parcel sizes, the highest base maximum density is required for future development in this district.

Office, research and development (R&D), and residential uses are allowed in this classification. Retail uses are also allowed and encouraged in this area in order to create a critical mass of successful retail activity. Uses may be configured as vertical mixed-use, such as with retail under several floors of residential or office, or as single use buildings or parcels.

FLEXIBLE MIXED-USE II (MXD-II ZONING DISTRICT)

Areas designated Flexible Mixed-Use II west of Lawrence Expressway fall within approximately 1⁄4-mile of the station, and areas east of Lawrence are approximately 2/3-mile of the station, across Calabazas Creek. Under this classification, required base maximum densities for future development are slightly lower than in MXD-I because of further distances from Lawrence Station. A mix of land uses, including office, research and development, industrial, and residential uses are allowed and encouraged in this land use classification. Retail uses are allowed and encouraged.

FLEXIBLE MIXED-USE III (MXD-III ZONING DISTRICT)

The Flexible Mixed-Use III designation applies to the properties at 1155-1175 Aster Avenue (former Calstone/ Peninsula Building Materials site) that lies directly south of Lawrence Station and the rail tracks. These parcels face the recently constructed Aster Avenue townhomes to the south and the existing multi-family apartments to the west. Redevelopment of the site was approved in 2019 with a mixed-use project containing 741 rental and for-sale units and 1,500 square feet of retail near the station entry. At the time of approval, the 741 units were subtracted from the 2,323 net new units in the original LSAP Development Capacity. The project was designed to respect the scale and character of adjacent existing residential uses. The proximity of

existing residential uses are the reason why the base maximum densities are lower than those found north of the station where there are no immediate existing residential neighbors. Retail development, in a vertical mixed-use format, was approved along the Willow Avenue frontage to cater to train passengers and persons in the neighborhood.

FLEXIBLE MIXED-USE IV (MXD-IV ZONING DISTRICT)

The Flexible Mixed-Use IV designation is limited to one small area south of the station near the intersection of Lawrence Expressway and Reed and Willow Avenues. These parcels are near existing residential neighborhoods and are immediately adjacent to the expressway. The area is a convenient location for local-serving retail services, residential, and office/ R&D uses. Because of the existing retail services onsite relied on by local residents and the site's strategic location at a major intersection, redevelopment of the site requires provision of retail services. Redevelopment may include ground floor retail with residential or office/R&D above, or in a horizontal format with separate buildings. Redevelopment plans must consider the County's plans for the Lawrence Expressway grade separation, which may require dedication of land on the parcel nearest the expressway.

HIGH-DENSITY RESIDENTIAL (R-5 ZONING DISTRICT)

The high-density residential land use designation is found only on two sites on Willow Avenue, south of the Caltrain tracks. One of the sites was redeveloped in 2012 to a 16-unit townhome project on Buttercup Terrace. These parcels are surrounded by multifamily residential uses to the west and north (across El Camino Channel). Residential uses are assumed for the area, but other nonresidential uses per the R-5 zoning district use table may be considered. Unlike MXD-zoned properties, density is determined by lot area, consistent with Citywide R-5 standards. R-5 properties are not eligible for additional densities in the LSAP Incentives Program.

LSAP INDUSTRIAL AND SERVICE (M-S/LSAP ZONING DISTRICT)

The LSAP Industrial and Service District applies to the southeast corner of Kifer Road and Lawrence Expressway/Lawrence Station Road, which includes three properties; the largest of which has been historically occupied by a large-scale retail use (Costco). These sites have a different designation than other adjacent properties because the City desires a strong retail presence to remain at this highly visible street intersection. To that end, residential uses are not permitted and a minimum retail requirement of 25% has been placed to ensure a similar FAR as the existing large-scale retail use. Office, R&D, and Industrial uses are allowed with required retail. Redevelopment may consist of a vertical mixed-use format with ground floor retail and office/R&D/industrial above, or in a horizontal format in separate buildings.

LSAP INDUSTRIAL AND SERVICE 60% (M-S/LSAP 60% ZONING DISTRICT)

The LSAP Industrial and Service 60% designation is for only one site on the north side of Kifer Road on the western boundary near Commercial Street. The historic use of this site was for a private open space area for major companies in the area. The maximum FAR is lower than many other areas of the LSAP in order to preserve a majority of the existing open space and mature trees onsite. Only industrial, smaller-scale retail and service, office, and R&D uses are allowed in this designation, per the use table in the M-S zoning district. Residential is prohibited.

LSAP INDUSTRIAL AND SERVICE 120% (M-S/LSAP 120% ZONING DISTRICT)

The LSAP Industrial and Service 120% designation applies to two sites located south/southwest of the M-S/ LSAP 60% site. The sites are on the south side of Kifer Road on the western boundary near Commercial Street. The historic use of one of the sites was chemical storage, and as such environmental remediation has been ongoing for years. For this reason and others, residential uses are prohibited. Similar to M-S/LSAP 60% zoning, only industrial, smaller-scale retail and service, office, and R&D uses are allowed per the use table in the M-S zoning district.

Table 3.1: Station Area Development Standards

		Office/R&D/Industrial		Retail	Residential		Height (feet)
Land Use color	Land Use/Zoning	Base Maximum FAR	Maximum FAR with incentives[3]	Minimum FAR	Base maximum density (du/ac)[1, 2]	Total du/ac incentive points available	Maximum residential and non-residential height
	Flexible Mixed-Use I (MXD-I)	*35%*	*150%*	*N/A*	*45*	*35*	*100*
	Flexible Mixed-Use I/Sonora Court (MXD-I/S)	*35%*	*150%*	*N/A*	*54*	*26*	*100*
	Flexible Mixed-Use II (MXD-II)	*35%*	*150%*	*N/A*	*36*	*32*	*100*
	Flexible Mixed-Use III (MXD-III)	*35%*	*100%*	*N/A*	*28*	*17*	*55*
	Flexible Mixed-Use IV (MXD-IV)	*35%*	*50%*	*25%*	*28*	*17*	*55*
	High-density Residential (R5)	*N/A*	*N/A*	*N/A*	*Based on lot area per SMC Table 19.30.040*	*N/A*	*55*
	LSAP Industrial and Service (M-S/LSAP)	*35%*	*150%*	*25%*	*N/A*	*N/A*	*85*
	LSAP Industrial and Service 60% (M-S/LSAP 60% FAR)	*35%*	*60%*	*N/A*	*N/A*	*N/A*	*85*
	LSAP Industrial and Service 120% (M-S/LSAP 120% FAR)	*35%*	*120%*	*N/A*	*N/A*	*N/A*	*85*

1 New residential development in the LSAP is required to build to at least 85 percent of the zoning district's base maximum zoning density.
2 Additional densities may be achieved above the base maximum density or density obtained through the LSAP Incentives Program by providing affordable housing consistent with State Density Bonus Law.
3 A Development Agreement is required for additional FAR above the base maximum through the LSAP Incentives Program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program.

Figure 3.2: Land Use Plan

- STUDY AREA BOUNDARY
- SUNNYVALE / SANTA CLARA BORDER
- EL CAMINO STORM DRAIN CHANNEL / CALABAZAS CREEK
- LAWRENCE CALTRAIN STATION

SUNNYVALE EXISTING LAND USE

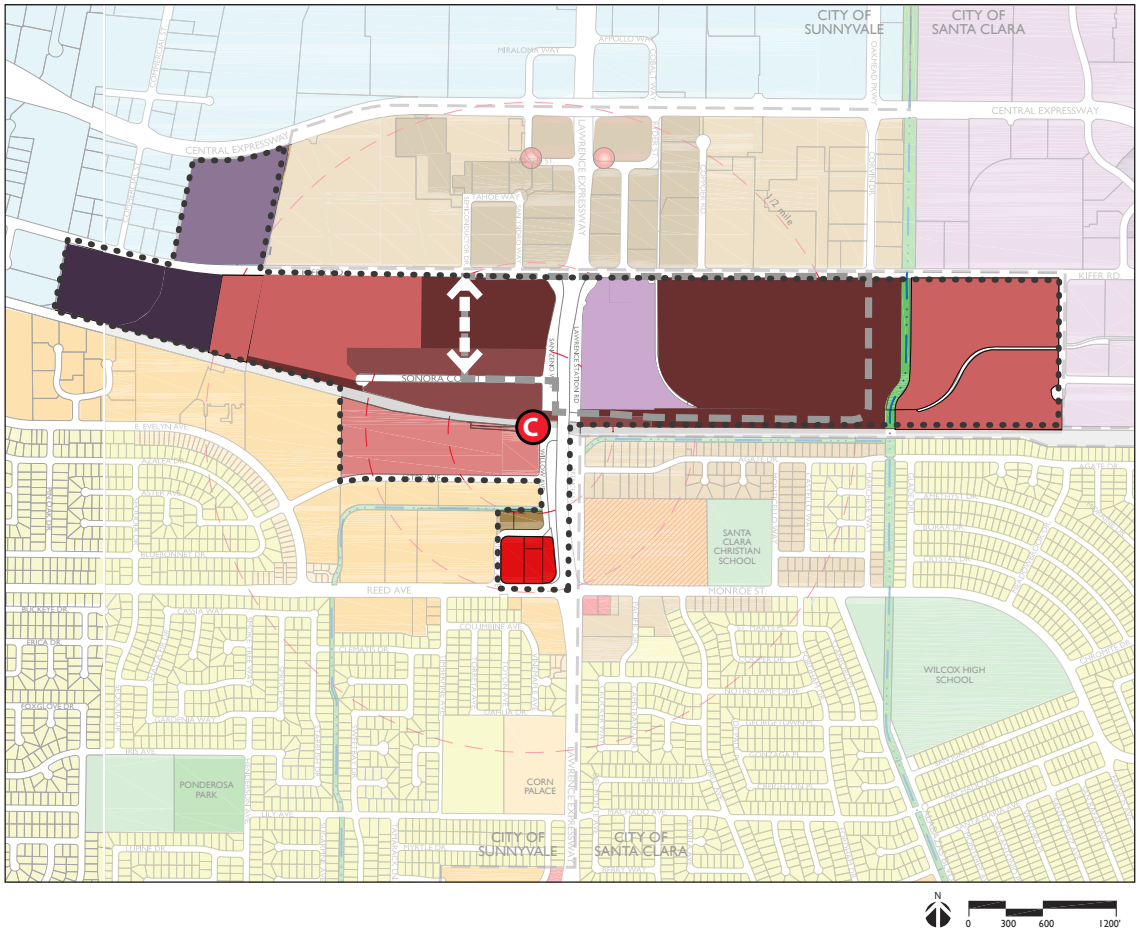
- LOW DENSITY RESIDENTIAL
- LOW-MEDIUM DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- INDUSTRIAL & SERVICE
- EXISTING PUBLIC PARKS
- EXISTING SCHOOLS AND OTHER CIVIC USES

SUNNYVALE LSAP LAND USE

- FLEXIBLE MIXED-USE I
- FLEXIBLE MIXED-USE I / SONORA COURT
- FLEXIBLE MIXED-USE II
- FLEXIBLE MIXED-USE III
- FLEXIBLE MIXED-USE IV
- HIGH-DENSITY RESIDENTIAL
- LSAP INDUSTRIAL AND SERVICE
- LSAP INDUSTRIAL AND SERVICE 60%
- LSAP INDUSTRIAL AND SERVICE 120%
- PRIMARY LOOP ROAD
- SANTA VITTORIA TERRACE

SANTA CLARA EXISTING & GENERAL PLAN LAND USE

- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- REGIONAL MIXED USE
- LOW INTENSITY OFFICE/R&D
- LOW DENSITY RESIDENTIAL



PUBLIC FACILITIES

Public facilities include government, civic, educational and public services, such as open space and recreation facilities, schools and community centers. The Plan area currently contains no public facilities or Public Facility (PF) zoning. However, it is envisioned that a variety of public facilities will be needed to serve the area as development proceeds. Some of these will be provided through mandatory fees and assessments consistent with existing City of Sunnyvale policy. Others will be provided through development incentives for new development. Therefore, the precise location and programmatic content of these facilities is unknown and is not illustrated on the land use plan.

PARKS AND OPEN SPACE

A key feature of the Plan is to ensure that a system of parks, recreational facilities and open space are developed. Current City of Sunnyvale policy relating to the provision of parks and recreation facilities sets a target standard of 5 acres of open space be provided per 1,000 persons residing within each neighborhood planning area which is being implemented by park dedication requirements. For housing densities in the Plan area, there is a 0.009 acres of park dedication required per dwelling unit. The total need within the Plan area to serve the existing and future population growth would be at least 54 acres of open space (5,935 dwelling units multiplied by 0.009 acres).

Because of the urban nature of the planned new development and because there is very little public or publicly-accessible land available in the Plan area, the Plan envisions that parks, recreation and open space facilities will be provided through three measures:

1. Ponderosa Park and Approved Park at Lily Avenue and Toyon Avenue (former Corn Palace site). Some of the need can be met for those residents south of the tracks that are near Ponderosa Park or the approved park at the former Corn Palace site (unnamed at time of plan update).
2. Capitalize on underutilized opportunities. An example includes the Calabazas Creek channel, which can provide linear park connections between neighborhoods, parks and open spaces.
3. Land dedication, publicly accessible private parks, and/or in-lieu fees consistent with established City policy and applicable to population increases resulting from new development in the Plan area in the future. For design standards related to the provision of open space in new development areas and properties, see Chapter 6: Urban Design.

Figure 3.1: Open Space Framework, illustrates the key elements of the planned parks and open space system for the Plan area. Calabazas Creek, combined with Green Street linkages, will provide the backbone of the system. Land dedications or providing public access easements on private open spaces resulting from the development process will provide the major public open spaces that are needed and will be strategically located to be accessible from the backbone system.

DEVELOPMENT POTENTIAL

The LSAP is a flexible mixed-use plan that will result in a blend of office/R&D, retail, industrial and residential development. In many areas, the Plan allows for the long-term development of significantly higher densities than are currently allowed in other parts of the City.

FLEXIBLE MIXED-USE

The LSAP is designed to accommodate development according to the timing and needs of property owners and the marketplace. Unlike traditional zoning, which typically establishes single-use districts with fixed densities, the LSAP allows a flexible mix of uses at a range of densities. Zoning districts have been established in Chapter 19.35 of the Sunnyvale Municipal Code to allow for this flexibility.

INCENTIVE-BASED PLAN

The LSAP is an incentive-based plan. Because very little land in the Plan area is publicly-owned, implementation of the LSAP will be heavily driven by private property owners. Development incentives (in the form of density bonuses) will allow property owners to develop their properties beyond the base maximum densities (residential) and base maximum floor area ratios (office/R&D/industrial) in exchange for providing community benefits such as mixed-use development, connectivity enhancements, access easements, public open space, additional affordable housing, financial contributions, and other features that advance the goals of the Plan. In residential development, community benefits are worth a defined amount of points. Development Agreements, subject to adoption by the City Council, are required for office/R&D/industrial projects requesting access to higher floor area ratios (FAR) through the incentives program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program. Developers are not required to build with incentives. Rather they will have the option to choose which incentives best suit their business plans and economic goals.

For projects with residential uses that propose to include affordable units under State Density Bonus Law, the bonus percentage that must be provided under state law is added to the maximum density obtained with incentive points for the particular project, or to the base maximum density if the project applicant does not propose to utilize incentive points through the LSAP Incentive Program.

The LSAP Development Incentives Program has been established under separate cover, and will be updated periodically.

DEVELOPMENT CAPACITY

In order to ensure that long-term development does not exceed the carrying capacity of infrastructure systems and the environment, a growth-monitoring program with a development capacity was established with the adoption of the original LSAP.

The original 2016 LSAP prescribed a development capacity of 2,323 net new residential units and 1.2 million square feet of net new office/R&D, consistent with the findings of the Environmental Impact Report (EIR) that was conducted as part of the planning process. The housing capacity was raised from 2,323 to 5,935 units as part of the 2021 update. If the 5,935 net new unit and/or 1.2 million net new square feet of office/R&D development capacity is reached, subsequent development proposals would need to conduct additional environmental analysis per CEQA.

DEVELOPMENT ASSUMPTIONS

A key goal of the Plan is to ensure that future new development is of a type and at sufficient density to create a diverse area that can support a mix of employment and residential uses, supports transit use, and can provide necessary amenities and support services, such as open space and neighborhood retail. Therefore, base maximum development densities are established. New residential development will not be allowed at densities less than 85 percent of these base maximum densities. The assumptions below were used in determining the Plan buildout for purposes of environmental impact analysis and infrastructure needs.

Original 2016 LSAP

The original LSAP's development potential was estimated under a variety of assumptions and scenarios. These scenarios included:

1. Minimum Density– 2,000 net new units; net office/R&D loss of 250,000 sq. ft.; 78,000 sq. ft. net new retail sq. ft.; and 700 net new industrial sq. ft.
2. Maximum Density with Incentives – 4,650 net new units; 2.4 million sq. ft. of office/R&D; 78,000 sq. ft. net new retail sq. ft.; 9,000 net new industrial sq. ft.
3. Estimated Likely Development– 2,323 net new units; 1.2 million net new office/R&D/industrial sq. ft.

All three of the above development scenarios included estimates for existing residential, office/industrial/R&D, and retail uses in the original study area that were not expected to change. The scenarios assumed a residential ratio of 2.42 people per unit, 400 square feet per employee for retail, and 420 square feet per employee for office/R&D/light industrial.

The Estimated Likely Development scenario was determined to be the appropriate scenario evaluated in the original LSAP's EIR, and was adopted by the City Council as the development capacity for the LSAP as this scenario was based on reasonable development goals and assumptions for the Plan area. The adopted boundaries did not include existing residential areas in the original study area.

2021 Update

The 2021 LSAP update to the development capacity consisted of increasing the maximum number of net new housing units from 2,323 to 5,935. The 1.2 million square feet of net new office/R&D/industrial development did not change. The estimated yield was obtained by identifying 30 opportunity sites where there was a reasonable potential for future redevelopment. Parcels not included in the opportunity sites were those that recently redeveloped, had multiple owners, or were unlikely to redevelop, such as the Costco site east of Lawrence Expressway.

Development Goals

D-G1 Develop the Plan area with a diverse mix of uses at intensities sufficient to support and take advantage of the significant existing public investment in transit.

D-G2 Encourage a range of development intensities in order to achieve neighborhood diversity and allow flexibility for businesses, property owners, workers and residents.

D-G3 Implement the development of the Plan, including the provision of amenities and support services through development incentives rather than relying exclusively on regulatory actions or direct public investment.

D-G4 Ensure that new development and construction activities improve, rather than adversely impact, the natural environment.

Development Policies

D-P1 Within the Plan area actively work with the City of Santa Clara to ensure consistency between the City of Sunnyvale's LSAP and the City of Santa Clara's General Plan, LSAP, and Zoning provisions.

D-P2 Maintain the LSAP Development Incentives Program.

D-P3 Encourage development at the maximum density obtained with incentive points in order to maximize the provision of neighborhood-serving amenities, support services and infrastructure improvements.

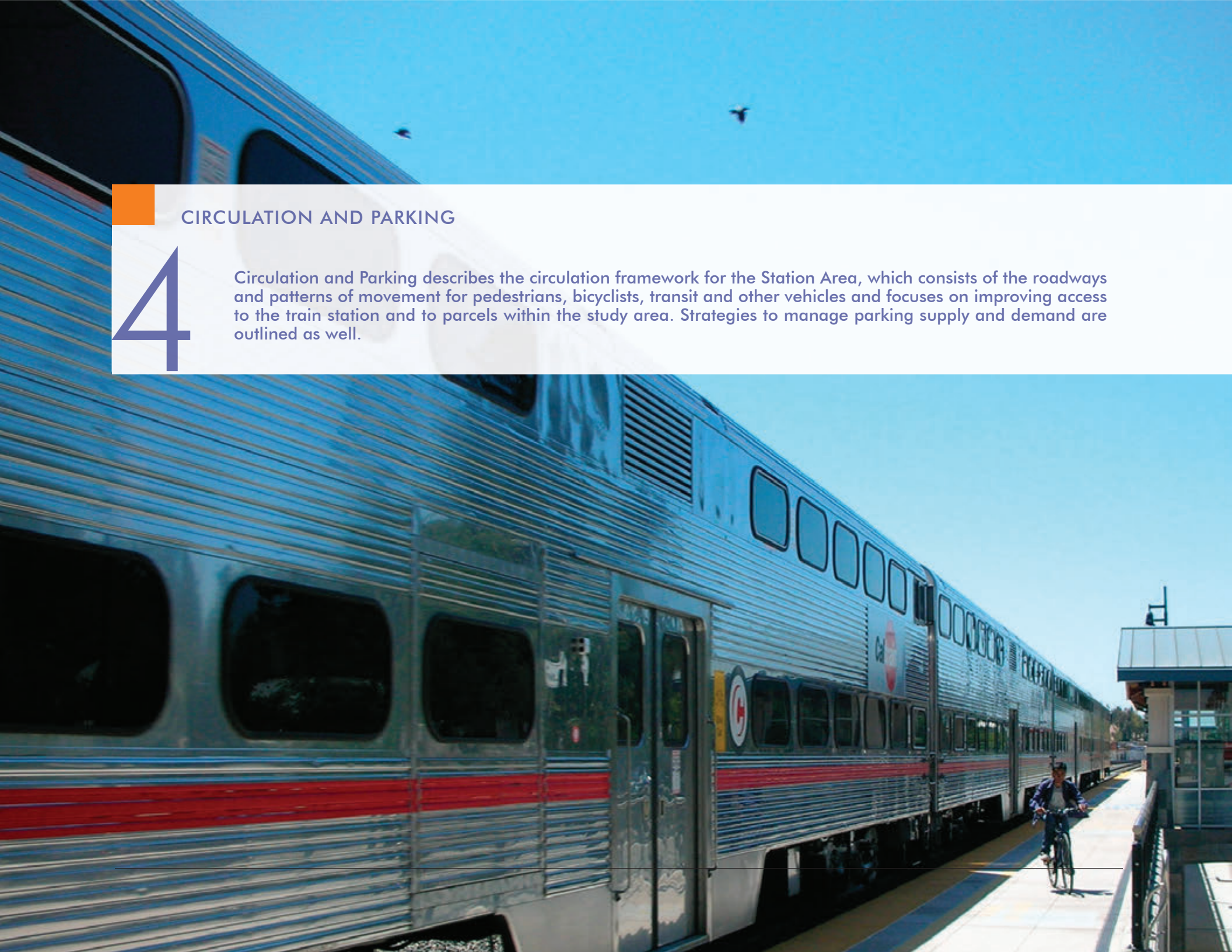
D-P4 Require new residential development to build to at least 85 percent of the zoning district's base maximum density.

D-P5 Additional residential densities may be achieved above the base maximum density or density obtained through the LSAP Incentives Program by providing affordable housing consistent with State Density Bonus Law.

D-P6 A Development Agreement is required for additional office/R&D/industrial FAR above the base maximum through the LSAP Incentives Program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program.

4 CIRCULATION AND PARKING

Circulation and Parking describes the circulation framework for the Station Area, which consists of the roadways and patterns of movement for pedestrians, bicyclists, transit and other vehicles and focuses on improving access to the train station and to parcels within the study area. Strategies to manage parking supply and demand are outlined as well.





4 CIRCULATION AND PARKING

The circulation system within the Plan area will play an important role in supporting future development by expanding mobility choices and providing a safe, convenient way to travel within the area, and to other areas, regardless of one's travel mode. The LSAP incorporates a "complete streets" approach for circulation planning that accommodates all travel modes so that driving is an option, but not a necessity. Complete streets are designed and operated to enable safe and convenient access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. This Plan strives to meet both the mobility and parking needs of existing businesses, visitors, and employees while also accommodating future development planned for the area. Effective planning for future land uses requires creation of a truly multi-modal transportation system.

THE CIRCULATION FRAMEWORK

The Circulation Framework is the system of streets and blocks that are the primary determinants of structure in an urban area. The Framework determines where circulation for motor vehicles, pedestrians, bicycles and transit will occur, and where land uses and buildings will be arranged and located.

In 2021, the Circulation Framework in the Plan area is extremely limited. North of the Caltrain tracks, due to the industrial nature of many of the 2021 uses, the area is designed almost exclusively for the use of motor vehicles, particularly automobiles and trucks. Although the area has started changing, since the adoption of the Plan in 2016, the area is historically dominated by parking lots and a pattern of large industrial parcels with very few streets. Due to the constraints imposed by the configuration of Lawrence Expressway, access to the station from the north is via San Zeno

Way and Lawrence Station Road, both of which are narrow streets, located close to the expressway that provide only partial access that is difficult to understand and navigate. These streets are also not well-located to optimize access to property along both sides of their street frontage.

South of the railroad tracks, existing residential neighborhoods border the Plan area. These residential areas have a more fine-grained pattern of streets and blocks that, with a few exceptions, are well-scaled to pedestrians and bicycles and provide good access for motor vehicles. Access to Lawrence Station is constrained from this direction by indirect street access on Willow Avenue, and French Street from the City of Santa Clara side of the street. Although Willow Avenue provides two-way access to the station, it does not occur at a full four-way intersection and pedestrian access is limited to one side of the street for most of Willow Avenue.

The Lawrence Station Area Sense of Place Plan ("SOP" or "Sense of Place Plan") has been prepared to supplement this Plan. The Sense of Place Plan is incorporated into this plan by reference and builds off the goals, policies, and guidelines outlined in the LSAP and provides standards and recommendations to shape the future character and improve the streetscape experience around the station.

Figure 4.1 illustrates the major planned circulation elements of the LSAP Circulation Framework. The Circulation Framework Plan includes existing streets as well as new the new loop road and shared-use paths that are strategically located to allow multi-modal mobility throughout the Plan area. The new circulation patterns illustrated are conceptual in nature and do not represent specific alignments. The final location, width, and alignment will be determined upon review of development projects on sites in and near the path of the additional circulation improvements.

The following is a discussion of the key major segments of the future circulation framework for the Plan area. The circulation framework contains two parts: circulation improvements and existing street improvements.

CIRCULATION IMPROVEMENTS

In order to provide improved access throughout the Plan area in general, and to Lawrence Station in particular, a framework of the new loop road and shared-use paths has been established. While east-west connections throughout the Plan area are relatively good, north-south linkages at the local level, particularly north of the tracks, are poor, due to the barrier presented by the railroad tracks and the historical large-lot industrial development of the area. Therefore, a primary goal of the new loop road is to provide improved north-south access throughout the Plan area.

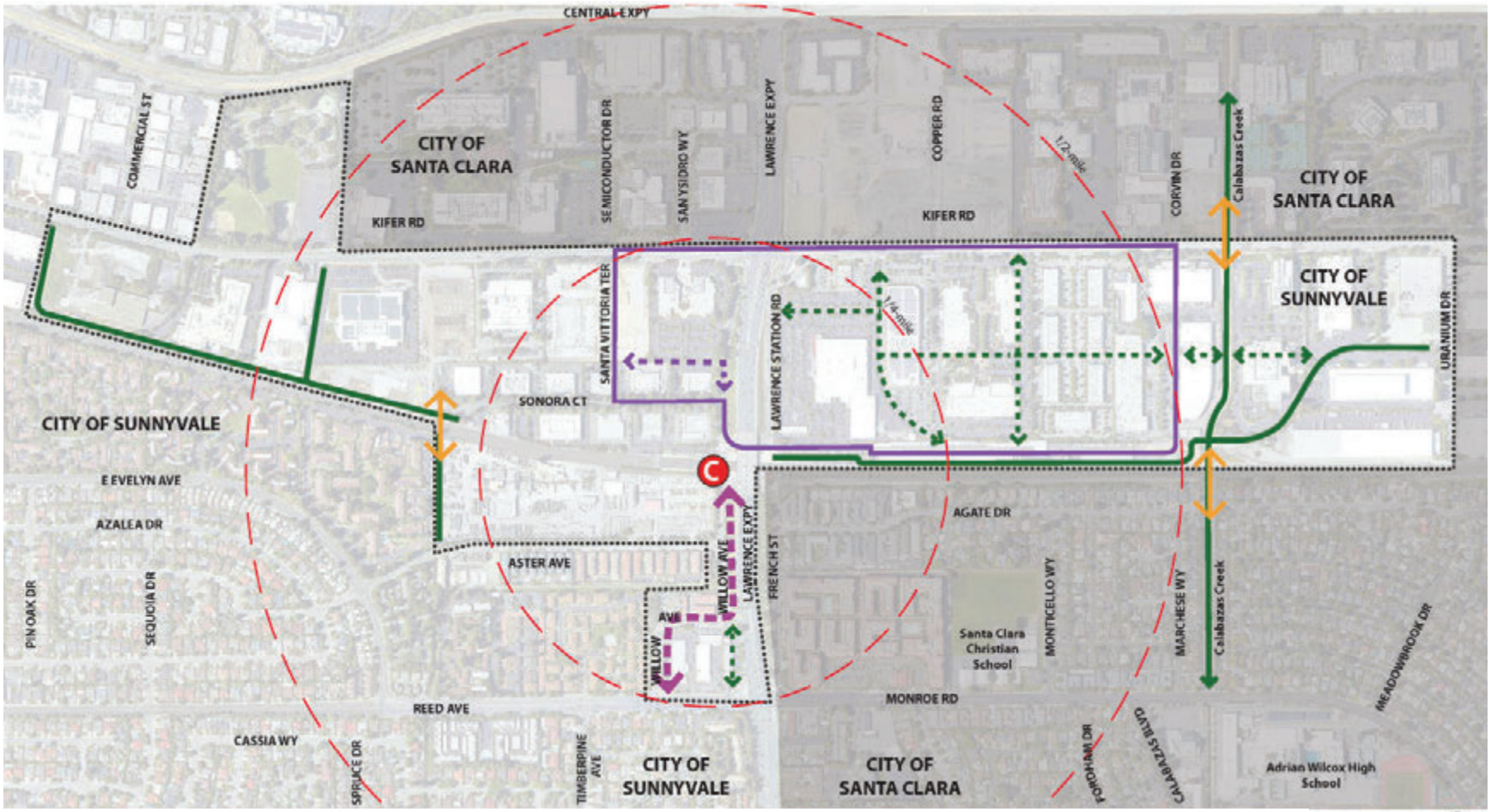
The new circulation network will emerge over time and specific alignments may vary as individual properties are redeveloped by individual property owners. As these properties are reconfigured, developer incentives to provide access and improvements for these new corridors will be available.

Loop Road

The Loop Road will be a private collector street with public access that will provide direct north-south access in the area north of the Caltrain tracks. West of Lawrence Expressway, the Loop Road would begin at Kifer Road and Semiconductor Drive/Santa Vittoria Terrace, moving southward through private property to Sonora Court which provides direct access to the station via San Zeno Way. East of Lawrence Expressway, the Loop Road would begin at Kifer Road and Corvin Drive, moving south and to the rear of private properties on Kifer Road, and westward to Lawrence Station Road, which provides direct access to the station. The Loop Road will thus allow vehicles travelling east-west on Central Expressway and Kifer Road to readily access the north-bound platform of Lawrence Station, as well as significantly improve visibility and access to properties along its length.

The Loop Road will be a richly-landscaped multi-modal street, designed according to complete streets concepts, with a wide pedestrian zone containing sidewalks and street trees, bicycle lanes, bus transit stops, and a travel lane in each direction, with on-street parking wherever feasible. The Loop Road will be designed in such a manner that it can accommodate bus transit, serving the new neighborhood and providing an important bus

Figure 4.1: Circulation Framework



transit link to Lawrence Station. Coordination with VTA will be required to identify timing, transit stop locations and amenities.

The primary focus of retail activities in the Plan area will be along the north-south portion of the Loop Road now known as Santa Vittoria Terrace, connecting Kifer Road to Lawrence Station on the west side of Lawrence Expressway via Sonora Court and San Zeno Way. This segment of the Loop Road is centrally located in the densest mixed-use zoning districts of the Plan area and will provide a venue for a wide range of pedestrian-oriented commercial retail activities that can serve the nearby mix of uses north of the station as well as the existing residential neighborhoods to the south, creating a destination point.

This Loop Road segment will be a pedestrian-friendly place, with travel lanes in each direction wide enough to accommodate bus transit, bicycle lanes, parallel parking in certain areas, and a wide pedestrian zone containing sidewalks, street trees and street furnishings. The segment is designed so that traffic speeds will be low.

The majority of this Loop Road segment, known as Santa Vittoria Terrace, was completed as part of a mixed-use development at 1120-1130 Kifer Road. Santa Vittoria Terrace connects the intersection of Kifer Road and Semiconductor Drive to the rear of the parcel, and has been designed to continue through the adjacent property to the south out to Sonora Court, leading to Lawrence Station via San Zeno Way. The City may consider transfer of development rights for completing the Loop Road segment through a parcel on Sonora Court. The exact alignment of this vital connection will be determined as properties in the vicinity redevelop.

Primary Class I Shared-Use Paths

In the area north of the Caltrain tracks, the plan envisions two main Class 1 bicycle/pedestrian shared-use paths through private property at the east and west ends of the LSAP boundaries with eventual direct access to the train station. The shared-use paths would be privately owned and maintained with public access easements. The shared-use path would be paved, and include lighting, landscaping, and amenities along its path. On the east end, a trailhead is envisioned on Uranium Drive, and the shared-use path would either follow the existing rail spur, or if determined to be infeasible, at the rear of parcels fronting Kifer Road. The shared-use path would cross Calabazas Creek to the rear of private properties on Kifer Road, and may utilize a dedicated shared-use path easement on the property at 106 Lawrence Station Road (self-storage use in 2021) in order to provide an outlet to Lawrence Station. On the west end, a trailhead is envisioned on Kifer Road just west of Commercial Street, and would extend to the rear of parcels fronting Kifer Road and connect to a shared-use path constructed in 2020 toward the terminus of Sonora Court, which provides direct access to Lawrence Station via San Zeno Way.

Secondary Bicycle/Pedestrian Pathways

A secondary bicycle/pedestrian pathway network through private property will provide enhanced local access and will provide more opportunities for walking and bicycling through shortened travel paths to the station and commercial areas both within the neighborhood and to and from nearby areas. In addition to pedestrian and bicycle access, automobile access may also be considered. The secondary pathways would be privately owned and maintained with public access easements. Secondary bicycle/pedestrian pathways are shown east of Lawrence Expressway to break up the historical large-lot development pattern.

Another route is shown on private property west of Lawrence Expressway to connect the new Loop Road to San Zeno Way. A direct north-south route is also proposed on private property at Lawrence Expressway and Reed Avenue for seamless access to Lawrence Station. In certain circumstances, based on local conditions, it may not be practical for these secondary pathways to accommodate bicycles. In these situations, pedestrian pathways must be provided. The locations of the secondary routes shown in Figure 4.1 are conceptual. The exact alignment and design of these vital linkages will be determined as properties in the vicinity redevelop.

Bicycle/Pedestrian Rail and Roadway Crossings

The plan envisions that north-south connectivity for pedestrians and bicyclists will be vastly improved by two new railroad track crossings. Due to potential land use conflicts, traffic considerations and other physical

constraints, it is unlikely to develop these two additional track crossings as vehicular streets. Today, the underpass at the Caltrain station and the Lawrence Expressway overpass provides the only north-south track crossing opportunities in the area. Figure 4.2 illustrates the location of two additional grade-separated crossings of the railroad tracks that will serve to increase connectivity to the station as well as to local and regional destinations from the neighborhoods on either side of the Caltrain corridor.

The crossing east of Lawrence Expressway at Calabazas Creek is being evaluated as part of the Calabazas Creek Trail study by the City of Santa Clara and would likely include a pedestrian/bicycle under-crossing of the tracks. Further north on Calabazas Creek where it intersects with Kifer Road, a trail undercrossing beneath Kifer Road is shown on Figure 4.2. This would provide continuous access for bicyclists and pedestrians on the trail without having to cross through vehicular traffic on Kifer Road.

The crossing to the west of Lawrence Expressway was part of the original 2016 plan to connect the 1100 block of Aster Avenue to the west end of Sonora Court. The feasibility of a crossing, either by an aerial structure above the tracks or below the tracks in an underground tunnel, was evaluated as part of the redevelopment process of 1155-1175 Aster Avenue (former Calstone/ Peninsula Building Materials site). There are challenges with incorporating the crossing in either scenario. The presence of an existing large-diameter storm drain line on the project site impedes either option. The bottom of the storm drain line is located at least six feet beneath the surface, and an underpass connection would require a deep excavation depth with a lengthy access ramp. The storm drain line also constrains the area where an aerial structure could be located because of clearance space needed for maintenance of the line. There are also concerns about the lack of space on the north side of the tracks to land the aerial structure at the Sonora Court street level. The City did not require provision of the crossing due to these issues, but required recordation of an irrevocable offer of dedication on the property should there be the funding and demand to construct a crossing in the future.

STREET IMPROVEMENTS

Improvements to existing (2021) streets will be needed to ensure safety and improved mobility for all street users.

Lawrence Expressway

In 2003, the Santa Clara County Expressway Study recommended the grade separation of Lawrence Expressway at the Reed/Monroe, Kifer Road, and Arques Avenue intersections. In the summer of 2013, in a follow-up study jointly-funded by the County and the cities of Sunnyvale and Santa Clara, the Lawrence Expressway Grade Separation (LEGS) Concept Study was initiated to consider a range of alternatives for design of the grade separation at the three intersections. Three alternative concepts were studied. In the recommended concept, Lawrence Expressway would be depressed under the three study intersections as well as Central Expressway and the Caltrain tracks. Grade separated interchanges at each of the three intersections would include median ramps from the expressway up to the cross-streets with signalized intersections.

Bicycle and pedestrian movements along Lawrence Expressway would be provided in a corridor running adjacent to and slightly elevated above the vehicular roadway. Bicycle and pedestrian movements between the Lawrence Expressway corridor and the cross-streets would occur via two-directional shared ramps on either side of the cross-street. An optional feature of the recommended concept is the provision of bus pullouts along the expressway directly beneath Lawrence Station. Such pullouts, combined with vertical circulation elements such as stairs and elevators, would provide direct access between the station and bus service along the expressway. At the time of plan production, it is unclear whether this feature will be part of final study.

Pedestrian and bicycle crossing distances would be significantly shorter compared to existing conditions in the proposed concept plan. Additionally, vehicle conflicts with pedestrians and bicyclists would be reduced by eliminating a number of right turn movements that currently exist.

Upon receiving support for the concept study, these findings will be included in the County's Expressway Plan 2040 Study.

In the long term, if designed well, initial studies indicate that grade separation of Lawrence Expressway across the Plan area will provide opportunities to a) reduce traffic congestion on local intersections, b) reduce the barrier to east-west movement created by the existing design of the Expressway, c) better balance vehicle access to the Caltrain station while minimizing conflicts with pedestrians, and d) improve through capacity of the Expressway itself. Therefore, grade-separation improvements to the Expressway as it crosses the Plan area are a high priority of this Plan.

If Lawrence Expressway is placed below grade, multiple east-west pedestrian and bicycle connections across the expressway should be provided. In addition, pedestrian and bicycle access to the Caltrain station from both north and south should be prioritized.

It is anticipated that the grade separation project would require significant right-of-way acquisitions on properties with frontage on Lawrence Expressway.

Kifer Road

Kifer Road is a commercial/industrial collector street that stretches across the northern boundary of the plan area (with one property in the Plan area located on the north side of Kifer Road). Kifer Road begins outside the Plan area at Fair Oaks Avenue and continues past the eastern LSAP boundary into the City of Santa Clara. There are four travel lanes with a two-way center turn lane and unbuffered bicycle lanes. The original 2016 LSAP proposed consideration of a road diet on Kifer Road that would remove one travel lane from each side of the road. Due to the increase in housing density as part of the 2021 Plan update and plans for a new circulation system north of the tracks, a road diet on Kifer Road is no longer a priority. The Sense of Place Plan shows specific improvements to Kifer Road, which include wider and continuous sidewalks, bicycle lanes with buffers, and a new landscaped median with left-turn pockets. Right-of-way dedications may be required for these improvements.

The majority of Kifer Road through the study area is shared with the City of Santa Clara, and coordination of roadway redesign must be done in concert with that jurisdiction.

Sonora Court

Sonora Court runs in an east-west direction parallel to and north of the Caltrain tracks. The street is a dead-end local street to vehicle traffic serving a pre-2021 area of low-density industrial/R&D uses that may transition to higher intensity developments over time. A shared-use path (constructed in 2020) runs through private property and connects Kifer Road to the terminus of Sonora Court. Perhaps the most noteworthy aspect of Sonora Court are the very large and handsome Redwood and Cedar street trees that line the street on both sides in a wide planting strip along the curb. These trees are among the most significant natural assets of the entire Plan area. As of 2021, there are no public sidewalks or bicycle lanes on Sonora Court.

The Plan envisions Sonora Court as the main access route to Lawrence Station via San Zeno Way from the new Santa Vittoria Terrace segment of the Loop Road west of Lawrence Expressway, as well as the ingress/egress point of the primary Class I shared-use path access route from Kifer Road to the station. The layout of Sonora Court would be reconfigured to remove on-street parking on one side of the street to accommodate bicycle lanes in both directions. New sidewalks would be constructed behind existing trees at a sufficient distance to preserve the trees.

San Zeno Way/Lawrence Station Road

San Zeno Way and Lawrence Station Road run parallel to Lawrence Expressway on the west and east sides, respectively. These streets provide access to Lawrence Station from Kifer Road, but are too narrow to accommodate bus access to the station. Sonora Court can be accessed from either of these streets, and a small portion of San Zeno Way is used for vehicles, pedestrians, and bicyclists on Sonora Court to access the station. These two streets may be affected by the Lawrence Expressway Grade Separation Project, which may require right-of-way dedications. For this reason, major improvements are not planned on these streets, but existing access will be maintained, with streetscape enhancements applied upon site redevelopment.

Uranium Drive

Uranium Drive is located at the east end of the LSAP, north of the railroad tracks, and forms a T-intersection with Kifer Road. It runs along the boundary between the City of Sunnyvale and the City of Santa Clara. It terminates at a cul-de-sac near the tracks, but there is a connection to Bowers Avenue, a main arterial in Santa Clara, through Mead Avenue. The Sense of Place Plan shows specific improvements to Uranium Drive, which include removal of on-street parking and construction of new sidewalks on the Sunnyvale side (while preserving existing mature trees), buffered bicycle lanes, and minor reductions in travel lane width. Right-of-way dedications may be required for these improvements. As with Kifer Road, improvements to this street must be done in consultation with the City of Santa Clara.

Willow Avenue

Willow Avenue provides roadway access to Lawrence Station from Reed Avenue. The street runs in a northerly direction from Reed Avenue, bending around a few properties to the station. The intersection of Willow Avenue and Reed Avenue is unsignalized due to the nearby signalized intersections at Lawrence Expressway and Timberpine Avenue. Willow Avenue also intersects with Aster Avenue at a stop-controlled, three-way intersection a block south of the tracks. The Sense of Place Plan shows specific improvements to Willow Avenue, which include continuous sidewalks and bicycle lanes, removal of on-street parking in the northbound direction between Reed Avenue and Aster Avenue, a shortened and more visible pedestrian crossing at Reed Avenue, a passenger loading zone at the station, and transition of Class II to Class III bicycle lanes where Willow Avenue turns into French Street underneath Lawrence Expressway in the City of Santa Clara's jurisdiction. Right-of-way dedications may be required for these improvements. Any improvements near French Street will require consultation with the City of Santa Clara.

Aster Avenue

Aster Avenue serves as one of the southern boundaries of the Plan area, and connects Evelyn Avenue to Willow Avenue. The sites at 1155-1175 Aster Avenue are the only LSAP properties along Aster Avenue, and improvements to the street were required as part of the redevelopment project approved in 2019. The improvements include new sidewalks where they do not exist, upgrades to existing bicycle lanes, and a new two-way left turn lane down the center of the street. Crossing improvements to the Willow Avenue and Aster Avenue intersection are also required.

Reed Avenue

Reed Avenue is the southernmost boundary of the Plan area. It is a residential collector street with four travel lanes and a two-way center left turn lane. Reed Avenue only interfaces with a few LSAP properties at Willow Avenue. From an engineering design perspective, Reed Avenue from Evelyn Avenue to Lawrence Expressway has pavement widths that exceed the needs of existing or projected traffic volumes. Options for a potential road diet, protected bicycle lanes, and landscaped median were studied, but ultimately not implemented because of the small road frontage in the Plan area and impediments to turning access from existing residential properties outside the Plan area. The Sense of Place Plan includes enhancements to Reed Avenue such as enhanced sidewalks, wider bicycle lanes with buffers, and reduced travel lane widths.

New Signalized Intersections

Additional signalized intersections in the Plan area are to be studied or were found at the time of the 2021 update to be warranted in order to create controlled crossings for all modes of travel and to facilitate the safe circulation of pedestrians, bicyclists, vehicles and buses. These intersections are:

- Kifer Road and Uranium Drive
- Kifer Road and Commercial Street (warranted as part of a development project)
- Kifer Road and a driveway at 1020 Kifer Road (warranted as part of a development project)

The final details of these new signalized intersections will be determined by the City's Public Works Department.

Circulation Framework Goals

CF-G1 Create a complete, multi-modal transportation network that supports a mixed-use neighborhood throughout the Plan area.

CF-G2 Create a balanced circulation system that is accessible to all modes of travel and does not favor one mode over another.

CF-G3 Create a new Loop Road that provides a variety of vehicular access options and is scaled to bicycles and pedestrians.

CF-G4 Provide improved north-south access throughout the Plan area.

CF-G5 Improve access to bus and rail transit by all modes of travel.

CF-G6 Create streets (both new and improved) that are comfortable and convenient for pedestrians, so walking is a pleasure and accessing residences and businesses is easy.

CF-G7 Make the area in and around the station bicycle-friendly, so residents and employees of all ages and abilities can feel comfortable and secure biking to work, services, and for recreation.

CF-G8 Minimize the impacts of Lawrence Expressway on the Plan area.

Circulation Framework Policies

CF-P1 In the residential areas south of the Caltrain tracks, retain the existing framework of streets and blocks. Improve street connections to the residential areas south of the Caltrain tracks to provide safer street crossings and minor access improvements for pedestrians, bicycles and transit users.

CF-P2 Prioritize the provision of improved north-south access for pedestrians and bicyclists between the northern and the southern portions of the Plan area.

CF-P3 Establish a secondary bicycle/pedestrian network through private property of publicly-accessible north/south and east/west paths.

CF-P4 Study two new railroad track crossings for pedestrians and bicyclists: one at the Calabazas Creek Trail (per study by the City of Santa Clara); the other west of Lawrence Expressway connecting Aster Avenue with the western end of Sonora Court.

CF-P5 In the area north of the Caltrain tracks, develop a Loop Road that will provide direct north-south access to Lawrence Station from Kifer Road on both the east and west sides of Lawrence Expressway.

CF-P6 Locate the Loop Road to align with Corvin Road on the east and to intersect with Kifer Road and Semiconductor Drive/Santa Vittoria Terrace, west of Lawrence Expressway.

CF-P7 Incorporate Sonora Court, San Zeno Way, and Lawrence Station Road in the alignment of the Loop Road.

CF-P8 Provide direct frontage access to Lawrence Station via the Loop Road.

CF-P9 In Santa Vittoria Terrace segment of the Loop Road between Kifer Road and Sonora Court, establish a pedestrian-friendly north-south commercial Main Street with retail and service uses to support the surrounding neighborhood.

CF-P10 To the extent possible, locate the Loop Road and all new shared-use paths and pathways along property lines between parcels in order to minimize impacts on individual properties and building operations and to share benefits between property owners. This will also allow phased development on a parcel-by-parcel basis at the discretion and timing of property owners as they seek to redevelop their land. Allow flexibility in the final locations of the loop road, shared-used paths, and pathways based on specific site conditions.

CF-P11 Provide a wide, landscaped pedestrian sidewalk zone, continuous Class II/Class IIB bicycle lanes, and transit stops continuously along Kifer Road in the Plan area.

CF-P12 Support efforts to grade-separate Lawrence Expressway across the Plan area in order to a) reduce traffic congestion on local intersections, b) reduce the barrier to east-west movement created by the existing design of the Expressway, c) better balance vehicle access to Lawrence Station, while minimizing conflicts with pedestrians, and d) provide direct vertical access to the Lawrence Station, and e) improve through-capacity of the Expressway itself.

CF-P13 Ensure the existing mature street trees along Kifer Road, Uranium Drive, San Zeno Way, and Sonora Court will not be adversely impacted by street improvement projects. Incorporate the mature trees into the landscape improvements of the street.

CF-P14 Where applicable, align new driveways with existing traffic signals or existing driveways on the opposite side of the street.

PEDESTRIAN IMPROVEMENTS

As of 2021, pedestrian activity in the Plan area is constrained, due to the barriers presented by Lawrence Expressway, the railroad tracks, large busy intersections, and the industrial nature of large portions of the Plan area. Providing safe and attractive facilities for pedestrians throughout the area is an important goal of the LSAP, with strong emphasis on providing linkages to Lawrence Station and other destinations such as neighborhood parks, schools and shopping areas.

Pedestrian activity around Lawrence Caltrain station will likely increase as the LSAP lays the foundation for walkable streets throughout the Plan area. The Loop Road, primary shared-use paths, secondary pathways, and rail crossings will provide a walkable network, providing access to all areas of the neighborhood as well as convenient connections to the station from areas both north and south of Kifer Road. Pedestrian improvements to existing streets will be provided to enhance their role as important pedestrian corridors.

Improved pedestrian access in the Plan area will also be facilitated through enhancements to the pedestrian environment including crosswalk enhancements, curb extensions (bulbouts), and wider sidewalks along all major pedestrian corridors. For urban design guidelines related to these pedestrian improvements in the Plan area, see Chapter 6: Urban Design.

CROSSWALK ENHANCEMENTS

Improvements at major intersections throughout the Plan area, particularly along key pedestrian corridors, will enhance mobility for people of all ages and physical conditions. Crosswalk enhancements can include improvements at both signal-controlled and uncontrolled intersections.

Pedestrian enhancements are particularly important at uncontrolled intersections to ensure the visibility of pedestrians to drivers. Improvements to enhance visibility in these situations may include:

- Enhanced crosswalk markings and striping, where determined appropriate by the City's Public Works Department
- Removal of free-right-turns and "pork chop" islands (requires coordination with other jurisdictions, such as the County of Santa Clara for Lawrence Expressway)
- High visibility signs and markings
- Advance yield or stop lines
- Curb extensions or bulbouts
- Rectangular rapid flashing beacons (RRFBs)
- Pedestrian crossing devices, including overhead flashing beacons and pedestrian hybrid beacons (PHB).

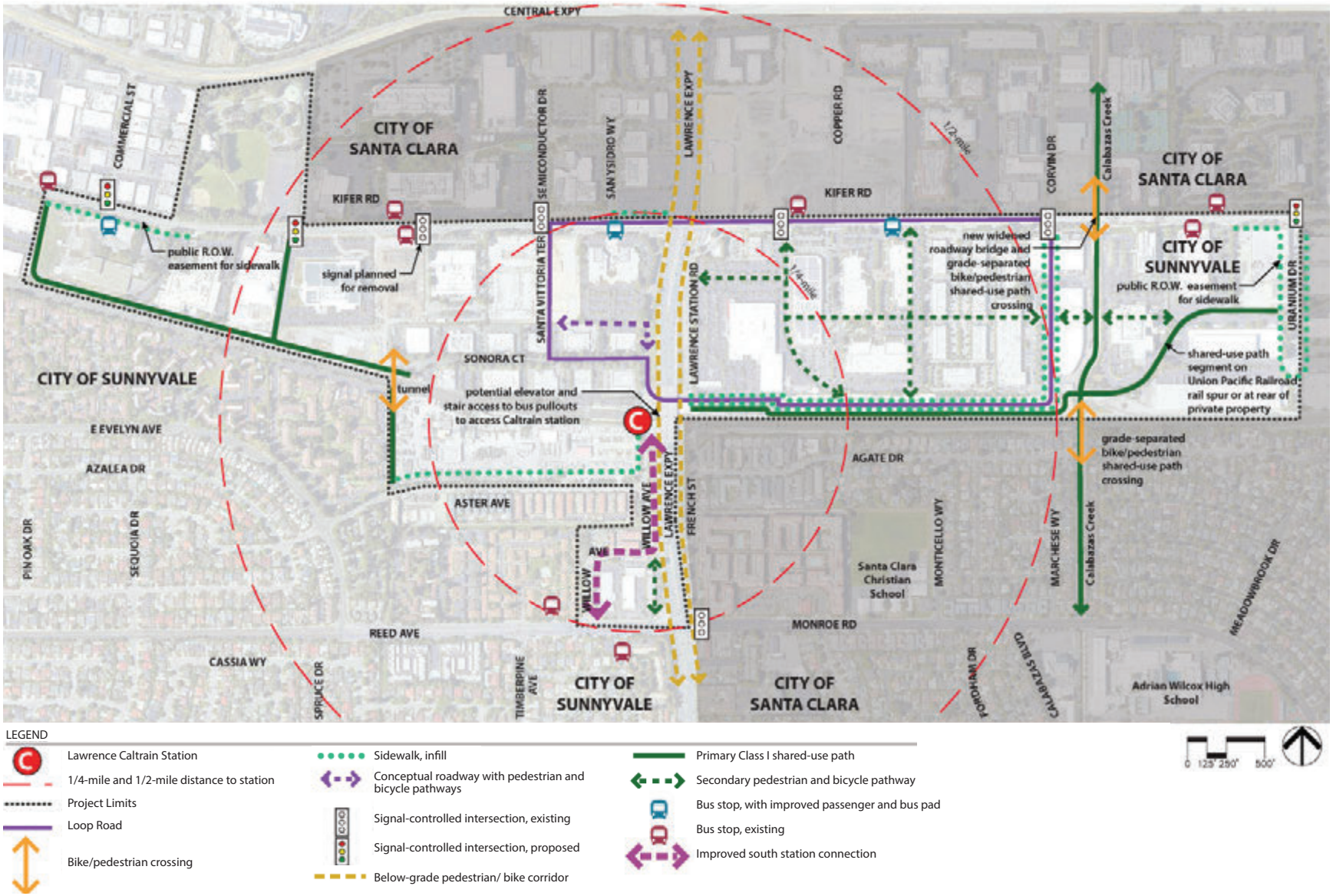
Improved crosswalk markings will be studied at existing and proposed signalized intersections as part of development projects, as well as at all marked crossings at unsignalized locations, potentially including Aster Avenue/Willow Avenue, Willow Avenue/Reed Avenue, Santa Vittoria Terrace/ Kifer Road, and Kifer Road/ Uranium Drive.

CURB EXTENSIONS (BULBOUTS)

A bulbout is an expansion of the width of a sidewalk, typically achieved by expanding into the parking zone. Bulbouts at intersection corners (corner bulbouts) greatly improve the pedestrian environment by providing increased pedestrian waiting area allowing pedestrians to be more visible, reducing pedestrian/vehicle conflict points and reducing street crossing distances and associated crossing times, with no impact on vehicular travel lanes. They are particularly appropriate at intersections with wide crossing distances and high vehicle speeds which create a barrier to safe and easy pedestrian crossings.

Throughout the Plan area, wherever feasible, bulbouts will be provided at the intersection of all new streets and at locations where shared-use paths intersect streets, where feasible. Bulbouts are not feasible on all existing streets, since only streets with on-street parking can be designed to include these features. Bulbouts will be considered along all primary pedestrian corridors where local conditions permit.

Figure 4.2: Pedestrian Circulation System







Clear definition of street and sidewalk areas will be provided throughout the Plan area for all users of the public right-of-way, including pedestrians, bicyclists, and motor vehicles. Curb extensions (corner bulbouts) will enhance the pedestrian zone and improve accessibility for the elderly and disabled.

In the long term, if the Lawrence Expressway Grade Separation (LEGS) project moves forward, the need for bulbout improvements may diminish, depending on how access ramps for the Expressway are designed. If access ramps from Lawrence Expressway to any streets in the Plan area are provided, then bulbout improvements will be needed wherever feasible. Recommendations for long-term improvements for pedestrian connectivity within the Plan area should be provided as part of the LEGS study.

SIDEWALK IMPROVEMENTS

Sidewalks are a critical element in the creation of good pedestrian environments. Wide sidewalks in good condition encourage walking and may provide space for seating and socializing as well as for lighting and landscape amenities such as street trees.

Throughout the Plan area the recommended minimum sidewalk dimension, where right of way widths can accommodate, is ten feet, including a minimum pedestrian travel zone width of six feet and a four-foot minimum landscaped buffer zone, which may include tree wells. These dimensions provide a comfortable travel path width and buffer between the pedestrian and vehicle traffic, but are considered minimums. A wider 15-foot sidewalk is needed near Lawrence Station due to higher pedestrian volumes. See the Streetscape section of Chapter 6: Urban Design for additional sidewalk design considerations.

Remediation of sidewalk gaps and other unsafe conditions in the existing pedestrian network are also needed. These improvements include upgraded sidewalks to a minimum six foot-wide pedestrian travel zone, and street tree planting behind the curb. In particular, sidewalk upgrades are needed in the following locations:

- Both sides of Willow Avenue
- Multiple locations along Kifer Road in the Plan area
- West side of Uranium Drive
- East side of Lawrence Station Road

New sidewalks are also needed along the entire length of Sonora Court and west side of San Zeno Way, but will differ from the ten foot standard with the six-foot wide pedestrian path and four-foot wide tree well. The new sidewalks will be located behind existing mature street trees as to preserve the trees from construction damage.

ADA ACCESSIBILITY

A network of accessible routes is a critical component of any transit-served environment. This is particularly true for disabled or older residents who may desire to walk to destinations but need safe and easy-to-use sidewalks, intersections and pathways.

The most troublesome barriers in the area today are the missing or inadequate sidewalks and intersection corner ramps. These conditions can be found throughout the area, much of which was developed 50 years ago. Investments in new sidewalks and interior pathways by development projects will resolve these issues in all areas of the Plan over time.

All new pedestrian facilities and improvements to existing facilities will be designed to be fully accessible, with appropriate widths, grades, transitions, warning strips, and audio or other crossing indicators, in compliance with the accessibility standards established by the Americans with Disabilities Act (ADA).

Pedestrian Goals

P-G1 Provide safe, inviting, and attractive pedestrian connections for residents, workers and visitors to Lawrence Station and other key destinations in the Plan area.

Pedestrian Policies

P-P1 Promote walking access through new street connections.

P-P2 Facilitate pedestrian access and safety along key pedestrian corridors through pedestrian enhancements, including crosswalk enhancements, curb extensions (bulbouts), and wider sidewalks.

P-P3 Provide enhanced crosswalks on all legs of signalized intersections and at key pedestrian crossing locations.

P-P4 Provide curb extensions (bulbouts) on all new streets, where feasible, and on select existing streets along primary pedestrian corridors.

P-P5 Continue to promote the inclusion of pedestrian improvements along and across Lawrence Expressway as the Lawrence Expressway Grade Separation (LEGS) study is implemented.

P-P6 If Lawrence Expressway is elevated or placed below grade, encourage the provision of multiple east-west connections between Sunnyvale and Santa Clara neighborhoods on each side of the expressway.

P-P7 For new sidewalks in the Plan area, provide a minimum sidewalk width of ten feet inclusive of a minimum paved pedestrian travel zone width of six feet and a landscaped four-foot street buffer zone. Exceptions may be approved by the City's Public Works Department based on site-specific conditions, such as preserving existing mature trees.

P-P8 For new sidewalks in areas near Lawrence Station (Santa Vittoria Terrace and the loop road), provide a minimum sidewalk width of 15 feet inclusive of a five-foot building zone, minimum paved pedestrian travel zone of six feet, and a landscaped four-foot wide street buffer zone. Exceptions may be approved by the City's Public Works Department based on site-specific conditions, such as preserving existing mature trees.

P-P9 Eliminate sidewalk gaps on Willow Avenue, Sonora Court, Uranium Drive (City of Sunnyvale side), and Kifer Road in the Plan area.

P-P10 Ensure that all new and improved pedestrian facilities are designed to comply with ADA standards.

BICYCLE IMPROVEMENTS

Encouraging the use of bicycles for local and inter-neighborhood access is a key priority of the LSAP. Achieving this use can help increase transit ridership, and reduce automobile usage, particularly for local trips. An essential requirement is a network of continuous, interconnected, and safe bicycle facilities that can be used by residents, workers and visitors.

As of 2021, in the Plan area there are few existing bike lanes or other facilities designated for bicycle transportation. Providing safe and direct designated facilities for bicycles within the Plan area is essential in order to improve connections to Lawrence Station, parks, schools, and other local destinations, as well as to adjacent neighborhoods and citywide routes.

Bicycle facilities are designated according to six levels of service or "Classes."

A Class I shared-use path is a path that is located entirely on-street and separated from motor vehicle traffic. Typically, Class I shared-use paths are designed as multi-use facilities, available for use by pedestrians, joggers, baby carriages, and skaters as well as bicycles. To accommodate all users, typical design standards for Class I shared-use paths include an overall width of 12-14 feet, including a hard surface of 8-10 feet wide and a two-foot-wide walking / jogging surface on each side. The City of Sunnyvale standard for Class I shared-use paths is 12-14 feet, inclusive of shoulders. As of 2021, a Class I shared-use path is present along the west side of 1020 Kifer Road, connecting Kifer Road to Sonora Court.

Class II bicycle facilities are striped bicycle lanes, typically on primary arterials and collector streets, designated for the exclusive use of bicyclists. Class IIB bicycle facilities are Class II facilities separated from vehicle traffic by a painted buffer. The buffer provides additional comfort for users by providing space from motor vehicles or parked cars.

Class III bicycle facilities are typically referred to as Bicycle Routes, where bicyclists share the street with vehicular traffic. While they do not have striped lanes, they often have bicycle route marking signs to guide bicyclists through the area, as well as street markings warning motorists of the increased presence of bicyclists and the need to "share the road." Class III Bicycle Routes are typically located on secondary streets with low traffic volumes and design speeds. Class IIIB bicycle facilities are referred to as Bicycle Boulevards which are typically located on calm, local streets where bicyclists have priority but share roadway space with vehicles. There are shared roadway bicycle markings on the pavement as well as traffic calming features such as speed humps and traffic diverters.

Class IV bicycle facilities are referred to as Separated Bikeways where an on-street bikeway is separated from motor vehicle traffic by a curb, median, planters, parking delineators, or other physical barriers.

The Sense of Place Plan illustrates the bicycle network planned for the Plan area. When complete, the bicycle network will provide a continuous system of Class I, Class II, and Class IIB facilities that will allow safe connections throughout the Plan area.

The LSAP bicycle network has three key elements:

- Existing bicycle facilities. Facilities that already exist in and adjacent to the Plan area.
- Planned bicycle facilities. Facilities that are currently in the planning stages or already part of adopted plans by the City of Sunnyvale, the City of Santa Clara or the County of Santa Clara, but are not yet built.
- Proposed bicycle facilities. New facilities proposed by this Plan.

EXISTING BICYCLE FACILITIES

Lawrence Expressway and Central Expressway (Bicycles Permitted)

Both of these major arterial roadways allow bicyclists and currently contain striped bicycle lanes with wide shoulders. While these two facilities do provide long-distance bicycle access, because of the high vehicular speeds and traffic conditions, they are designated by the City of Sunnyvale as "Advanced Bicycle Routes," considered suitable only for the most experienced of bicyclists. Additionally, because Lawrence Expressway is grade-separated at the railroad tracks, access to Lawrence Station by bicycles is inconvenient and indirect.

Kifer Road (Class II)

Kifer Road contains on-street bicycle lanes east and west of Lawrence Expressway, with no striped buffers.

Reed Avenue (Class II)

In Sunnyvale, Reed Avenue currently contains on-street bicycle lanes with no striped buffers, which extend to the city limits at Lawrence Expressway. Bicycle lanes do not extend beyond that point into Santa Clara where Reed Avenue turns into Monroe Street.

Aster Avenue (Class II)

Aster Avenue includes on-street bicycle lanes that provide access to connect to existing on-street bicycle lanes on East Evelyn Avenue, just outside the Plan area.

PLANNED BICYCLE FACILITIES

Calabazas Creek Trail (Class I Shared-Use Path)

As of 2021, the City of Santa Clara is in the planning stages to improve the Calabazas Creek corridor as a linear park that will include a Class I multi-use pedestrian– bicycle trail. Although the trail is mostly in Santa Clara, a portion of it will traverse Sunnyvale in the northeastern quadrant of the Plan Area.

The Calabazas Creek Trail preliminary alignment is located along the west side of Calabazas Creek north of the tracks and on the east side of the creek south of the tracks. This trail will form the backbone of a key north / south bicycle connection and alternative to riding on Lawrence Expressway. The trail will provide linkages to many regional destinations, including the San Tomas Aquino on-street trail east of the Plan area. Therefore, future bicycle facilities that connect to Lawrence Station and neighborhoods southeast of the Plan area will connect to this trail.

Willow Avenue (Class IIB)

As of 2021, the City is in the process of installing on-street bicycle lanes on Willow Avenue from Reed Avenue to Aster Avenue. Also in 2021, a continuation of the bicycle lanes is in progress from Aster Avenue to Lawrence Station as part of the redevelopment project at 1155-1175 Aster Avenue.

PROPOSED BICYCLE FACILITIES

The Sense of Place Plan includes improvements to close the gaps in the existing and planned bicycle network through the development of an interconnected system of Class I and Class II facilities.

Class I Shared-Use Path Improvements

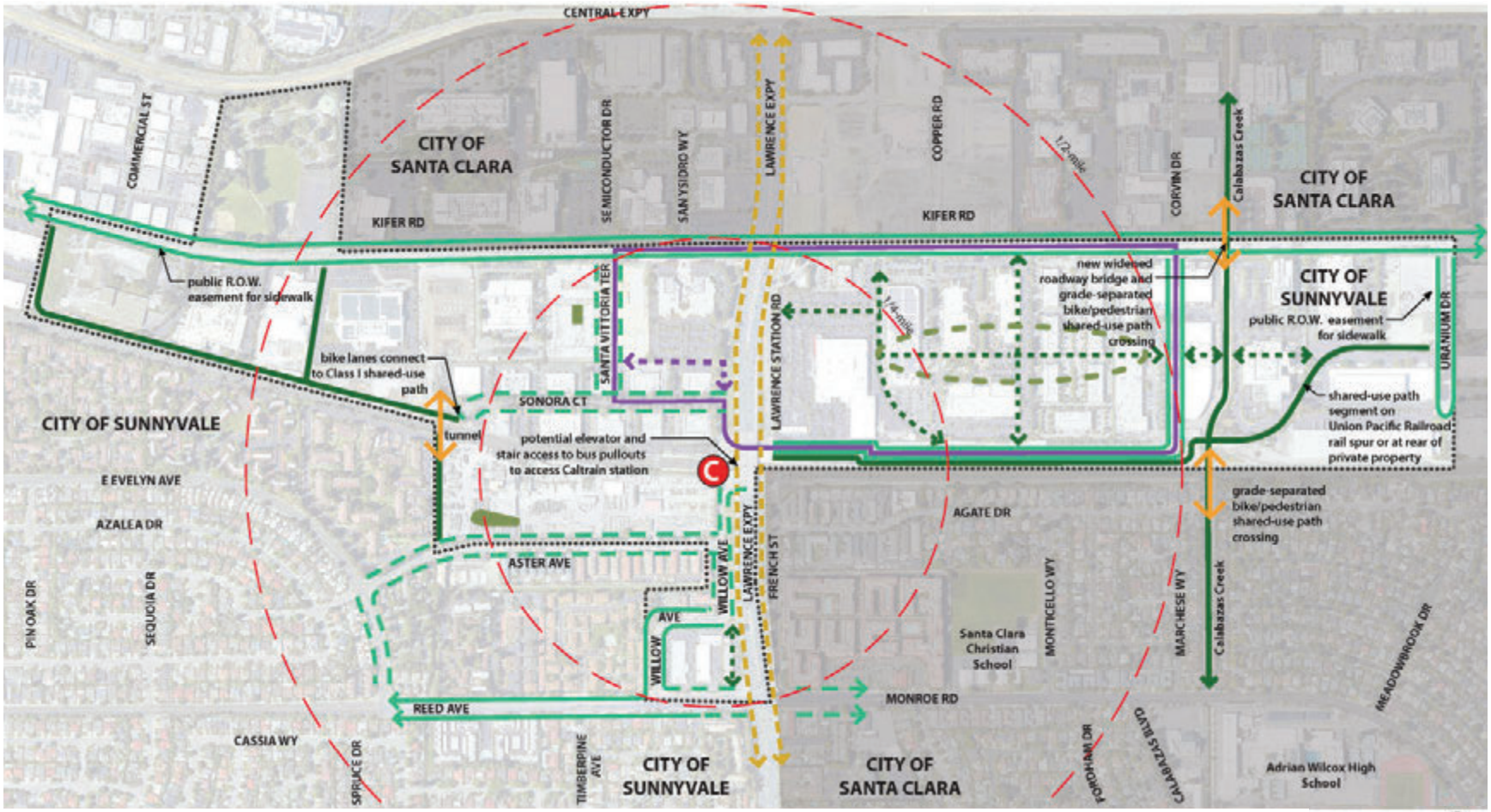
Capitalizing on the planned Calabazas Creek Trail east of Lawrence Expressway and a recently constructed shared-use path connecting Kifer Road to Sonora Court west of Lawrence Expressway, the Class I shared-use path network will be expanded in the Lawrence Station Plan area. This will include four important legs:

- A new north-south, and east-west Class I shared-use path would link Kifer Road near Commercial Street to the recently constructed shared-use path on the property at 1020 Kifer Road, which connects to Sonora Court. From Sonora Court, bicycles can access the station via San Zeno Way.



The pedestrian path that runs between Reed Avenue and Cassia Way provides important mid-block connectivity for pedestrians. Additional such pathways (with improved landscaping and lighting) will be provided in all new development areas.

Figure 4.3: Bicycle Framework



- A new east-west Class I shared-use path would begin at the east end of the Plan area at Uranium Drive, cross over Calabazas Creek and connect with the future Calabazas Creek trail, then extend parallel to the tracks out to Lawrence Station Road, directly to the station.
- A secondary bicycle and pedestrian pathway is envisioned to extend from the new primary Class I shared-use path near Uranium Drive to connect with the new Calabazas Creek trail.
- A new north-south Class I shared-use path would link Aster Avenue, crossing the rail line, and connect to Sonora Court, as discussed in the New Circulation Improvements section.

Class II and Class IIB Bicycle Improvements

On-street Class II or Class IIB bicycle lanes will be provided to close gaps between existing bicycle lanes on existing streets as well as provide bike lanes along new primary street corridors, including the following:

- Loop Road. Class IIB buffered bicycle lanes along the Loop Road will allow bicyclists to access the station and areas between the tracks and Kifer Road, both east and west of Lawrence Expressway.
- Uranium Drive. Class IIB buffered bicycle lanes will be provided on both the Sunnyvale and Santa Clara sides of the street, linking Kifer Road to Mead Avenue in Santa Clara.
- Sonora Court. Class II bicycle lanes will be provided on both sides of Sonora Court, linking the new Class I shared-use path at the terminus to San Zeno Way, and to the station. Buffers are not proposed due to right-of-way constraints.
- Reed Avenue. Class IIB buffered bicycle lanes will be provided on both sides of Reed Avenue, at least in the Plan area boundary between Willow Avenue and Lawrence Expressway, and likely outside of the Plan area boundary to Evelyn Avenue or Wolfe Road.
- Willow Avenue. Class IIB bicycle lane buffers would be added onto existing bicycle lanes as right-of-way becomes available as part of future site redevelopment at Willow Avenue and Reed Avenue.

Class III Bicycle Facilities

It is not envisioned that any street or circulation corridors will be designated as a Bicycle Route at this time. However, the City of Santa Clara is planning for Class III facilities on French Street, which transitions from Willow Avenue at the city boundary beneath the Lawrence Expressway overpass.

Open Space Connections

The Sense of Place Plan indicates, in a conceptual way, the location of new neighborhood open spaces in the future development areas of the Plan and the public linkages for pedestrian and bicycles to these open spaces. These open space locations and connections are conceptual and do not represent final specific locations. However, ensuring that all new open spaces are connected to publicly accessible streets, bicycle facilities and pedestrian linkages is an essential ingredient of the Plan and will be a required feature of future development proposals. Open spaces may be publicly dedicated or privately owned and maintained with public access easements.

Intersection Improvements

On streets with bicycle facilities, bicycle detection loops will be installed at signalized intersections to allow bicyclists to activate traffic signals without the need to dismount to use pedestrian push buttons and crosswalks. Detection of bicyclists at signalized intersections will also improve efficiency, decrease delay to bicyclists, and discourage red light running by bicyclists without causing inordinate delays to motorists.

Signage and Wayfinding

All Class I and Class II/Class IIB bicycle facilities will have directional signage and bicycle route marking signs directing bicyclists to Lawrence Station, parks, schools and other local and inter-neighborhood destinations.

Bicycle Parking and Storage

Together with perceived lack of safety riding on the streets, lack of secure bicycle parking is often cited in surveys as one of the top deterrents to bicycling. The provision of secure bicycle parking is, therefore, as essential to increasing bicycle ridership as the provision of safe bicycle lanes and routes. Bicycle parking and storage infrastructure is typically installed as part of a development project approved for property redevelopment.

The City of Sunnyvale has bicycle parking standards that are appropriate for the Plan area. Additionally, the Santa Clara Valley Transit Authority (VTA) has published bicycle parking guidelines that include elements appropriate for the Plan area. The City of Sunnyvale's bicycle parking supply requirements for the Plan area include the following:

Long-term storage (>2 hours): Provide Class I bicycle parking, consisting of lockers, rooms with key access, or attended/unattended bike stations. This type of storage is appropriate at Lawrence Station, multi-family residential developments, and places of work.

Short-term storage (up to 2 hours): Provide Class II bicycle parking, consisting of racks with two points of contact that allow for locking at least one wheel as well as the bicycle frame. Bicycle racks are most appropriate to serve visitors to retail establishments, libraries, medical offices, office buildings, and residential buildings. Locate bicycle racks such that pedestrian circulation is not adversely impacted, security is maximized (i.e., in well-lit, visible areas with high volumes of foot traffic), and with a layout that maximizes parking capacity.

See Chapter 19.35 of the Municipal Code for minimum Class I and Class II bicycle parking requirements in the Plan area.

BICYCLE SHARING

Over time, as the Plan area becomes a more important destination in Sunnyvale, a bicycle sharing program could be initiated. A bicycle sharing system consists of a fleet of specially-designed, heavy- duty, durable bicycles that are locked into a network of docking stations located throughout a region. Bicycles can be rented from, and returned to, any station in the system, creating an efficient network with many possible combinations of start and end points.

Bicycle Goals

B-G1 Encourage the use of bicycles for local and inter-neighborhood access by residents, workers, and visitors of all ages and abilities.

Bicycle Policies

B-P1 Require property development to provide Class I, Class II and Class IIB bicycle facilities to fill in the gaps in the existing and planned bicycle network.

B-P2 Provide direct Class I, Class II, and Class IIB bicycle connections to the future Calabazas Creek Trail.

B-P3 Provide two new primary Class I shared-use paths at the east and west ends of the LSAP boundaries with access to Lawrence Station.

B-P4 Provide Class IIB (or Class II where determined by the City) bicycle access on the Loop Road.

B-P5 Connect new neighborhood open spaces with publicly-accessible streets, bicycle facilities and pedestrian linkages.

B-P6 Install bicycle detection loops at signalized intersections.

B-P7 Provide Class I or Class II bicycle parking per LSAP bicycle parking requirements.

PUBLIC TRANSIT

Commuter heavy rail (Caltrain), local bus, and scheduled private shuttles currently serve the Plan area. See Figure 4.4 for the existing transit network.

COMMUTER HEAVY RAIL (CALTRAIN): LAWRENCE STATION

Data from the Caltrain 2019 Annual Passenger Count indicates Lawrence Station served 1,962 average mid-weekday passengers, including 1,004 onboarding and 958 offboarding. Historical ridership data indicates that the average weekday ridership at the station reached over 2,500 in 2001, indicating the station has the capacity to serve higher numbers of passengers than current ridership.

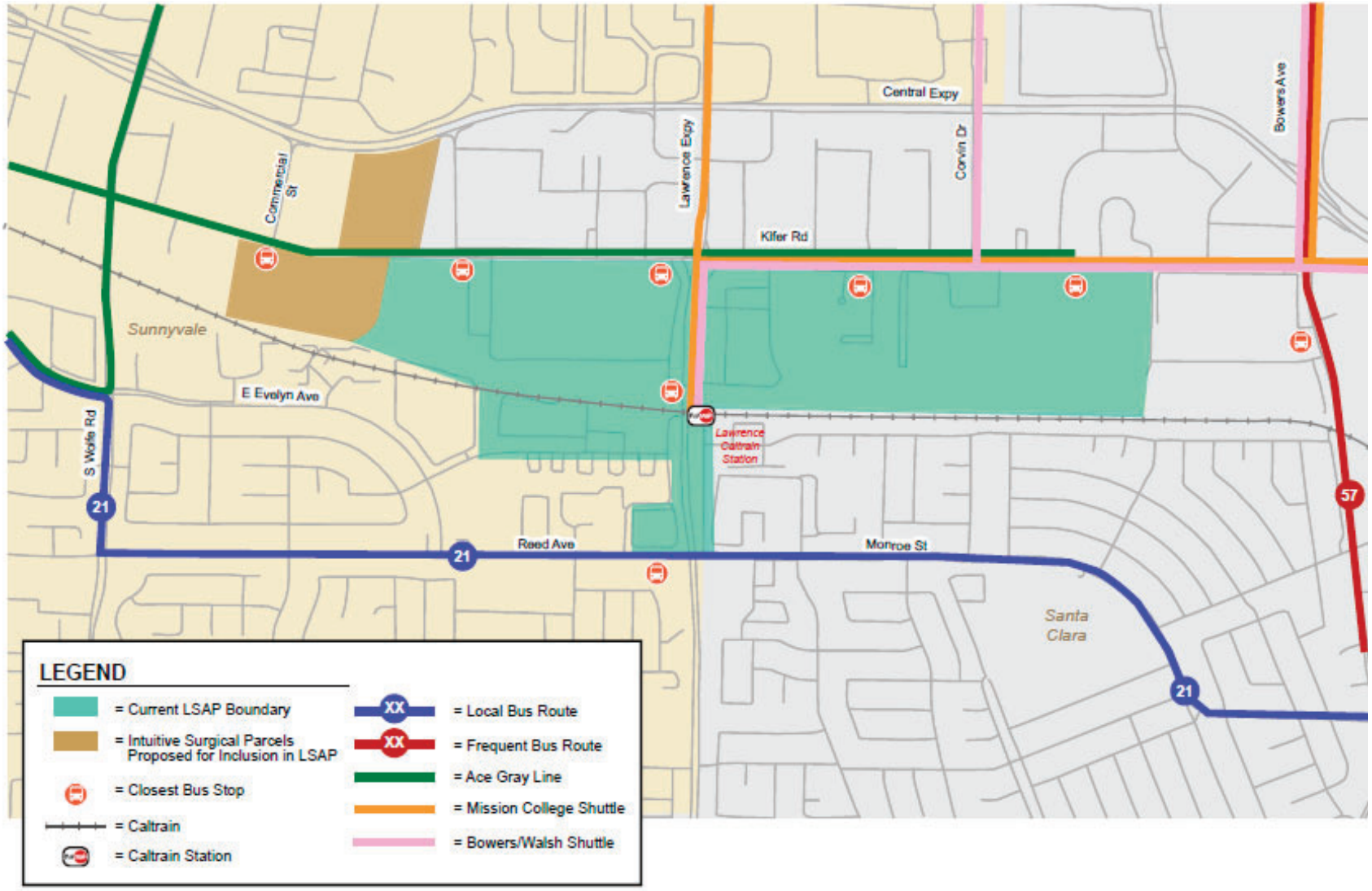
Diversifying land uses and increasing densities will support the long-term viability of the Caltrain station. Depending on the specific characteristics of land uses ultimately developed near the station, daily transit ridership is estimated to increase to levels comparable to those at the California Avenue Caltrain station in Palo Alto, a station that supports a range of users, including visitors and employees of the California Avenue retail district. There is potential for the Lawrence Caltrain Station area to similarly become activated as the station and its surrounding mix of land uses generates a range of users and activities.

Lawrence Caltrain Station was reconstructed in recent years and already has many station amenities, including covered benches, adequate signage, schedule information, ticket vending machines, a public pay phone, real-time message boards, shuttle access, and bicycle and vehicle parking. As the Plan area develops and access to the station is improved, increased ridership will likely warrant the provision of additional amenities, such as more bicycle parking.

LOCAL BUS SERVICE

In the Plan area, bus service is provided by the Santa Clara Valley Transportation Authority (VTA). However, VTA buses do not serve Lawrence Station directly, due to existing access issues. The only bus stop in the Plan area is the local-serving Route #21, with a stop approximately 1⁄4-mile from the station at the corner of Reed Avenue and Willow Avenue. Outside the Plan area is the local-serving Route 20 at Arques Avenue and Lawrence Expressway, just less than a mile from the station. The next nearest stop outside the plan area is on the frequent Route 57 at Bowers Avenue and Kifer Road in the City of Santa Clara, which is 1 ¼ miles from the station.

Figure 4.4: Existing Transit Network



COMMUTER SHUTTLES

While no VTA bus routes directly access the station, there are two public Caltrain shuttles that provide service, including:

- Bowers-Walsh: Between Lawrence Station and Bowers/ Walsh area office buildings during commute periods.
- Mission: Between Lawrence Station and Mission College and Intel areas during commute hours.

The project area is also served by VTAs Altamont Commuter Express (ACE) Gray Line South Sunnyvale Shuttle that provides directional shuttle service (eastbound in AM and westbound in PM) along Kifer Road and connects the project area to the Great America ACE train station in Santa Clara.

In addition to the public shuttles, several private shuttles provide service between Lawrence Station and major employers within the Cities of Sunnyvale and Santa Clara.

ACCOMMODATING FUTURE TRANSIT

The limited bus transit connections within the Lawrence Station area are a result of low levels of demand and disconnected roadway access from nearby major roadway corridors. While in 2021, the VTA had no plan to add bus transit service within the Plan area, the agency will re-evaluate the need for new service as access to the station improves, new development proceeds and demand increases. As of 2021, Caltrain is planning additional commuter rail service to the station in conjunction with electrified operations. The higher intensity office/R&D, retail, and residential land uses established in this Plan will create an increase in transit demand. Therefore, the LSAP includes planning and design measures that will allow both bus and rail transit service to be expanded in the future as demand warrants.

The increased roadway connectivity and mixed land uses will have a positive effect on the potential for direct bus access to the area. Potential transit connections south of the Plan area include re-routing VTA Route #21 on Reed Avenue/Monroe Street to the southbound platform.

North of the tracks, the Loop Road greatly increases the potential for transit connectivity to the northside of the station. Opportunities to signalize



intersections, as summarized earlier in this chapter, should be evaluated in coordination with potential transit route accessibility.

Bus Transit Stop Improvements

In addition to potential bus route modifications, new and improved bus transit amenities will enhance the experience for transit patrons. Most existing bus stops along Kifer Road and Reed Avenue have minimal stop amenities and frequently only include a bus stop sign, without furnishings or shelters. Therefore, bus pull-outs, and added stop amenities such as shelters, furnishings, lighting and signage will be provided along the Loop Road, Kifer Road, Reed Avenue, and all other potential future bus routes wherever local conditions allow.

Public Transit Goals

PT-G1 Improved public transit in the Plan area, including both commuter rail and bus service.

Public Transit Policies

PT-P1 Work with Caltrain to reevaluate the adequacy of amenities, such as bicycle parking, seating, and shelters, at Lawrence Station as ridership numbers increase.

PT-P2 Work with VTA to evaluate the requirements for new bus service as access improves, development proceeds and demand increases.

PT-P3 Work withg VTA to assess the potential re-routing of existing bus service to directly reach Lawrence Station.

PT-P4 Provide bus stops with bus pull-outs, shelters, furnishings, lighting and signage along the Loop Road, Kifer Road, Reed Avenue and all other future bus transit streets in the Plan area.

PT-P5 Locate bus stops on the Loop Road approximately every 1⁄4-mile (1,300 feet) or per recommendation from the VTA.

PARKING

The provision and management of the parking supply in the Lawrence Station Plan area is closely associated with how people travel to and from the area. Parking should be considered not in isolation, but in conjunction with pedestrian and bicycle access, transit availability, and land use decisions. In addition, while the implementation of individual parking strategies can contribute to the overall success of the transportation element for the project, the use of complementary and coordinated strategies will compound benefits.

Table 4.1 describes parking strategies that will be implemented as the Plan area is developed over time.

Parking strategies are organized into the following three sections:

- Parking Supply
- Parking Management Strategies
- Transportation Demand Management (TDM) Programs.

It is critical that parking supply in the Plan area be effectively managed and not overbuilt in the future. The provision and management of parking should be such that it:

- Does not create an overabundance of parking, which may end up as an invitation to driving.
- Discourages auto trips for those who have an option to travel by other modes, including walking, bicycling and transit.
- Serves those who must drive and might not make the trip if they perceive that parking will not be available when they arrive.

Existing Parking Supply

Historically, there is an overabundance of on- and off-street parking in the Plan area. The 122-space Lawrence Station parking lot, which charges a fee for parking, is typically only 10-20 percent occupied. In order to avoid paying the parking fee, additional station-related park-and-ride demand is met on-street, particularly on Sonora Court. Despite the use of on-street parking

by Caltrain riders, on-site observations indicate there is sufficient on-street parking for other drivers.

The overabundant parking supply in the Plan area provides an opportunity to manage future supply so that it promotes and supports transit and more closely relates to the needs of employers and residents of the area.

Parking Supply Requirements

Parking requirements for development within the Plan area are codified in Chapter 19.35 of the Zoning Code. Additional reductions in parking requirements will be allowed based on the specific characteristics of the supply in question (e.g., senior housing, affordable housing) and on the incorporation of parking management strategies.

Applying the LSAP Parking Requirements in Chapter 19.35 of the Zoning Code could potentially reduce parking needed by up to 50%. This would amount to a potential savings of land or structured parking floors of approximately 208 acres that could be used for other purposes and also reduce development costs.

PARKING MANAGEMENT STRATEGIES

Shared Parking

Restricting the availability of any parking pool to a single use (i.e. only residential or only office), results in poor utilization of the parking supply. The LSAP provides a great opportunity for the implementation of a shared parking scheme that can greatly reduce parking requirements on an individual basis. For example, office/industrial/R&D parking lots and garages see peak parking demand during the daytime whereas residential parking is most needed in the evening, nights and weekends. Rather than providing distinct parking supplies to meet these complementary uses, the same parking supply can be used by employees during the day and residents in the evenings and at night, significantly reducing parking requirements for both land uses and making their development more economically feasible.

Shared parking will be phased into the Plan area as development takes place. Initial developments will need to provide parking at the higher end of the rates as outlined in Chapter 19.35 of the Zoning Code, since they will have less opportunity for shared parking in the initial development phases. Later developments can provide less parking and use available shared parking supply.

Shared parking requirements should be in place ahead of development and be implemented as nearby complementary land uses come online. If possible, it would be beneficial to phase development so that complementary projects are completed around the same time, so that shared parking can be implemented as soon as new projects are occupied.

Table 4.1: Parking Strategies

Priority	Parking Strategy
Short-Term	*All land uses:* • *Reduce the requirements for off-street parking (reflected in Chapter 19.35 of the Sunnyvale Municipal Code).* • *Provide bicycle parking.* • *Unbundle parking costs from property costs.* *Lawrence Station:* • *Work with Caltrain to find the appropriate price to attract drivers to the station parking lot and improve its utilization.* *Retail, Office/R&D, Industrial:* • *Allow credits for TDM Program demonstrating high alternative mode share and corresponding to lower parking requirements on a case-by-case basis.*
Mid- and Long-Term	*Residential, Office/R&D, Industrial:* • *Encourage shared parking.* *Residential:* • *Encourage car sharing.*

Structured Parking

Where feasible, parking should be provided in structures rather than surface lots to avoid developments surrounded by parking lots. Although structures

are more expensive, there are potential cost efficiencies associated with constructing consolidated, shared parking structures, or constructing parking structures concurrent with a new development. Additionally, parking structures allow for higher densities to be built, especially on smaller sites.

Planning for a parking structure should be considered when a shared parking analysis for proposed customer-serving uses (retail, restaurant) indicates that there are insufficient parking spaces (either surface or structured) located within a 1⁄4-mile radius of the development to serve the estimated parking demand.

Parking structures can also be integrated into housing as well as retail and office/industrial/R&D uses. However, the implementation of shared parking garages should only occur when there is substantial densification of the Plan area and a focus of uses (such as retail) that triggers the need for an adjacent high-capacity parking facility.

Unbundling

There is frequently a mismatch between the fixed number of parking spaces provided with a unit of housing and the household's needs. Furthermore, a fixed parking provision raises the cost of housing and hides the true parking cost.

"Unbundling" parking is a strategy that sells or rents parking separately from the price of a residence or commercial lease. Unbundling parking from property costs provides transparency to the cost of parking so that people can make better informed decisions about housing and car ownership costs. It also makes better use of the parking supply by allowing parking spaces that would have been allocated to carless households to be used by households with additional cars. Unbundling is also complementary to shared parking since any excess supply of spaces can be leased or rented to outside entities on a short-term basis, provided every unit has the option to access to at least one space. As of 2021, unbundled parking is not allowed elsewhere in the City, but the Plan area provides an excellent opportunity for trial utilization.

In the case of commercial tenants, commercial leases can unbundle parking (parking spaces are leased separately rather than automatically included with building space), and list parking as a separate line item (parking rents are listed separately from building rents).

Car Sharing

Car sharing is a complementary strategy to the reduction of the parking supply because it meets the needs of people who typically drive a car infrequently and leave it parked the rest of the time. Empirical research has found that the availability of shared cars can significantly reduce car ownership, which has a direct impact on the need to provide parking. Thus, encouraging car sharing among employees and residents is an important strategy in the LSAP.

Lawrence Station is an excellent initial opportunity site for a small number of car sharing spaces. For comparison, car sharing is currently provided at the Redwood City station (three spaces), the downtown Palo Alto station (two spaces), and the San Jose Diridon station (two spaces). Initially, one car sharing spot for Lawrence Station would be appropriate. As development occurs and ridership increases, the number of car sharing spaces can increase to two or even three spaces, depending upon demand.

Parking Pricing

Parking pricing is the most effective mechanism for managing parking demand for a fixed parking supply and can be implemented at any time. It can be used to optimize the use of parking resources by preventing auto storage and commuter parking while promoting turnover that benefits businesses, and provides flexibility for adjustment as parking demand changes over time. It is equitable because only those who use the parking pay for parking, and the resulting revenues can be used to improve streets and other aspects of the transportation system. Finally, although its most obvious application is at on-street parking locations typically adjacent to retail, it can be used effectively in connection with all land uses, and is most effective when the on-street pricing is coordinated with the on -street pricing based on the demand for each type of supply.

Parking pricing schemes should make paying for parking easy and convenient so that the only deterrent to parking is the parking rate in areas where demand warrants. Parking pricing works most effectively when parking demand is high; thus parking pricing should only be implemented as the Plan area develops and demand for parking increases.

Parking pricing is already in place at Lawrence Station. However, due to the abundance of unrestricted free on-street parking nearby, Caltrain's current parking supply is underutilized as riders look for free opportunities to park around the station. Thus in the near-term, time restrictions on the streets immediately surrounding the station would help alleviate on-street parking by Caltrain riders and increase utilization of the Caltrain parking lot.

Residential Permit Parking (RPP)

RPP programs can be considered as a mechanism to regulate on-street parking only if needed. Such programs are counter to optimized utilization of the fixed parking supply, because they restrict who can park and at what times. In addition, since such programs typically place restrictions on how long non-residents can park, their enforcement tends to be inefficient because parking control officers must establish that a car has been parked for a certain period of time before a citation can be issued. Consider charging non-residents for parking in RPP zones rather than restricting their stay. An unpaid parking meter is much easier to enforce than a time limit.

The program could also be designed carefully to prevent underutilization of one type of parking and oversubscription elsewhere. For example, the residential parking permits should not be given to residents of developments where there are parking spaces available for rent or purchase. This will ensure that the on-street parking remains available for short-term visitors rather than being used for long-term auto storage.

RPP restrictions and the provision of additional parking at Lawrence Station should be implemented only if and when empirical data demonstrates an unambiguous need for such measures.

Parking Goals

PK-G1 Reduce future parking supply so that it promotes and supports transit ridership as well as the needs of local retail, employment and residential uses.

Parking Policies

PK-P1 Maintain specific parking requirements for all new development in the Plan area.

PK-P2 Consider forming a Parking Management District for the Plan area.

PK-P3 Establish a shared parking program in advance of development, with the following features:

a. Require developers to submit a shared parking analysis.

b. Allow new development to either provide sufficient off-street parking supply to meet the incremental increase in parking demand associated with the proposed project, and/or lease parking spaces from earlier parcel owners who have available parking located adjacent to the development parcel (within 1/4 mile radius or closer).

c. Require new residential development to provide no more than 2 parking spaces per residential unit for exclusive use by residents. Additional parking supply that may be needed for the development shall be provided in shared facilities that will be required to be open to all users, including transit station patrons.

d. Price shared parking facilities according to market conditions, and encourage management by either the parcel owner, or the Plan area Parking Management District.

e. Consider allowing on-street parking spaces to be added as part of the development of a parcel to count towards a project's required shared parking supply, but do not allow it to be used as reserved spaces for residential uses.

f. Verify the accuracy of the parking demand estimates of the shared parking model based on interim parking demand counts over the course of the build-out of the Plan area. Conduct parking counts during the peak parking demand period as identified in the shared parking analysis: weekday afternoons in December. Parking ratios in the shared parking model shall be calibrated to the parking demand counts if there is a significant discrepancy.

PK-P4 Plan for structured parking as demand increases. This can be in the form of a stand-alone parking structure for nearby users, or shared parking integrated with residential or office/R&D uses.

PK-P5 Unbundle parking costs from property or lease costs, provided that every unit has the option to access at least one parking space.

PK-P6 Work with Caltrain to provide parking spaces at Lawrence Station for the exclusive use of car sharing vehicles.

PK-P7 Implement a parking pricing system as demand for parking in the area increases.

PK-P8 Establish a residential parking permit (RPP) program in the Plan area in the future if / when analysis demonstrates a need for such measures, and if funded by property owners.

TRANSPORTATION DEMAND MANAGEMENT

Jurisdictions in the Bay Area increasingly require Transportation Demand Management (TDM) strategies designed to reduce the number of people driving alone to and from their place of business (and in some cases residence) in favor of walking, bicycling, taking transit or shuttles, carpooling or vanpooling. Common TDM strategies include providing shuttle service, providing bicycle parking and "end-of-trip" facilities (showers, lockers), marketing campaigns to discourage auto trips, offering transit passes to employees, providing dedicated carpool/vanpool parking spaces, offering cash in place of a free parking space (parking cash-out), and charging for parking.

Currently, Sunnyvale has a codified TDM requirement for higher intensity office/industrial development, and multi-family residential development. As a condition of project approval, other sites have been required to implement a TDM program. Many large employers have had experience with TDM and understand the benefits of implementing such a program. Given the high proportion of auto usage in Sunnyvale, there is a great opportunity to realize benefits from TDM programs.

New nonresidential development in the Plan area will be required to implement a TDM program with robust monitoring measures. For example, office/R&D developments will be required to meet a daily trip reduction target of at least 20 percent and a peak hour trip reduction target of at least 35 percent. TDM trip reduction for residential and retail uses is more difficult to achieve than for office uses. However, residential and retail projects will also be required to develop TDM programs and meet specific targets. Residential uses will be required to meet the adopted Multi-Family Residential TDM program goals.

Transportation Demand Management (TDM) Goals

TDM-G1 Reduce vehicle trips in the Lawrence Station Plan area through TDM programs.

Transportation Demand Management Policies

TDM-P1 Encourage businesses and property owners to collaborate on area-wide TDM strategies for their sites in the Plan area.

TDM-P2 Achieve a daily trip reduction target of 20 percent and a peak hour trip reduction target of 35 percent for new Office/R&D development.

TDM-P3 Achieve a peak hour trip reduction of 5% for new retail development.

TDM-P4 Encourage the provision of the following features as part of a TDM program for the Plan area:

a. Provide shuttle service

b. Provide bicycle parking and end-of-trip facilities (e.g., lockers, showers)

c. Create marketing campaigns to discourage auto trips

d. Offer free transit passes to employees

e. Dedicate carpool/vanpool parking spaces

f. Offer cash in place of a free parking space (parking cash-out)

g. GreenTrip registration.



5 UTILITIES AND PUBLIC SERVICES

Public infrastructure, in the form of utilities and public services, is a very important part of the long-term success of a neighborhood, district or city. These facilities must not only be carefully planned for but they must also be provided in a timely manner, whenever possible in anticipation of growth rather than lagging behind and in response to growth.



5 UTILITIES AND PUBLIC SERVICES

Public utilities and public services such as schools and emergency services are an important part of the long-term success of a neighborhood, district or city. These facilities must not only be carefully planned for but they must also be provided in a timely manner in anticipation of growth. This section outlines the basic components of public infrastructure and public services that will be needed in the Plan area.

UTILITY INFRASTRUCTURE

The capacity of existing city-owned utilities to accommodate planned growth was assessed for the Plan area in 2015 for the original LSAP and in 2021 for the LSAP update. Estimated improvements that may be required are discussed in the sections that follow. Analysis of proposed conditions is limited to storm drainage, potable water supply and wastewater management within the incorporated boundary of Sunnyvale. Other utilities, including telephone, cable, gas and electric infrastructure are supplied by their respective private franchise operators and are not a part of this discussion.

STORM DRAINAGE

The City of Sunnyvale owns and maintains the local storm drainage facilities in the Plan area. These local systems discharge into a regional system, under the jurisdiction of Valley Water, formerly known as the Santa Clara Valley Water District (SCVWD), which conveys storm run-off to the San Francisco Bay.

In the Plan area, Valley Water facilities include the El Camino Storm Drain Channel (ECSDC) and Calabazas Creek. From the residential neighborhood located to the southwest of the Plan area, the ECSDC flows northward and then eastward, running along the railroad's southern edge before connecting to Calabazas Creek, approximately one-half-mile east of Lawrence Station. Calabazas Creek flows from south to north connecting into the San Tomas

Aquino Creek which empties into Guadalupe Slough approximately 3-miles north of the ECSDC confluence.

Planned Drainage Improvements

Drainage improvements within the Plan area will be required to conform to the parameters set forth by the City and Valley Water. The City's development policies address storm drainpipe design for capacity and quality. Storm drains are to be sized per the current Santa Clara County Drainage Manual. Storm drains are required to accommodate a 10-year design storm and post-development flow rates cannot exceed pre-development flow-rates, on a project-by-project basis.

As of 2021, new developments that create or replace more than 10,000 square feet of impervious surface must comply with Provision C.3 of the Municipal Regional Permit (MRP) and with California State Water Board requirements. The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) has published a "C.3 Stormwater Handbook" that assists developers in meeting local municipal and State regulations through the use of Low Impact Design (LID) strategies.

The Plan area is underlain by soils with low percolation rates. Therefore, infiltration is generally not practical. In such situations, commonly-accepted LID strategies include treatment methods such as bio-retention basins and flow-through planters, as well as green roofs, media filtration devices and utilization of pervious surfaces.

While it is typical for individual, private projects to incorporate treatment systems within their individual sites on a project-by-project basis, provisions for treatment of run-off from either new or newly widened public streets will also be required.

The Plan is developed land with high percentages of impervious surfaces that direct storm water runoff directly into the public storm drain infrastructure with little to no retention or treatment. As projects are implemented that comply with the MRP requirements, it is anticipated that the overall percentage of impervious surface within the Plan area will decrease, so additional mitigations for storm water peak flow conveyance, either incorporation of detention facilities to attenuate peak flows, or upsizing of existing conveyance facilities to accommodate increased peak flows, is not anticipated.

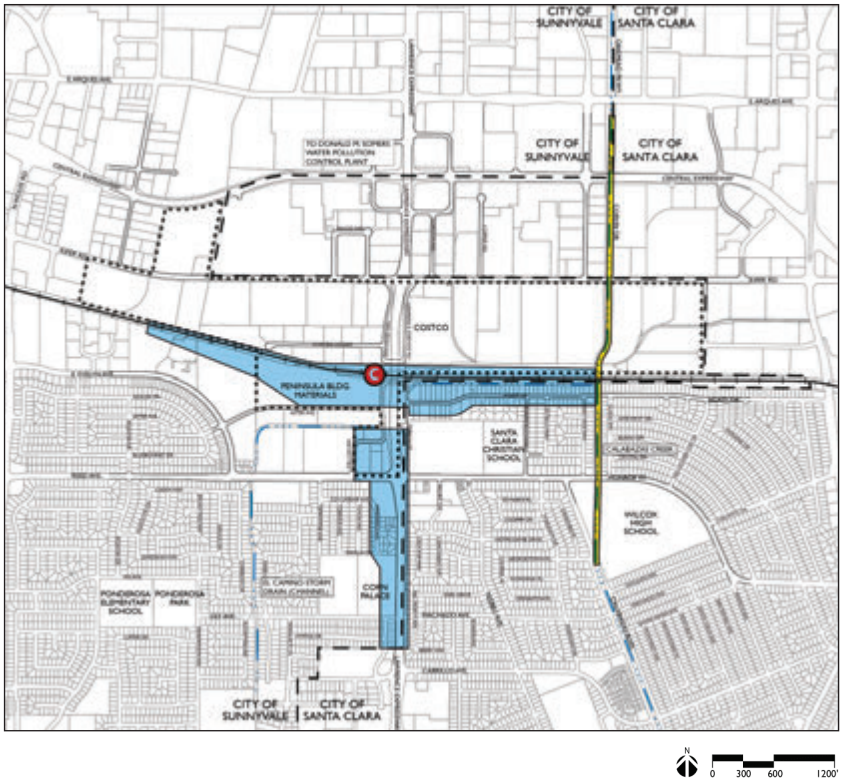
Local storm drainage infrastructure that collects and conveys runoff to major storm drain systems will need to be reconfigured to accommodate redevelopment. New streets and shared-use paths/pathways serving new development will contain new storm drainage systems that will comply with City of Sunnyvale design standards and specifications.

Flood Plain Management

Areas along the southern portion of Lawrence Expressway and near the railroad right-of-way are identified (as of 2021) by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) to be within Zone AO, as is shown in Figure 5.1. These properties have a 1% or greater chance of flooding each year (often referred to as "the 100-year event"), with an average inundation depth of 1-to-3-feet.

The sites at 1155-1175 Aster Avenue (former Calstone/Peninsula Building Materials site) is within Zone AO, and the redevelopment project raised the grades by importing fill material, by an average of 1.5 feet to elevate the building floor and mechanical features above the Base Flood Elevation per City policy on construction within Flood Zones. A Conditional Letter of Map Revision by Fill (CLOMR-F) was required to ensure that fill within the existing flood plain does not adversely affect other properties.

Figure 5.1: Flood Plain



POTABLE WATER

Water Supply and Demand

The City of Sunnyvale has adequate water supply commitments, through its local wells and its contracts with Valley Water and the San Francisco Public Utilities Commission (SFPUC), to reliably meet the projected water needs of its residents and businesses for the foreseeable future.

Notwithstanding the above, in order to comply with the provisions of Senate Bills 610 and 221, which both passed the California State Senate in 2001, the City of Sunnyvale is required to prepare a Water Supply Assessment (WSA) that defines the Plan area as a single project, and verifies that adequate water can be supplied to the area, consistent with the assumptions of the LSAP. The increased demands within the Plan area can then be incorporated into the baseline assumptions for any subsequent water supply analysis within the city. The WSA conducted for the 2021 Plan amendment found that the City has adequate water supply to accommodate the plan buildout under normal, single dry, and multiple dry year conditions between 2020 and 2040.

Water Distribution

The water distribution system is owned by the City of Sunnyvale and operated by the Department of Environmental Services; it consists of a pipe network which lies predominantly beneath the traveled roadways in the public street rights of-way, and a system of reservoirs that store water and regulate pressures. Over 80% of the distribution and trunk lines in the City were installed in the 1960's and are nearing the end of their estimated 50-year service life, so rehabilitation and/or replacement is needed to minimize the need for emergency repairs.

Many of the distribution lines to and within the Plan area are 8-10 inches in diameter and pressures are between approximately 75 pounds per square inch (psi) and 90 psi. Like the City as a whole, these lines are mostly located within public street rights-of-way. As new projects are developed and new private streets are installed, new private distribution mains will be needed to serve fire and domestic water needs.

Overall, the densities of development projected for the Plan area will represent an increase over existing conditions, which will, in turn, increase domestic and fire water demand in the area. The infrastructure analysis that was conducted for the 2021 Plan amendment concluded that existing infrastructure would be sufficient to serve the plan buildout.

Hydraulic analyses for individual projects will be required based on final land plans, building types, water demand estimates, fire flow requirements and phasing, in order to establish final, actual line sizes in each street, as well as confirm that the existing mains are adequate.

Recycled Water

Recycled water can be appropriate for developments with large non-potable water demands. The City of Sunnyvale Recycled Water Feasibility Study provides guidance on how the City intends to develop its recycled water delivery network.

Currently, there is a storage tank and pump station north of the rail lines. A new recycled water main line, referred to as "Kifer East," is to be constructed along Kifer Road, from the existing main in Wolfe Road across the Plan area.

Service within the Plan area is included as an optional project in Phase 3 out of 4 phases of the recycled water development program. Completion dates are not set but late phasing indicates that this region has comparatively high costs to benefits. Development contemplated in the LSAP could move this area to a higher priority rank when the recycled water plan is updated in the future.

When recycled water arrives in the Plan area, landscape improvements along the Loop Road and new shared-use paths/pathways will provide an opportunity for recycled water irrigation. Additional opportunities for the use of recycled water include site landscape improvements for mixed-use residential, office/R&D and industrial uses, dual-plumbed buildings, as well as for public open space. The plan prohibits the use of recycled water irrigation under the dripline of Redwood and Cedar trees.

The Feasibility Study for Recycled Water Expansion explains that the City intends to fund expansion of the recycled water system through grants, low-interest loans, partnerships with neighboring agencies, and user rates.

WASTEWATER MANAGEMENT

Wastewater from the Plan Area is conveyed through the City's wastewater collection system to the Donald M. Somers Water Pollution Control Plant (WPCP), which is approximately four miles north of Lawrence Station. In 2014, the City began construction on upgrades that are part of a 20-year improvement program to bring much-needed repairs to the plant and accommodate new regulations and technology. The WPCP has an existing capacity to treat 29.5 million gallons of wastewater per day (MGD) before discharging to the San Francisco Bay. It is currently operating at approximately 50% of its capacity, as projections made in 1983 anticipated higher levels of industrial land uses and wastewater flow levels than have been realized. As a result of the upgrades, the average dry weather flow processing capacity of the WPCP would be reduced from the existing 29.5 MGD to 19.5 MGD. While the existing capacity can accommodate the plan's buildout, with the decrease in capacity at the upgraded WPCP, there would be insufficient capacity in the future for the plan's buildout. The City will be updating the WPCP Master Plan with subsequent environmental review in the near future to include sufficient treatment capacity for existing and planned development and additional growth.

Most wastewater from the Plan area is conveyed to the WPCP through a trunk main that flows from south to north in Lawrence Expressway. That trunk main is fed by a series of smaller public mains and private laterals. The conveyance facilities consist of gravity pipe lines made predominantly of vitrified clay (VCP), but mains are also constructed of various other materials including polyvinyl chloride (PVC), high density polyethylene, reinforced concrete, ductile iron, and cast iron. There is also a single wet well lift station on Kifer Road located at the crossing over Calabazas Creek.

In order to determine what the wastewater infrastructure needs for the Plan area may be, baseline sewage generation for the existing conditions was estimated, based on rates published in the Sunnyvale Sewer Master Plan, supplemented by manhole survey data and flow monitoring in certain locations and record drawings provided by the City. No adjustment was made for future conservation measures which may reduce expected demands by customers.

Wastewater generation for the Plan area will increase in the future due to the uses and densities envisioned in the LSAP. An analysis was conducted of the proposed buildout of the 2021 update to the LSAP. The analysis found the existing Kifer Road lift station has enough capacity to serve the LSAP buildout. However, for the increase in residential development, the existing sanitary sewer system has three pipelines that do not meet design criteria:

- Existing 10-inch VCP sewer main located in San Zeno Way, connecting into Kifer Road.
- Existing 10-inch VCP sewer main located at the intersection of Willow Avenue and Aster Avenue.
- Existing 27-inch VCP sewer main in Lawrence Expressway, north of Kifer Road in the City of Santa Clara, but under the jurisdiction of the City of Sunnyvale.

A sanitary sewer infrastructure impact fee is established with the Plan update to cover the costs of these required improvements. Developers may also make the upgrades as part of a development incentive.

Utilities Goals

U-G1 Ensure that storm water management programs in the Plan area achieve overall storm water quality compliance at both the individual project level as well as the area-wide level.

U-G2 Provide each development area with a water conveyance system that is capable of delivering adequate flow and pressure to meet Uniform Fire Code requirements for all proposed buildings.

U-G3 Provide each development area with an available public sewer main that is capable of conveying wastewater to the City's Water Pollution Control Plant.

U-G4 Provide each development area with the highest telecommunication bandwidth connectivity available.

U-G5 Avoid flooding of new development by requiring flood prevention measures for those developments located in the flood zone.

Utilities Policies

U-P1 Promote the use of bio-retention basins and flow-through planters, as well as green roofs, infiltration trenches, media filtration devices, and pervious surface treatments as a part of stormwater management strategies for new development.

U-P2 Prepare standards for the Loop Road and shared-use paths/pathways that allow storm water to be treated "at the source."

U-P3 Prepare a comprehensive, area-wide plan for storm water management and treatment.

U-P4 Ensure adequate land area is allocated for area-wide storm water management and treatment facilities.

U-P5 Require all finished floors for proposed habitable structures to have at least 0.5-feet freeboard to the 1% Flood Elevation.

U-P6 Minimize the use of irrigation-dependent landscape improvements for public streets, rights-of-way, and open space.

U-P7 In areas where large irrigation demand is anticipated, construct improvements such that they can be efficiently switched to recycled water when it is available.

U-P8 Establish a program to encourage the use of recycled water for landscape improvements on private development projects.

U-P9 Require developers to coordinate with telecommunication providers and have the necessary infrastructure installed.

U-P10 Prepare a regional sewer system master plan that identifies an overall plan and incremental public improvements that will be required for area build-out based on capacity or rehabilitation to reduce in flow and in filtration.

U-P11 Establish a sanitary sewer infrastructure impact fee for residential developments that contribute to sanitary sewer impacts found for the plan update.

U-P12 Prepare a regional master domestic and recycled water delivery plan, including hydraulic model, based on assumed building densities, height and construction types, that delineates infrastructure needs for area build-out.

PUBLIC SERVICES

Schools

The Plan area is served by the Sunnyvale School District (elementary and middle school) and Fremont Union High School District (high school). The Plan area is within the attendance boundary of Ellis Elementary School. Students from Ellis Elementary attend Sunnyvale Middle School, both of which are in the Sunnyvale School District. High school students attend Fremont High School, one of several high schools in the Fremont Union High School District.

Public Safety

The Sunnyvale Department of Public Safety provides fully integrated public safety services including Police, Fire, and Emergency Medical Services. This model of service delivery requires each sworn officer to be fully trained in all three disciplines. The Police Bureau operates out of Public Safety Headquarters at 700 All America Way. The closest fire stations are Station #2 (approximately 0.5 miles west of the plan area) and Station #4 (approximately 0.5 miles southwest of the plan area). The City of Santa Clara Fire Department also has a fire station on Corvin Drive, just north of the plan area boundary. Public services, such as fire stations, are a permitted use in all LSAP zoning districts.

Recreation

As of 2021, there are no public parks or recreational facilities in the plan area. The closest public facilities in Sunnyvale are Ponderosa Park (0.45 miles to the southwest) and Fair Oaks Park (0.65 miles to the northwest). A future two-acre public park will be built approximately 0.5 miles south of the plan area at Lily Avenue and Toyon Avenue (former Corn Palace site). There are, however, two recently approved private parks with public access easements– at the mixed-use project at 1120-1130 Kifer Road, and at another mixed-use project in the 1100 block of Aster Avenue (former Calstone/Peninsula Building Materials site). There is also park space planned in the City of Santa Clara's LSAP located northeast of Kifer Road and Lawrence Expressway.

6 URBAN DESIGN AND STREETSCAPE GUIDELINES

The character of the built environment is an important component of the success of city districts and neighborhoods. The significant change that is likely in the Lawrence Station Area over time requires that clear design guidelines be put in place to direct the design of buildings, their sites, and the surrounding public environment of streets and open spaces. This chapter describes and illustrates these guidelines.





6 URBAN DESIGN

Urban design focuses on the design of the physical environment, with particular emphasis on the character and design of the public realm, neighborhood identity, livability and sense of place. This chapter describes goals, standards and guidelines that focus on the future character and built form of the Plan area.

The Plan area and its surroundings have a relatively short history as a built urban environment. Much of what is seen today in the Plan area was built after World War II in the 1960s and 1970s. Prior to this time, the area was known for vast acreages of agricultural land, particularly orchards. The layout and development pattern in the area is a result of this development history, with an rectilinear pattern based on the original agricultural grid, infilled with post-war suburban development of large parcel development, discontinuous street patterns, curvilinear streets (especially in residential neighborhoods), and low scale buildings.

In 1962, the system of County expressways, including Lawrence Expressway and Central Expressway, was established, with subsequent widening and grade separations in intervening years. These expressways were also aligned with the north/south grid, further strengthening the underlying urban framework of the Plan area. This underlying grid pattern has been used as the basis for the physical framework of new streets and blocks of the LSAP.

DEVELOPMENT VISION

The Plan area contains a variety of neighborhoods, districts and places with differences in scale and character and varying opportunities for conservation and development. The character and scale of development in the Plan area, as well as the surrounding areas, is noticeably different north and south of the Caltrain rail tracks.

South of the Caltrain tracks, land uses are primarily residential and development is typical of suburban neighborhoods developed as large tracts after World War II. These neighborhoods are stable and attractive places to live, with attractive tree-lined streets and single and multi-family buildings. Since these areas were developed for vehicular access, pedestrian and bicycle access is often missing or incomplete, and walking to the Caltrain station is circuitous and challenging.

In the area south of the railroad tracks, the overall scale of development will change in select locations, with policies to protect and enhance the character and quality of existing residential neighborhoods. This protection will include ensuring adequate scale transitions between existing neighborhoods and new development areas. In select locations, such as 1155-1175 Aster Avenue and the corner property at Reed Avenue and Willow Avenue/Lawrence Expressway, new, higher intensity development is envisioned or has been approved. These guidelines will help ensure that the development is compatible in scale and character with the surrounding residential neighborhoods.

The area north of the tracks is generally characterized by very large parcels, currently occupied by primarily one-story industrial, research-and-development (R&D) and warehousing uses, as well as a large format retail (big box) establishment. Excluding the few sites that redeveloped in recent years, building coverage and overall intensities are low. Parking is typically in surface lots surrounding buildings.

North of the tracks, the LSAP envisions a future that is a departure from the existing pattern of low scale buildings and parking lots. Reflecting the overall trend toward higher-density development for multi-family residential, office and R&D in Silicon Valley and increasing land values, this area will be allowed and encouraged to naturally transition to a more urban scale, consistent with this Plan and the design guidelines of this chapter. Over time, the area north of the tracks will become a regional and local urban hub, job center, and new neighborhood for urban living, served by a diverse multi-modal circulation system.

The design guidelines in this chapter will help shape this physical development process. The design guidelines that follow have two general categories:

1. Area-wide guidelines that apply to the Plan area as a whole.
2. Specific Area Guidelines which apply to subareas within the Plan area.

These guidelines apply to new development of specific parcels, private and public, within the Plan area.

In addition, this chapter provides guidelines for the design of private streets and public rights of way (Streetscape Guidelines).

The guidelines include language that expresses a standard, which must be followed by using the terms: "shall," "must," or "required." Guidelines that are more qualitative and express design intent use the terms: "should," "may," "encouraged," and "discouraged."

Proposed deviations to guidelines that express a standard may be considered on a case-by-case basis as part of the planning permit review process by the body holding the public hearing or Director of Community Development making the decision on the permit.





Small-scale streets and pedestrian lanes can be used to create a street and block pattern scaled to pedestrians, bicycles and motor vehicles that provides direct connections to transit, parks, and important neighborhood destinations.

AREA-WIDE GUIDELINES

Several guidelines apply to all areas throughout the Plan area. These include Sustainability, Connectivity, Industrial to Residential Transition, Site Planning, Building Design, Open Space and Landscape, and Parking.

SUSTAINABILITY

Sustainability is a key value of these urban design guidelines. The Plan's overarching concepts and goals are inherently sustainable, as they encourage transit use, promote bicycling and walking instead of driving, and encourage land use diversity and flexibility. The urban design guidelines, however, focus on the individual design aspects that will make the Plan area a livable and desirable place. The design guidelines in the Plan supplement specific Citywide sustainability policies and programs, such as the Reach Codes. Many of the guidelines have been included to ensure that the LSAP upholds the City's commitment to sustainability. Those that have strong environmental sustainability content have been noted with the following symbol.

CONNECTIVITY

A primary goal of the LSAP is to improve circulation and connectivity for all modes of travel, particularly pedestrians, bicyclists and other forms of transit, such as buses. One of the most important considerations in achieving this goal is establishing the new framework of the Loop Road, shared-use paths, and pathways that allow access through the Plan area without lengthy and discouraging diversions. The Loop Road also provides new opportunities for vehicular traffic circulation and access to land and buildings. The new framework emphasizes improved north-south connectivity, both to provide access to Lawrence Station as well as to link the neighborhoods on both sides of the tracks together and to improve access to regional transportation facilities such as Central Expressway. The Sense of Place Plan illustrates the location and criteria for this new framework.

As of 2021, there is no portion of the Plan area that has been developed with an idealized street and block pattern. Between Reed Avenue and the

railroad tracks, the multifamily developments include internal walkways and open spaces that provide circulation routes for local residents but not the public at large. The curvature of Willow Avenue also results in a longer and circuitous route to the station. The industrial development pattern of the area north of the Caltrain tracks evolved with only one pedestrian/bicycle connection across the rail corridor and very large block sizes suited to truck and automobile access to serve the low scale industrial uses.

Connectivity Policies

CON-P1 Carry out the Sense of Place Plan's publicly-accessible framework of the Loop Road, shared-use paths, and pathways scaled to pedestrian and bicycle users, with the Loop Road accessible to all modes of travel.

CON-P2 Achieve nearest term construction of the publicly-accessible Loop Road, shared-use paths, and pathways by providing incentives for private development projects and the option to transfer development rights for construction of the improvements on offsite properties.

CON-P3 Obtain funding and development incentive opportunities for the pedestrian and bicycle rail crossings identified in the plan.

CON-P4 Work with the County of Santa Clara to assure that the changes to Lawrence Expressway associated with the grade separation project do not inhibit connectivity within the Plan area.

Connectivity Guidelines

CON-UDG1 On properties where the Sense of Place Plan identifies the location of the new Loop Road, shared-use paths, and pathways, development projects shall be required, at a minimum, to provide a public access easement for their future construction. Development incentives may be provided for the construction of the improvements.

CON-UDG2 The Loop Road, shared-use paths, and pathways should follow the locations, cross sections, and alignments shown in the Sense of Place Plan.

CON-UDG3 If, upon development review, the City determines that creating the Loop Road through a property identified on the Sense of Place Plan is not immediately feasible, property owners shall construct an initial shared-use path per the locations, cross sections, and alignments shown in the Sense of Place Plan and reserve public space for future implementation by recording a public access easement.

CON-UDG4 Ensure that the Loop Road connects to Kifer Road and Corvin Drive east of Lawrence Expressway and Kifer Road and Semiconductor Drive/Santa Vittoria Terrace west of Lawrence Expressway, with direct access to Lawrence Station via Sonora Court and San Zeno Way.

CON-UDG5 Utilize Sonora Court and portions of San Zeno Way and Lawrence Station Road to bridge the loop road and primary Class I shared-use path connections between the east and west sides of Lawrence Expressway.

CON-UDG6 Ensure the primary Class I shared-use paths provide a direct path from Kifer Road to Sonora Court, west of Lawrence Expressway; and from Uranium Drive to Lawrence Station Road/Lawrence Station, east of Lawrence Expressway.

CON-UDG7 Add publicly-accessible pedestrian pathways on secondary pathways identified in the Sense of Place Plan when multi-modal access is not feasible.

CON-UDG8 Secondary pathways north of tracks should bridge the Loop Road with other public streets or primary shared-use paths. Secondary pathways south of the tracks should provide a more direct route to Lawrence Station.

CON-UDG9 Property owners shall record an agreement, either on the final map or through a separate legal instrument, to allow adjacent property owners to connect to the new publicly-accessible Loop Road, shared-use paths, and/or pathways in order to form one continuous and uninterrupted thoroughfare as intended in the Sense of Place Plan.

CON-UDG10 Prohibit security gates on publicly-accessible routes.

CON-UDG11 Maintain an open, walkable environment throughout the Plan area.

INDUSTRIAL TO RESIDENTIAL TRANSITION

In zoning districts that allow flexible mixed-uses, a variety of land use types could be proposed on one site, or adjacent to other sites, such as new residential next to an existing industrial site. The Plan anticipates that many existing industrial/office/R&D uses will continue to remain, while others will develop to mixed-use residential or single-use residential nearby. There are several compatibility considerations for introducing residential uses in long-standing industrial areas, such as noise, air quality, and aesthetics. In the reverse, there are also compatibility considerations for locating new industrial/office/R&D uses next to existing residential in the Plan area not separated by the railroad tracks. Therefore, guidelines are established in the Plan to ensure compatibility between these different land uses.

Industrial to Residential Transition Policy

ITR-P1 Ensure compatibility between residential and industrial/office/R&D uses upon review of new development on the same site or neighboring sites in order to minimize adverse impacts between the different land uses.

Industrial to Residential Transition Guidelines

ITR-UDG1 Consider existing land uses during site planning and strive to locate compatible uses next to each other. On a case-by-case basis, address adverse impacts to existing adjacent industrial/office/R&D uses for development projects that propose to convert industrial sites to residential.

ITR-UDG2 Industrial sites proposed for residential development should not be located in proximity to a use that would create hazardous conditions for the proposed residential development in order to protect all occupants of the sites, and to enhance compatibility among sites within the Plan. The City may require a risk assessment to address compatibility issues for any proposed industrial to residential conversion.

ITR-UDG3 Phase I Environmental Site Assessments (ESA), and if warranted, Phase II ESAs, are required for all residential development projects on existing industrial/office/R&D sites. Applicants shall participate in the appropriate state or county agency oversight programs for review of remediation measures related to any contaminated environmental media, including, but not limited to, soil, groundwater, and soil gas vapor.

ITR-UDG4 Acoustical studies shall be conducted for development of new land uses that are different than the adjacent land uses (e.g. new residential next to existing industrial). The intent is to protect new users from noise impacts from adjoining uses, and in the inverse. Acoustical attenuation measures recommended by the studies shall be incorporated into development projects.

ITR-UDG5 At a minimum, buffers must meet the minimum landscaped buffer standards in Chapter 19.37 of the Zoning Code. Other types of buffers the City may consider include:

- Streets, pathways, and trails.
- Parks and open space.
- Increased building setbacks beyond minimum requirements.

ITR-UDG6 The following measures are required for new development of office/R&D/industrial uses adjacent to existing residential sites, not separated by the railroad tracks:

- Landscaped buffers and walls that meet the minimum standards in Chapter 19.37 of the Zoning Code.
- All loading areas and trash enclosures shall be set back a minimum of 20 feet from the adjoining residential property line.
- Light standards on private property located within a required landscaped buffer shall not exceed 15 feet in height.
- A minimum building setback of 20 feet per the setback requirements in Chapter 19.35 of the Zoning Code.
- No exhaust fans shall be placed on walls facing residential uses, except as may be required by the City. In addition, no machines or fans shall be placed on the roof of the building which exhausts dust or odors.
- Prohibit use of outdoor loudspeakers at all times, except as may be approved for special events in accordance with the Municipal Code.
- All unenclosed materials, equipment and/or supplies of any kind shall be maintained within an approved enclosed area. Any stacked or stored items shall not exceed the height of the enclosure.

SITE PLANNING

See Chapter 19.35 of the Municipal Code for building setback and parcel size requirements.

Site Planning Policies

SP-P1 Achieve a more urban and visually interesting character, by siting buildings to adjoin the public environment of streets and sidewalks, rather than being set back behind surface parking and large planted setbacks.

SP-P2 Provide access routes for bicyclists and pedestrians within new development to existing or future connections offsite.

Site Planning Guidelines

SP-UDG1 Site buildings to reinforce the street edge or corner by maximizing building frontage along the street. Building setbacks will vary by street type, as noted in the Zoning Code.

SP-UDG2 In larger parcels north of the tracks, establish a fine-grained grid of building blocks no longer than 400 feet on a side, with pedestrian access around the blocks. Provide mid-block through-connections for blocks greater than 400 feet. Mid-block connections may include pedestrian-only access or shared access for vehicles, bicycles, and pedestrians.

SP-UDG3 For the retail portion of the Loop Road along Santa Vittoria Terrace, and for retail on Willow Street and Reed Avenue, locate the primary building façade for retail uses at the street right-of-way/property line (0 feet setback). Exceptions to this guideline are allowed and encouraged to emphasize the retail zone and widen the sidewalk as follows:

- Up to 10 feet maximum setback from the property line.
- Contiguous with the sidewalk grade and accessible to the public.
- Upper levels of the building may extend over the maximum setback area to create arcades and overhangs.

SP-UDG4 For the retail portion of the Loop Road along Santa Vittoria Terrace, and for retail on Willow Street and Reed Avenue, ensure that retail spaces have interior depths of at least 40 feet, with 60 feet as an ideal.

SP-UDG5 Maintain neighborhood and street character by locating residential uses adjacent to, and across the street from one another where possible.

SP-UDG6 Limit curb cuts to minimize pedestrian-vehicular conflicts.

SP-UDG7 Accommodate fire and emergency access per state and local codes and site them to avoid pedestrian and bicycle conflicts.

SP-UDG8 Portions of buildings are encouraged to be set back to preserve existing large canopy street trees or adequately accommodate new street trees.

SP-UDG9 For residential or mixed use development, parking shall be accessed from the side street/drive aisle or rear alleys, away from pedestrian priority ways.

For nonresidential development, parking should be accessed from the side street/drive aisle or rear alleys, away from pedestrian priority ways.



Small building setbacks and alcoves provide additional space for merchandising without interrupting pedestrian flows, while also maintaining a strong street wall.

BUILDING DESIGN

Several components of building design are particularly important in creating a comfortable and attractive pedestrian and transit-oriented development pattern.

Building Height

Building heights will vary considerably throughout the Plan area. In the areas south of the tracks, heights will be lower to be compatible with nearby low scale (generally one-to-three story) residential uses. North of the tracks, heights can be higher. The tracks themselves provide an ample physical separation from residential uses south of the tracks. Rising land values, changing spatial requirements, and construction codes are resulting in taller buildings for office, R&D and residential uses. See Chapter 19.35 of the Municipal Code for height limit requirements.

Building Height Policy

BH-P1 Encourage the greatest concentration of taller buildings in the Plan area north of the tracks in the vicinity of Lawrence Station in order to ensure a high concentration of jobs and residents in close proximity to the station and emphasize the area's function as a transit hub.

Building Height Guidelines

BH-UDG1 Restrict building heights to 50 feet tall within 20 feet of public parks and publicly accessible open spaces to maintain a pedestrian scale and maximize daylight/sky exposure. This building height restriction applies on at least one side of public parks and publicly-accessible open spaces.

BH-UDG2 Place taller buildings or building elements at corner intersections to achieve greater visibility, scale relationships, and architectural massing and interest.

BH-UDG3 Ensure that building height, massing, and spacing allow views to Lawrence Station from streets wherever possible.

BH-UDG4 Vary building heights within blocks and parcels in order to provide visual interest and variety and to avoid a blocky, uniform appearance.

BH-UDG5 Provide optimal solar access for residents and workers in the design and location of buildings.

BH-UDG6 The solar access requirements of the Zoning Code do not apply to development in the LSAP.

Building Massing and Articulation

Building massing refers to the apparent bulk and dimensions of various parts of a building. Articulation refers to potential variations in the planes of the building such as roofs and façades.

Building Massing and Articulation Policy

BMA-P1 Modulate and articulate the massing on large buildings in order to reduce their apparent scale, ensure their compatibility with the surrounding development, and help create a pedestrian-scaled environment.

Building Massing and Articulation Guidelines

BMA-UDG1 To provide variation in wall planes, each side of a building shall include at least three distinct vertical modules that project from the primary wall plane by at least 15 feet wide by 5 feet deep.

BMA-UDG2 Buildings shall be organized with a horizontal base, middle, and top as a fundamental design approach.

- The building base should be differentiated with projections and setbacks and enriched with finer grain design detail and decorative elements, such as awnings, canopies, arcades, entries, window treatments, planter boxes, etc., to support a more pedestrian-oriented streetscape.
- The middle and top portions of the building, including the upper floors above the building base should be set back from the back of the sidewalk and articulated to create a regular rhythm and sense of pedestrian-scaled enclosure to the public realm. Smaller sites and sites with shallow depths may propose alternative design approaches to provide architectural interest through quality exterior materials and architectural features.

BMA-UDG3 New development along the railroad tracks between existing Sunnyvale and Santa Clara residential neighborhoods to the south shall give special attention to scale and massing, to prevent

significantly altering the existing neighborhood character. The height and massing of new development towards the railroad tracks should be generally similar in scale to the adjacent residential district and step up to the taller building heights further away from the railroad tracks.

BMA-UDG4 Articulation of the building facades on the ground and upper floors is a priority, to avoid the appearance of a monolithic structure.

- Continuous flat facades shall be avoided and instead facades shall be articulated through use of increased upper floor setbacks; building recesses/openings; architectural wall projections from the main wall plane; recessed windows; awnings; recessed or projecting balconies; bay windows; and breaks in the horizontal and vertical planes.
- Every 275 linear feet of the façade on non-residential buildings shall have a minimum wall recess/opening of at least 30 feet wide by 30 feet deep. The recess/opening may occur anywhere within the 275 feet.
- Every 175 linear feet of the façade on residential/mixed-use buildings shall have a minimum wall recess/opening of at least 15 feet wide by 15 feet deep. The recess/opening may occur anywhere within the 175 feet. Balconies and useable open spaces may be located within the wall recess/opening.

BMA-UDG5 Variable heights and roof forms shall be used to break up the length of the building roofline. Buildings built within 15 feet of the maximum height limit shall reduce height by at least one story every 100 linear feet. The location of the height reduction may occur anywhere within the 100 feet.

BMA-UDG6 Roof treatments, such as cornices and overhangs, are encouraged to define building tops. Parapets without architectural detailing are not allowed.

BMA-UDG7 Building tower elements that project above the main building roofline (particularly at building corners) are encouraged. The length of tower elements shall not exceed more than 25 percent of the length of building façade.

BMA-UDG8 Accentuate major gateways and termini in the Plan area with architectural focal points.

BMA-UDG9 Reinforce street corners with changes in architectural massing, exterior colors and materials, and height.

BMA-UDG10 Screen rooftop mechanical and other equipment from sight in all directions from the property lines, as demonstrated by line of sight drawings. The screening shall match the building architecture.

Building Orientation, Entries, and Façades

Building design, particularly at the ground level, is important to creating pedestrian environment that is interesting, attractive and feels secure, particularly on retail streets and in areas surrounding the transit station.

Building Orientation, Entries and Façades Policy

BO-P1 Activate the street and sidewalk by providing active ground floor uses, locating building entries and windows in appropriate locations, and providing pedestrian-scaled elements.

Building Orientation, Entries and Façades Guidelines

BO-UDG1 Orient buildings to ensure that the primary façades and entrance areas of all buildings face the street, open space areas, or other pedestrian-oriented circulation areas.

BO-UDG2 Place windows and storefronts at the street level and ground floor.

BO-UDG3 Use clear, non-reflective glazing on all windows at street level.

BO-UDG4 Emphasize building entries with small entry plazas, vertical massing, and architectural elements such as awnings, arcades, or porticos.

BO-UDG5 Design entries so that they are clearly identifiable from the street and primary pedestrian corridors. Each development must identify primary pedestrian corridors to ensure each entry leads to a primary pedestrian corridor.

BO-UDG6 Provide a walkway leading from the street to the building entrance if the building is not located directly on a public sidewalk.

BO-UDG7 Enhance building entries and the adjoining pedestrian realm with plazas and landscaping.





Articulation and step-backs of large building masses can enhance the pedestrian scale and allow penetration of sunlight. Such articulation also improves the relationship between existing residential areas and new development.

BO-UDG8 For retail development with multiple store entries, orient all entries to the street or public plaza. Utilize the outdoor space for cafés or other outdoor retail uses.

BO-UDG9 For retail areas, design the floor-to-ceiling height of the first floor to be greater than that of upper floors to accommodate ground-floor retail space. The height of retail areas on the first floor shall be a minimum of 18 feet.

BO-UDG10 Include features that add depth, shadow and architectural interest, such as balconies, recesses, cornices, bay windows, and step-backs at upper floors, consistent with the building's style and scaled for pedestrians.

BO-UDG11 Blank walls along streets, the Loop Road, shared-use paths, and pathways shall be no greater than 30 linear feet without being interrupted by a window or entry. For large-format retail buildings, see additional guidelines related to Mixed-Use/Retail Buildings along Pedestrian Retail Streets.

Building Design Guidelines for Specific Building Types

In addition to the general building design guidelines that apply for all buildings, additional guidelines apply to specific building types.

Residential Buildings

Residential Building Policies

RB-P1 Ensure that residential buildings contribute activity to public streets and open spaces.

RB-P2 Ensure that residential buildings provide privacy for residents.

Residential Building Guidelines

RB-UDG1 Entries to residential buildings must be accessible directly from the street or public open spaces.

RB-UDG2 For ground floor units in residential development, the main entrance shall lead directly to the street to create a lively streetscape and a direct relationship with the street and pedestrian realm. Use balconies, stoops, windows, and courtyards to provide architectural interest.

RB-UDG3 Employ variation in scale and form for residential development, allowing for both pedestrian-scaled and larger-scaled massing.











Design buildings to face the street and reinforce the overall circulation framework of the area, without large parking lots separating the public realm from the building. Use special design features to accent corners, as well as planting and lighting to unify and soften street corners.

RB-UDG4 In areas south of the tracks, residential development across from existing residential shall be no more than three stories in height at the street level. Each story above the third floor shall be stepped back from the front wall of the story below by at least 30 feet.

RB-UDG5 In residential development adjacent to a public street or publicly-accessible road or shared-use path/pathway, a building base with a maximum height limit of 50 feet shall be established. Above 50 feet, upper floors of the entirety of the building shall be set back a minimum distance of 15 feet from the front wall of the building base.

RB-UDG6 Above 75 feet, the length of the building floorplate(s) shall be reduced in length by a minimum of 10% from the floor below.

Mixed-Use/Retail Buildings along Pedestrian Retail Streets

Also refer to the Toolkit for Mixed-use Development in Sunnyvale for mixed-use goals and policies.

Mixed-use/Retail Buildings Policy

MU-P1 Ensure that buildings contribute to the character of public pedestrian areas and support a successful retail environment.

Mixed-use/Retail Buildings Guidelines

MU-UDG1 Building entrances shall be oriented to the street and shall be spaced no more than 50 feet apart.

MU-UDG2 Clearly address the public realm by providing glazing on at least 75 percent of the ground floor retail façade facing the street or public space.

MU-UDG3 Storefronts, windows, and entry doors should be recessed at least six inches from the adjacent wall surface to create architectural relief, definition, and shadow.

MU-UDG4 Utilize architectural elements such as recesses, awnings, colonnades, and pronounced entrances.

MU-UDG5 Where entries orient to parking areas, provide continuous sidewalks from the street directly to the doorway.

MU-UDG6 If large-format, or "big-box," retail (25,000 or more square feet in gross building area) is developed, design buildings to support the pedestrian environment as follows:

- Locate and orient buildings along primary street edges and provide fenestration (windows, glass storefronts, and openings), signage, and entries.
- Fenestration and/or entries shall occupy a minimum of 30 percent of the façade with 50% fenestration being the goal.
- Place smaller retail spaces along the street side of large format retail buildings, thereby breaking down the massing of the building and creating a more pedestrian-friendly environment

MU-UDG7 In areas south of the tracks, mixed-use development across from existing residential shall be no more than three stories in height at the street level. Each story above the third floor shall be stepped back from the front wall of the story below by at least 30 feet.

MU-UDG8 In mixed-use development adjacent to a public street or a publicly-accessible road or shared-use path/pathway, a building base with a maximum height limit of 50 feet shall be established. Above 50 feet, upper floors of the entirety of the building shall be set back a minimum distance of 15 feet from the front wall of the building base.

Above 75 feet, the length of building floorplate(s) shall be reduced in length by a minimum of 10% from the floor below.

MU-UDG9 Where outdoor dining areas are provided, dining activities shall not encroach into a minimum clear width of five feet for pedestrian access at any given point along the pedestrian travel zone.

Office/R&D Buildings

Office/R&D Buildings Policy

OR-P1 Office/R&D buildings should exhibit the appearance of modern and technologically-advanced working and meeting environments that are engaging, durable, aesthetically-pleasing, and accessible. They should be flexible to accommodate the various space and equipment needs for individual or multiple tenants. Special attention should be given to the selection of



(Above) Design residential buildings to provide open space that is usable and visually attractive for both residents and the public
(Right) Provide entries from residential units directly to the street wherever feasible, with plantings and raised terraces to provide privacy and amenity for both residents and the public.

exterior finishes and public art installations, particularly in the plazas or forecourts, entry lobbies, and other areas with public access.

Office/R&D Buildings Guidelines

OR-UDG1 Façade design should include high quality exterior materials, windows, sun control devices and other design elements to produce a well-articulated building. Techniques to create high quality exteriors include changes in materials and/or color, variations in the vertical planes, and incorporation of upper level outdoor common areas should be used to avoid a monolithic and sterile appearance.

OR-UDG2 Additional articulation and transparency should be provided on the ground floor and at corners for a visually inviting pedestrian experience.

OR-UDG3 Windows should be well proportioned. Glazing should provide a high degree of light transmittance and prevent glare.

OR-UDG4 Main entrances for the public, staff, and visitors should be clearly identifiable.



OR-UDG5 The lobby should be inviting, well-lit, secure, and clearly visible from the street, both day and night.

OR-UDG6 Indoor atriums, outdoor plazas and public amenity areas should be incorporated into building frontages for employee and visitor uses.

OR-UDG7 Public art is encouraged in the design of atriums, plazas, and public amenity areas.

OR-UDG8 Roofs should be designed with usable rooftop gardens and/or light-colored roofing, to help reduce heating and cooling loads, address 'urban heat island' effects, and provide workers a significant private outdoor amenity area.

OR-UDG9 Parking should be accessed from alleys, away from pedestrian priority ways, when possible.





(Top) Articulate building masses to clearly define entries and different functional areas. (Bottom) Provide continuous active ground-floor uses with a strong orientation to the sidewalk along pedestrian retail streets.

BUILDING MATERIALS

Building Materials Policies

BM-P1 Encourage variety in building materials to create a visually interesting environment.

BM-P2 Use building materials to define the functional levels of a building and its relationship to the public realm (particularly at the street level).

BM-P3 Ensure that materials avoid excessive monumentality or a monolithic character.

BM-P4 Ensure that materials fit with the character and context of the existing development.

BM-P5 Prioritize sustainability as a key consideration.

Building Materials Guidelines

BM-UDG1 Use high-quality, durable architectural materials and finishes that provide a sense of permanence. High-quality materials include, but are not limited to:

- Architectural quality cast-in-place concrete
- Glass fiber reinforced concrete (GFRC)
- Decorative (non-structural) modular brick masonry (modular brick should be unglazed, utilizing traditional textures and colors)
- Stone (particularly to be used at the pedestrian level at column bases, window sills, window surrounds, stringcourses, and cornices)
- Decorative terra cotta
- Stucco and cement plaster (stucco and cement plaster are encouraged to have controlled surface textures and composed patterns of reveal and control joints to create interest; do not use stucco finish to simulate the use of another material, i.e. wood trim window sills)
- Architectural metal panels
- Standing seam metal roofing
- Barrel roofing tile
- Slate or concrete roofing tile
- Precast concrete (architectural quality, utilizing subtle colors and fine-grained aggregates to create a "cast stone" appearance).

BM-UDG2 Use materials that express their true properties. Faux reproductions of materials are prohibited with the exception of products that mimic the appearance of wood.

BM-UDG3 Give preference to sustainable materials, buildings systems, and technologies.

BM-UDG4 Use materials that improve building envelope performance through insulation values and thermal mass.

BM-UDG5 Avoid highly reflective surfaces and materials that can cause heat or glare for pedestrians.

BM-UDG6 Avoid dark materials that absorb heat and reduce solar reflectivity.

BM-UDG7 Use glazing that is as clear and non-reflective as possible in order to provide transparency and visibility while meeting energy and daylighting performance requirements.

BM-UDG8 Where new development is planned near existing residential development, new windows and outdoor spaces should be carefully designed to respect the privacy of adjacent and nearby neighbors by limiting direct views into the windows of other residential units.

BM-UDG9 Window design should contribute to and complement the architectural character and style of the building. Its materials, and features, such as the trims and sills, should be of high quality and include some depth to cast shadows and articulate the building.

BM-UDG10 Development projects shall comply with the City's Bird-Safe Design Guidelines.

BM-UDG11 Building bases should be strongly defined with architectural features such as a stringcourse, a continuous horizontal band along the length of the building façade, step backs, or changes in materials and color. Employ accent materials such as tile insets or natural stone at the ground level to add texture, color, and visual interest. The base should be expressed with façade treatments and detailing that are scaled to pedestrians.









Differentiate the levels of a building particularly at the ground floor, through the use of design elements and materials. Clear, non-reflective glazing contributes visual activity to the public realm and an improved sense of security at night.

BM-UDG12 Employ color to differentiate between building elements and to moderate the scale of buildings.

- A variety of colors are encouraged, selected to enhance natural material choices such as stone, wood, and natural metals, and quality architectural materials such as precast concrete, brick masonry, and barrel tile.
- Building colors should be compatible with one another.
- Residential units shall be a different color than retail portions of the building. Use colors with a very high degree of light reflectance sparingly to control glare. Use darker and more intense colors at the building base.







OPEN SPACE AND LANDSCAPE

Well-landscaped, publicly-accessible open space is an essential ingredient of any urban environment for both passive and active recreation purposes. Appropriate landscaping also provides visual interest and beautification, helps mitigate heat island effects, and provides a means to satisfy storm water management mandates.

In 2021, the Plan area had few publicly-accessible open spaces or areas of attractive landscaping that are consistent with current sustainability goals. Therefore, new development on parcels throughout the area will be required to provide landscaped open space for public use.

Open Space and Landscape Policies

OS-P1 Ensure that open space provided by new development is accessible and attractive.

OS-P2 Design open spaces to prioritize sustainability, including incorporation of stormwater Best Management Practices (BMPs).

Open Space and Landscape Improvement Guidelines

OS-UDG1 Open space acreages may vary by parcel size as parcel sizes vary. Open space from one parcel may be combined with open space required for an adjacent parcel in order to create a larger single open space area.

OS-UDG2 Up to 25 percent of required open space may be covered by the building above.

OS-UDG3 Pedestrian rights-of-way can contribute to the public open space provisions.

OS-UDG4 The cross-section dimension of a plaza, courtyard, or mid-block pedestrian connection should be a minimum of 20 feet.

OS-UDG5 Do not exceed a grade differential greater than four feet between an open space or plaza area and the adjacent sidewalk grade.

OS-UDG6 Include public art as part of open space improvements, per the public art requirements of the Zoning Code.

OS-UDG7 For residential uses, provide useable open space in accordance with the Zoning Code.

- Useable open space should be well landscaped to enhance the aesthetics of individual developments.
- Residential common areas may be provided in a variety of formats, including courtyards, roof gardens, play areas, and outdoor kitchens.
- Common areas, located at upper-level floors for use by building residents and visitors, may qualify as useable open space.
- Podium or rooftop patios and gardens with useable open spaces are highly encouraged.
- Outdoor common areas and common spaces should provide shaded and unshaded areas, adequate lighting for appropriate nighttime use and security, and well-designed seating options, such as seat walls, planter ledges, benches, moveable seating, fixed seating, and seating steps.

OS-UDG8 Use water pervious surface materials that allow for stormwater capture for parking areas, driveways and pathways to the extent that they do not cause damage to public streets or other infrastructure.

OS-UDG9 Use sustainable surface materials for paving, such as reclaimed pavers, locally produced materials, or concrete and asphalt with fly ash content.

OS-UDG10 Include sustainable landscape design strategies, materials and finishes.

OS-UDG11 If recycled water is available in the Plan area, use salt tolerant planting to maximize use of this water resource. Prohibit its use on salt-sensitive plantings to remain, such as the Redwood trees on Sonora Court.

OS-UDG12 Healthy significantly sized trees should be incorporated into the design of plazas and open space areas.

OS-UDG13 Public gathering areas are encouraged to include well-designed seating options such as benches, seat walls, planter ledges, moveable chairs, and seating steps. Seating and gathering areas should have a mixture of shaded and unshaded areas to increase usability in various weather conditions.

OS-UDG14 Use of appropriate native vegetation and water-conserving plant material of varying textures and colors is highly encouraged.

Plant material shall conform to water efficient landscaping requirements in the Zoning Code.

OS-UDG15 All areas of public open space areas should be visible from surrounding building entrance, residential units, or nonresidential spaces, or other frequently occupied indoor/outdoor spaces to maximize natural surveillance.

OS-UDG16 On private property, use preferred landscaping materials, including, but not limited to:

- Precast concrete unit pavers
- Integral colored concrete
- Natural stone
- Glass fiber reinforced concrete/ultra-high-performance concrete
- Precast concrete
- Stabilized crushed stone
- Stainless steel, corten steel, or powder-coated metal
- Polycarbonate panels
- Tempered glass





Well-designed small pedestrian spaces, mini parks and plazas with seating, planting and lighting provide popular public space in the urban environment.

PARKING

As the Plan area evolves over time, densities will increase and it will become feasible to provide parking in structures or underground rather than at ground level in surface lots. This will have the benefit of minimizing the footprint of surface parking, which as of 2021 dominates existing development north of the tracks. It will also free up additional land for new building development, open space and landscape improvements.

General Parking Policy

PK-P1 Minimize the footprint of parking in the Plan area and ensure that parking facilities, whether in structures, underground, or in surface lots, are well-designed, functional, attractive, and fit well into their surrounding context.

General Parking Guidelines

PK-UDG1 In order to minimize pedestrian/vehicle conflicts and optimize street operation, minimize curb cuts as follows:

- Share access drives and access easements to parking facilities.
- Share parking among uses, such as residential and office, as well as between developments, and within entire subareas.
- In particular, minimize the number of vehicular access points (curb cuts) from the following streets: Loop Road, Willow Avenue, Aster Avenue, Uranium Drive, and Sonora Court.

PK-UDG2 No curb cuts shall be allowed along the retail portion of the Loop Road known as Santa Vittoria Terrace.

PK-UDG3 Arrange development in a configuration such that parking is internally-focused with the minimum number of access lanes necessary.

PK-UDG4 Provide bicycle parking stalls per Chapter 19.35 of the Zoning Code.

PK-UDG5 Ensure that bicycle parking is secure and weather-protected.

PK-UDG6 Provide car-sharing spaces, electric vehicle charging stations, and disabled parking spaces per Chapter19.46 of the Zoning Code, or if superseded by more restrictive requirements in the Building Code and Reach Codes.

PK-UDG7 Provide safe access for pedestrians through parking facilities to building entries.

Surface Parking Lot Guidelines

PK-UDG8 In residential and mixed-use projects, the maximum amount of surface parking spaces provided shall not exceed 20% of the total provided parking spaces.

In office/R&D/industrial projects that exceed the base maximum floor area ratio (notwithstanding projects within the additional FAR allowance of the Green Building Program), the maximum amount of surface parking spaces provided shall not exceed 25% of the total provided parking spaces.

PK-UDG9 Locate surface parking lots away from street edges, behind buildings, and provide decorative, landscaped, or other screening.

PK-UDG10 Use a mix of trees, shrubs, and ground cover to landscape perimeter setback areas around parking lots.

PK-UDG11 Provide a ratio of one tree per three (3) parking spaces on the perimeter of the lot and one tree per six (6) parking spaces on the interior of the lot. Comply with parking lot shading requirements in Chapter 19.46 of the Zoning Code.

PK-UDG12 Provide landscape islands in surface parking lots instead of tree wells, wherever possible.

- Landscape islands shall be a minimum of six feet in width.
- Where tree wells are provided, they shall be a minimum of five feet by five feet, to provide an adequate area to support tree growth.

PK-UDG13 Accommodate pedestrians and bicycle traffic with pedestrian-only pathways and bicycle facilities through parking areas. Shade these areas with trees and architectural elements such as trellises and awnings.

Parking Structure Guidelines

PK-UDG14 Design parking structure access lanes to have the character of an attractive, well-landscaped small urban street.

PK-UDG15 Locate parking structures away from primary pedestrian corridors as identified on development plans.

PK-UDG16 Parking structures that face public streets, publicly-accessible streets, or publicly-accessible shared-use paths/pathways shall include screening so that parked vehicles are not visible.

PK-UDG17 Create visual interest and reduce the mass of parking structures through the use of:

- Variation in the dimension and proportion of openings of the façade. Every 200 linear feet of the parking structure façade facing a public street, publicly-accessible street, or publicly-accessible shared-use path/pathway shall have a minimum wall recess/opening of at least 20 feet wide by 20 feet deep. The recess/opening may occur anywhere within the 200 feet.
- Decorative screens, railings, and trellis elements of durable, high-quality materials.
- Materials and designs that are similar to surrounding buildings on site.
- Awnings, arcades, trellises, or porticos along street-facing façades and pedestrian connections.
- Provide parking access lanes and driveways at spacing along the street of not less than 100 feet.
- Where parking lanes or courts are visible from the street, planter beds with trees or potted plants should be located between garage doors.
- Create shared, unallocated parking spaces, such as carports, in order to maximize site area for new building development and open space.

PK-UDG18 Locate and design pedestrian entries and stairwells for parking structures:

- As identifying architectural elements.
- Adjacent to public streets and along major pedestrian connections.
- To ensure that they are visually open and free of visual obstruction to promote a feeling of security and comfort.
- To minimize conflicts between pedestrians, bicycles, and vehicles.

PK-UDG19 For lower density residential development, such as townhouses:

- At-grade garage doors, aligned in a row, shall not directly face the public street.
- Arrange at-grade garages around well-landscaped parking lanes and/or parking courts leading to individual garages.

PK-UDG20 Stair and elevator cores should be designed as important architectural components and should be treated with high quality materials and lighting.

PK-UDG21 The use of finer-detailed cladding materials and decorative elements are encouraged at upper floors.

PK-UDG22 For parking structures located within buildings occupied by other land uses (such as parking on the ground and upper floors of a residential building), parking areas facing public streets or publicly-accessible streets shall be concealed from exterior view with a solid wall of at least six feet high, or by building area such as residential units, non-residential spaces, and active uses.

SPECIFIC GUIDELINES FOR URBAN DESIGN SUBAREAS

Within the overall Lawrence Station Plan area, seven subareas have been identified that generally correspond with the nine different zoning districts of the LSAP described in Chapter 3 and illustrated in Figure 3.2. Because of their locational and site characteristics, it is envisioned that each of these subareas will have a somewhat different physical character. Therefore, in addition to the general guidelines described above, which apply to site planning, building design, open space and parking throughout the entire Plan area, specific design guidelines for the development of each of these subareas are needed. For purposes of these guidelines, these specific subareas are illustrated in Figure 6.1. The seven subareas include the following:

- Transit Core West (MXD-I and MXD-I/S zoning districts)
- Transit Core East (MXD-I and M-S/LSAP zoning districts)
- Transit Supporting West (MXD-II zoning district)
- Transit Supporting East (MXD-II zoning district)
- West Kifer (M-S/LSAP 60% and 120% zoning districts)
- Peninsula (MXD-III zoning district)
- Lawrence/Reed/Willow (MXD-IV and R-5 zoning districts)

Table 6.1 includes guidelines that apply to multiple subareas. An "X" in the column for each subarea indicates a guideline that applies to that particular subarea. Following Table 6.1 is a description of each Urban Design Subarea and specific urban design guidelines that apply.

Figure 6.1: Subareas

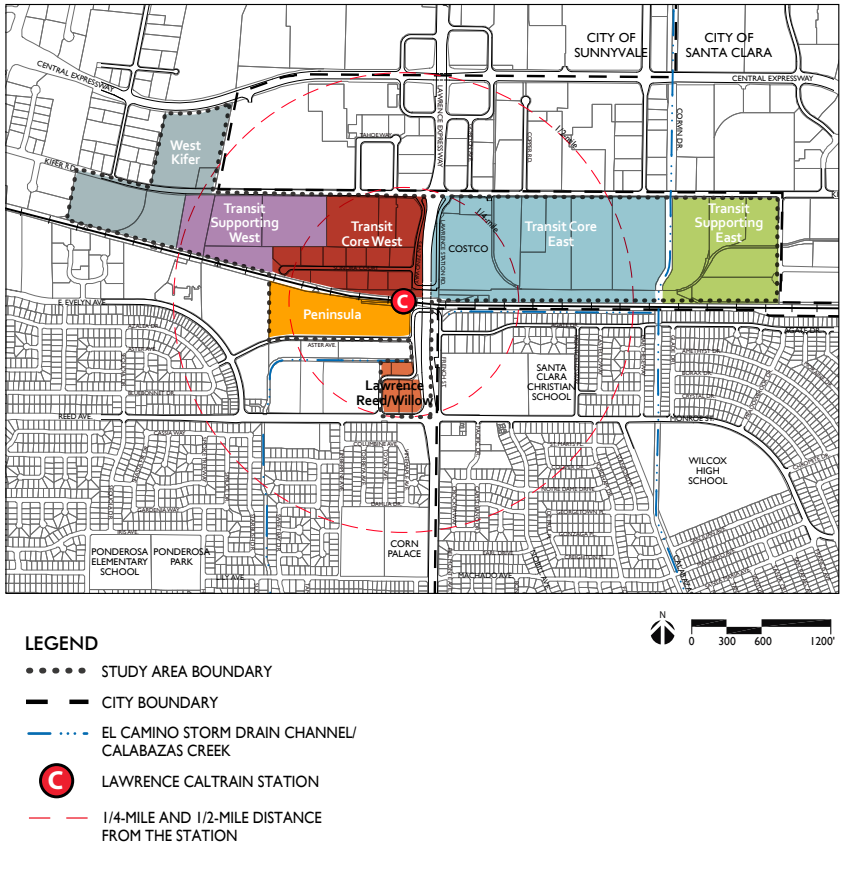


Table 6.1: Guidelines that Apply to Multiple Subareas

Guideline	Subarea						
	Transit Core West	Transit Core East	Transit Supporting West	Transit Supporting East	West Kifer	Peninsula	Lawrence/ Reed/Willow
SA-UDG1 For buildings adjacent to the tracks, incorporate landscaped buffers to mitigate the negative effects of noise and vibration from train operations. At a minimum, projects must be consistent with the landscaped buffer standards in Chapter 19.37 of the Zoning Code with an eight-foot tall decorative masonry wall along the railroad tracks if the project includes residential uses.	X	X	X	X	X	X	
SA-UDG2 Prioritize development of new public open space over other development incentives, given the current lack of open space. Public open space may be privately owned and maintained with a public access easement.	X	X	X	X		X	
SA-UDG3 Follow the Sense of Place Plan's publicly-accessible framework of the Loop Road, shared-use paths, and pathways.	X	X	X	X	X		X
SA-UDG4 New development along Calabazas Creek shall have active ground floor uses for at least 25% of the frontage along the future creek shared-use pathway that are compatible with future public access and park environment goals. Active ground floor uses include: • Mixed-use buildings with ground level commercial spaces (restaurants, retail, personal services, recreational and athletic facilities), office lobbies, and/or residential entrances and residential amenity spaces (gym, community rooms/kitchens); along with private useable open spaces at the upper levels; • Primary face of entertainment uses; • Attached residential units, such as townhouses or live/work units, that are served by rear access drives; and • Other uses and configurations that achieve the goal and intent of activating the frontage.		X		X			

Table 6.1: Guidelines that Apply to Multiple Subareas (continued)

	Subarea						
Guideline	**Transit Core West**	**Transit Core East**	**Transit Supporting West**	**Transit Supporting East**	**West Kifer**	**Peninsula**	**Lawrence/ Reed/Willow**
SA-UDG5 Building service and parking areas shall not be located to face Calabazas Creek or the loop road.	X	X		X			
SA-UDG6 For properties along Calabazas Creek, locate private open space along Calabazas Creek to increase the perceived scale of the linear park.		X		X			
SA-UDG7 For properties along Calabazas Creek, ensure that new development promotes a public feeling for the Calabazas Creek linear park.		X		X			
SA-UDG8 For properties along Calabazas Creek, provide visual indicators of the delineation between development and the public space of the Calabazas Creek linear park without the use of fences.		X		X			
SA-UDG9 For properties along Lawrence Expressway, San Zeno Way, and Lawrence Station Road, coordinate development plans with Santa Clara County for potential land dedications required for the Lawrence Expressway Grade Separation Project.	X	X					X
SA-UDG10 Provide right-of-way dedications along Kifer Road, where determined by the City, to be consistent with Kifer Road cross section in the Sense of Place Plan, to install new sidewalk, median, and bicycle lane improvements.	X	X	X	X			

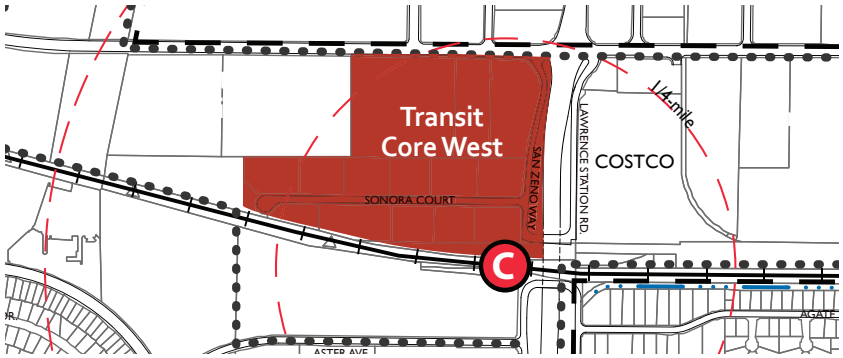
TRANSIT CORE WEST

The Transit Core West subarea is defined as the area north of the station, west of Lawrence Expressway, which includes properties along Kifer Road, San Zeno Way and Sonora Court. Its location near the Caltrain station offers opportunities for increased development to more transit-oriented uses. This Subarea will be one of the most active and diverse subareas in the Plan area (see Figure 6.2). The focus of the subarea will be the west end of the Loop Road at Santa Vittoria Terrace, which will be the primary retail street in the Plan area, terminating at Sonora Court, with close access to Lawrence Station via San Zeno Way. The majority of Santa Vittoria Terrace was constructed in 2020 with the mixed use project at 1120-1130 Kifer Road (Figure 6.3). Vertical mixed-use development is encouraged along Santa Vittoria Terrace. Active ground floor uses (preferably retail, restaurant and entertainment uses), are required along a sizeable percentage of the ground floor frontage along Santa Vittoria Terrace in order to ensure it promotes a walkable, pedestrian-friendly street that provides goods and services to surrounding neighborhoods and pleasant access to Lawrence Station.

The form of future development of this area will be crucial to improving connectivity to the station for all modes, particularly pedestrians and bicyclists. The Subarea also has the significant Redwood and Cedar trees which line Sonora Court, making improvements to this area an opportunity to create a unique, character-defining environment while also protecting these unique resources.

As described in the Chapter 4 of this report, the County of Santa Clara's Roads and Airports Department is planning to grade-separate Lawrence Expressway adjacent to this subarea by depressing the roadway below grade. Grade-separation of the Expressway may change the configuration of San Zeno Way, may require a right-of-way dedication on private property, and may alter access patterns to this subarea. Redevelopment plans for properties along San Zeno Way/Lawrence Expressway must consider the County's plans for the Lawrence Expressway Grade Separation project.

Figure 6.2: Transit Core West Subarea



Transit Core West Subarea Policy

TCW-P1 Encourage the development of a mixed-use village center, focused on Santa Vittoria Terrace; and capitalizing on existing tree assets and connectivity opportunities on Sonora Court.

Transit Core West Subarea Guidelines

TCW-UDG1 Design Sonora Court to be a special street with a strong open space/landscaped character incorporating the existing mature Redwood and Cedar trees.

TCW-UDG2 To allow for maximum visual interaction between ground floor uses and the pedestrian zone, active ground floor uses are required along properties that include Santa Vittoria Terrace for at least 75% of the building frontage. Active ground floor uses include:

- Mixed-use buildings with ground level commercial spaces (restaurants, retail, personal services, recreational and athletic facilities), office lobbies, and/or residential entrances and residential amenity spaces (gyms, community rooms, kitchens); along with private useable open spaces at the upper levels;
- Primary face of entertainment uses;
- Attached residential units, such as townhouses or live/work units, that are served by rear access drives; and
- Other uses and configurations that achieve the goal and intent of activating the street.

Figure 6.3: 1120-1130 Kifer Road Site Plan, including Santa Vittoria Terrace



TRANSIT CORE EAST

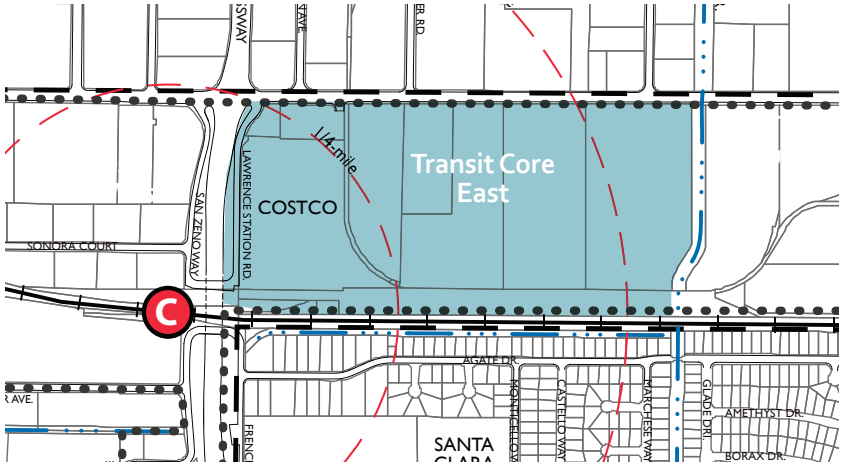
This large subarea east of Lawrence Expressway is bounded to the north by Kifer Road, the Caltrain tracks to the south, and Calabazas Creek to the east. In 2021, the Subarea includes the Costco site, Intuitive Inc. properties and other office/R&D uses. Major land use change is not expected in this subarea in the short term, but there may be opportunities for transitions to more transit- oriented uses and densities as well as circulation and access improvements with the new Loop Road, shared-use paths, and pathways.

There is an existing low and medium-density neighborhood in the City of Santa Clara south of the railroad tracks, and as of 2021, there are high-density residential developments being constructed north of the tracks in the City of Santa Clara's LSAP northeast of Kifer Road and Lawrence Expressway. Therefore, in the long term, this subarea is suitable for both employment and residential uses at relatively high densities. It is likely that Costco will remain in this location for many years. The Plan includes policies to ensure the long-term use of large-scale retail on the Costco site and two other adjoining sites at the southeast corner of Kifer Road and Lawrence Station Road/Lawrence Expressway.

The lack of north/south connectivity through this subarea is a significant impediment to improving access to the station. Improvements to provide pedestrian, bicycle and motor vehicle routes are needed. To this end, a critical new segment of the Loop Road, as well as a Class I shared-use path will traverse the Subarea paralleling the railroad tracks. Secondary pathways will also break up the existing large block pattern and provide connectivity in all directions. The Loop Road and pathways would align with the street system in the City of Santa Clara's LSAP, particularly Corvin Drive and Copper Road or Pancoast Plaza.

Calabazas Creek flows north on the east edge of the Subarea. The Creek is currently fenced, engineered with a trapezoidal concrete channel and serves as a drainage facility for Valley Water. As of 2021, it is inaccessible to the general public. However, the City of Santa Clara and Valley Water are moving forward with long-standing plans to transform the Creek into an attractive

Figure 6.4: Transit Core East Subarea



linear park and shared-use path facility in the near future. Therefore, the Creek has strong potential to become a form-giving design amenity for development along the creek. The design of future site and building improvements along the creek will therefore need to further enhance the linear park improvements.

As described in the Chapter 4 of this report, the County of Santa Clara's Roads and Airports Department is planning to grade-separate Lawrence Expressway adjacent to this subarea by depressing the roadway below grade. Grade-separation of the Expressway may change the configuration of Lawrence Station Road, may require a right-of-way dedication on private property, and may alter access patterns to this subarea. Redevelopment plans for properties along Lawrence Station Road /Lawrence Expressway must consider the County's plans for the Lawrence Expressway Grade Separation project.

Transit Core East Subarea Policy

TCE-P1 Support a transition of this area to a denser, transit-oriented neighborhood with new connectivity improvements through the historically large block pattern for more direct access to Lawrence Station. For the property at the east edge of the Subarea, orient development along Calabazas Creek to enhance future linear park improvements.

Transit Core East Subarea Guidelines

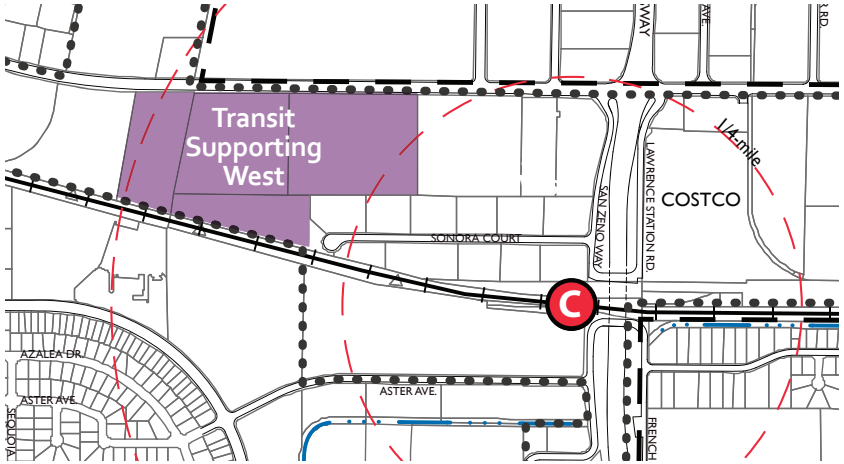
TCE-UDG1 Align connectivity improvements with streets in the City of Santa Clara's Lawrence Station Area Plan such as Corvin Drive, Copper Road, and Pancoast Plaza.

TCE-UDG2 Support the continued use of large-scale retail on the Costco site at 150 Lawrence Station Road. If redevelopment is to occur, the proposed development shall provide a minimum retail floor area of at least 25% of the site area, which is consistent with the size of the existing Costco building.

TRANSIT-SUPPORTING WEST

The Transit-Supporting West Subarea is located between Transit Core West and Kifer West, bounded by Kifer Road and the railroad tracks. The Subarea includes a large property owned by Intuitive Inc. (as of 2021) where two new office/R&D buildings and a parking structure were approved in 2016, along with retention of an existing office building at 1020 Kifer Road. The development project included a new pedestrian/bicycle shared-use path (constructed in 2020) that connects Kifer Road to Sonora Court. An industrial property at 960 Kifer Road is also part of this subarea. The Subarea is a flexible mixed-use area, suitable for both employment and residential uses. The minimum residential density is lower than that of the Transit Core subareas due to the Subarea's location further away from the station. Redevelopment may occur in the near term on the 960 Kifer Road property in the Subarea. A critical new segment of the western primary Class I shared-use path will traverse the rear of this parcel, linking with the recently constructed shared-use path constructed in 2020.

Figure 6.5: Transit Supporting West Subarea



Transit-Supporting West Subarea Policy

TSW-P1 Complete the development of this Subarea with the land uses allowed by the Plan and provide connections to adjoining subareas and Lawrence Station.

Transit-Supporting West Subarea Guidelines

TSW-UDG1 Provide a new primary Class I shared-use path linkage between the Kifer West subarea and the existing shared-use path on the property at 1020 Kifer Road.

TSW-UDG2 Provide bike/pedestrian access to Kifer Road from the Class I shared-use path.

TSW-UDG3 Ensure development is compatible with recent development elsewhere in the subarea and in the Kifer West subarea.

TRANSIT-SUPPORTING EAST

The Transit-Supporting East Subarea is located at the eastern end of the Plan area, bounded by Kifer Road on the north, the Caltrain tracks on the south, Calabazas Creek to the west and Uranium Drive on the east. It is surrounded on three sides by the City of Santa Clara, and therefore integration with the land use patterns and circulation systems in that city is necessary. Linear park improvements along Calabazas Creek as well as completion of new shared-use paths and pathways in the direction towards Lawrence Station will help stimulate development in this subarea. As with the Transit Core East, development would be oriented along the Creek.

The original LSAP's vision for this area was to remain an employment center and transition over time from lower intensity industrial to higher industrial/office/R&D intensities mainly because the area is outside the customary walking distance to the station. In 2021 this area was rezoned to allow flexible mixed-uses, including residential. The new shared-use paths and pathways would help shorten the distance to the station for pedestrians and bicyclists.

Figure 6.6: Transit Supporting East Subarea



Transit-Supporting East Subarea Policies

TSE-P1 Allow a transition of this area to include higher density residential and office/R&D uses that include connectivity improvements across Calabazas Creek to the Transit Core East subarea, and through to the station. Integrate the area better with the land use patterns and circulation systems of the surrounding area. Ensure compatibility of new residential uses with existing industrial/office/R&D uses, and vice versa.

TSE-P2 For the property at the west edge of the Subarea, orient development along Calabazas Creek to enhance future linear park improvements. Ensure new development enhances the Creek corridor and provides public access routes, activity, amenities, and an increased sense of security.

Transit-Supporting East Subarea Guidelines

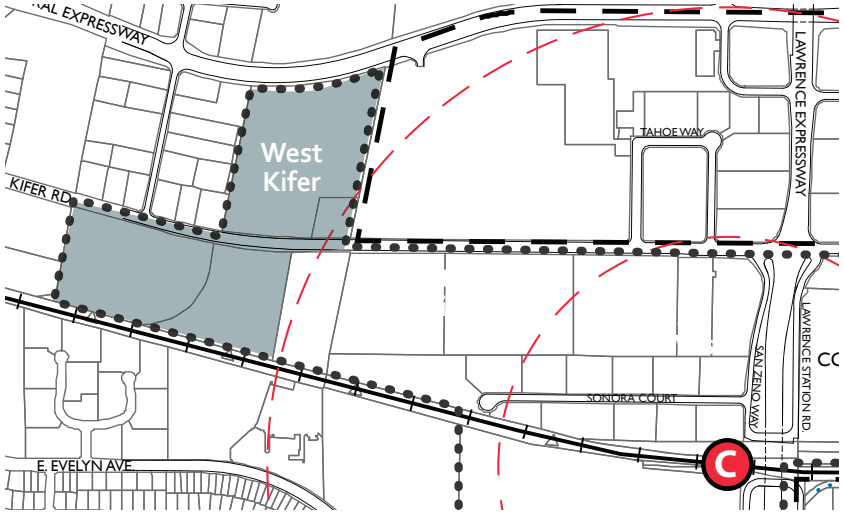
TSE-UDG1 Provide right-of-way dedications along Uranium Drive, where determined by the City, to be consistent with Uranium Drive cross section in the Sense of Place Plan, to install new sidewalk and bicycle lane improvements.

WEST KIFER

The West Kifer Subarea consists of the parcels on either side of Kifer Road near Commercial Street that were added to the Plan area as part of the 2021 amendments. The Subarea serves as the western gateway to the Plan area, and is adjacent to the Transit-Supporting West Subarea. The purpose of expanding the boundary was to provide a comprehensive planning approach for the Kifer Road corridor and accommodate future nonresidential development that would provide community benefits envisioned in the LSAP.

At the time of the 2021 update, the property owner of the West Kifer parcels (Intuitive Inc.) was planning a new corporate campus on the north and south sites of the Subarea. The north site was historically utilized as a private park for nearby company employees. It contains many mature trees that line the perimeter of the site. The south site was used for industrial and R&D purposes. The campus project would unify Intuitive Inc.'s existing workforce in the area, reducing daily trips between buildings. The project would also fulfill LSAP goals of increasing transit ridership through improved pedestrian and bicycle access to the station and sustainable development through enhanced green building features.

Figure 6.7: West Kifer Subarea



West Kifer Subarea Policies

WK-P1 Allow industrial intensification in this subarea to develop a major employment center within close proximity to Lawrence Station.

WK-P2 Preserve existing open space and tree assets, and provide direct pedestrian/bicycle connections to the station from Kifer Road.

West Kifer Subarea Guidelines

WK-UDG1 Provide the western primary Class I shared-use path on the south site, strategically located to connect Kifer Road through the Transit- Supporting West Subarea to Lawrence Station via Sonora Court and San Zeno Way.

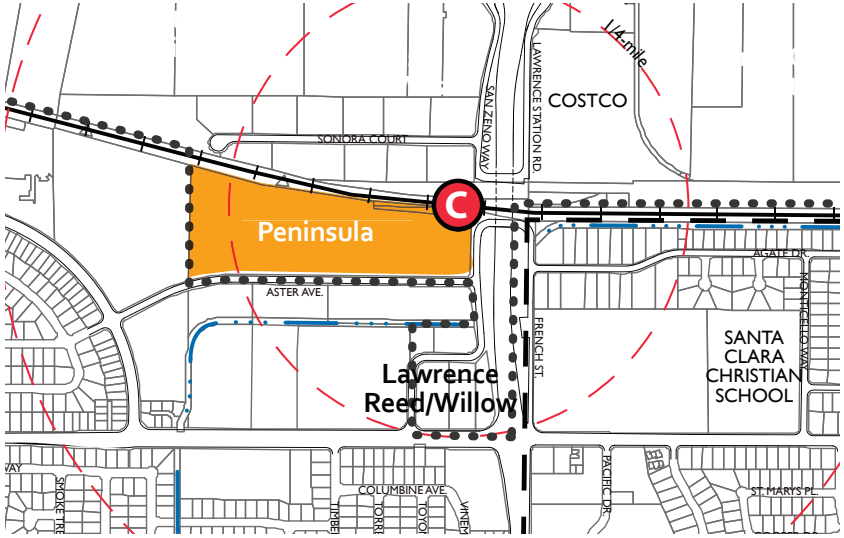
WK-UDG2 On the north site, maximize the existing tree canopy by preserving trees and maintain open space.

WK-UDG3 Remediate existing identified environmental contamination as part of site redevelopment.

PENINSULA

The Peninsula Subarea is the former Calstone and Peninsula Building Materials site at 1155-1175 Aster Avenue, which was approved for residential redevelopment with a small retail use in 2019. The site is located immediately south of the station across the tracks, at the northwest corner of Aster Avenue and Willow Avenue. The redevelopment project was modeled on the original 2016 LSAP development intent to capitalize on the strategic location of the site and convert to higher intensity residential uses with local serving retail services. The project form was designed to be compatible with the existing surrounding low/medium density neighborhood, where lower building heights were proposed near existing residential. Privately-owned open space with public access is available along Aster Avenue. Land along the west side of the site has been reserved for a future Class I shared-use path with a potential future rail crossing to Sonora Court. Long-term change on the site is not envisioned due to the recent redevelopment approval.

Figure 6.8: Peninsula Subarea



Peninsula Subarea Policies

PS-P1 Ensure new development is compatible with the existing surrounding neighborhood.

PS-P2 Continue to monitor the feasibility of constructing a new bicycle/pedestrian rail crossing at the northwest corner of the site.

Peninsula Subarea Guidelines

PS-UDG1 Incorporate pedestrian access routes in all directions, in order to provide convenient pedestrian movement through the subarea.

PS-UDG2 Locate tallest buildings and highest densities along the train tracks, transitioning to lower scale buildings to the south and west, where they adjoin or face nearby apartments and townhouses.

PS-UDG3 Concentrate small-scale retail uses, providing coffee, sandwiches or other services, at the eastern end of the subarea along Willow Avenue in order to serve residents as well as train passengers.

PS-UDG4 Locate public open space to be directly visible and accessible from Aster Avenue as well as from the west boundary pedestrian/bicycle linkage.

PS-UDG5 Pursue funding opportunities for a new bicycle/pedestrian rail crossing at the northwest corner of the site.

LAWRENCE/REED/WILLOW

The Lawrence/Reed/Willow Subarea consists of the small set of parcels located at the northwest corner of Reed Avenue and Lawrence Expressway, bounded by Willow Avenue on the west and north; and two parcels to the north across Willow Avenue. The parcels at the corner of Reed Avenue and Lawrence Expressway are currently a mix of retail and service uses. The two parcels north of that site are currently a commercial child care center and a 16-unit townhome development.

As described in the Chapter 4 of this report, the County of Santa Clara's Roads and Airports Department is planning to grade-separate Lawrence Expressway adjacent to this subarea by depressing the roadway below grade. Grade-separation of the Expressway will likely change the configuration at Lawrence Expressway and Reed Avenue, may require a right-of-way dedication on private property along the Expressway, and may alter access patterns to this subarea. Redevelopment plans at this corner must consider the County's plans for the Lawrence Expressway grade separation.

This subarea is envisioned as a mixed-use area with medium-high residential densities and services catering mostly to local needs. The Plan allows increases in density at the corner of Reed Avenue and Lawrence Expressway with flexible mixed uses along with a retail commercial requirement. The two parcels to the north will continue to allow residential uses in accordance with the R-5 zoning district. Since this subarea is centrally-located among residential neighborhoods south of the tracks and it is surrounded by important pedestrian corridors on three sides, new uses will be developed to enhance the pedestrian environment.

Lawrence/Reed/Willow Subarea Policy

LRW-P1 Redevelop this subarea with residential and neighborhood-serving non-residential uses that are designed for easy access by pedestrians, bicyclists and transit.

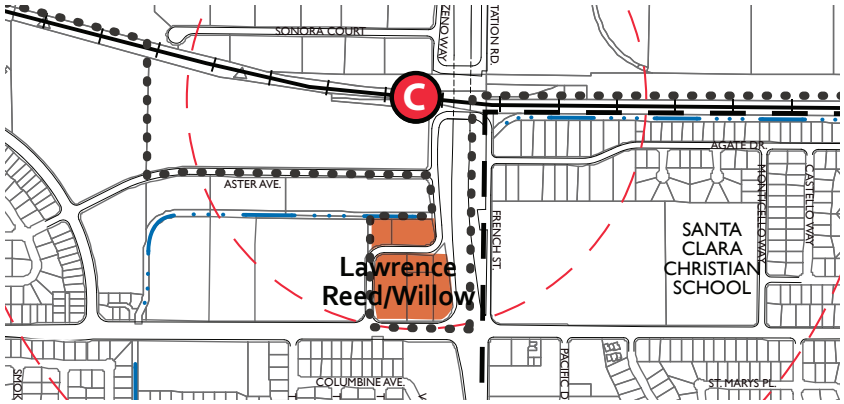
Lawrence/Reed/Willow Subarea Guidelines

LRW-UDG1 Locate retail uses along Willow and Reed Avenues in conformance with General Site Planning Guidelines earlier in this chapter.

LRW-UDG2 Site planning should prioritize enhanced bicycle and pedestrian access to Lawrence Station by providing a north-south shared-use path from Reed Avenue to Willow Avenue as shown in the Sense of Place Plan circulation diagram.

LRW-UDG3 Provide right-of-way dedications along Willow Avenue, where determined by the City to be consistent with the Willow Avenue cross section of the Sense of Place Plan, to install new sidewalk and bicycle lane improvements.

Figure 6.9: Lawrence/Reed/Willow Subarea



STREETSCAPE DESIGN GUIDELINES

INTRODUCTION

The street system in Sunnyvale provides the majority of the city's public space. It is the conduit through which most circulation passes, the place where a large amount of personal interaction and commerce occurs, a place of recreation, and the backdrop on which a memorable image of the city is created. While many people experience public parks and other open spaces occasionally, almost everyone experiences public streets daily. Creating a high-quality street environment is, therefore, of benefit to the vast majority of Sunnyvale citizens and visitors.

These guidelines emphasize the quality of the street environment by focusing detail on the design of the streetscape – the area framed by building walls. The quality of public streets is thus dependent upon two aspects:

- Improvements within the public right-of-way.
- The character of improvements to properties that abut the public right-of-way, particularly the ground level of buildings. Where it is appropriate to influence building design to achieve the goals for the public environment, specific requirements have been established.

Existing conditions as of 2021 in the Plan area vary widely from street to street and parcel to parcel and new development will vary depending on site conditions. Therefore, these guidelines are tailored to the specific conditions of individual development areas.

The framework of streets, both existing and proposed, varies between the portions of the Plan area located north and south of the railroad tracks. South of the tracks, a network of local, collector and arterial streets is well established and serves the existing neighborhoods well. The framework of this network will remain the same but with enhancements to the pedestrian and bicyclist realm, with better access to transit.

North of the Caltrain tracks, the existing framework of public streets and pedestrian ways differs markedly from the south. Streets such as Kifer Road, San Zeno Way and Lawrence Station Road frame the area, but there are no public rights-of-way available which penetrate through the area in either a north-south or east-west direction (with the exception of a short, dead- end segment of Sonora Court). As Chapter 4 describes, a new Loop Road, Class I shared-use paths, and pathways are needed to serve future development of the area and provide improved access to the station and other local destinations. These Streetscape Design Guidelines are therefore intended to supplement the proposed circulation framework and Sense of Place Plan and provide guidance on their design and character.

Streetscape Policies

ST-P1 Create a coordinated street environment that is supportive of new development and strengthens connections to Lawrence Station and other important neighborhood destinations.

ST-P2 Design and construct streets as Complete Streets: context-sensitive, safe, convenient and attractive for all modes of travel and users.

ST-P3 Create a pedestrian environment on the Loop Road, Class I shared-use paths, and pathways that is:

- Interesting, with appealing things to see, touch, hear and smell that makes one's time in the area a positive experience and encourages return visits.
- Attractive, with building and landscape improvements that create a beautiful setting in which people can walk, drive, shop, work, and live.
- Safe, allowing people to feel comfortable and secure, whether alone or in a group, during the day, evening and night.
- Successful, where walking becomes a primary means of local transportation, enhancing transit ridership and supporting a thriving neighborhood and retail climate.

The following guidelines provide both broad and detailed objectives for achieving these goals. Many elements of streetscape design should be consistent throughout the Plan area, while other elements may be more appropriate to particular street types or location. Therefore, these Guidelines contain two parts:

- General guidelines that apply to all streets in the Plan area.
- Guidelines that apply to specific streets or specific situations, both existing and new, in the Plan area.

GENERAL DESIGN GUIDELINES FOR NEW AND RENOVATED STREETS

Implementation of the following guidelines must take into account the cost and difficulty of disrupting existing conditions. Therefore, the guidelines are not rigid requirements. The idea is to adapt to existing conditions wherever necessary while ensuring the design intent and goals are achieved.

Curb Extensions (Bulbouts)

As described in Chapter 4, bulbouts will be provided when feasible throughout the Plan area. In general, they are only feasible on streets with on-street parking, because the bulbout extends into the parking lane, thereby widening the sidewalk. Therefore, their location must be carefully considered in order to minimize parking losses in areas where parking supply is critical.

In the Plan area, there are three types of bulbouts:

- Corner Bulbouts. This is particularly important at unsignalized and wide (multi-lane) intersections that carry large volumes of traffic. At signalized intersections, bulbouts have an added benefit of allowing slightly shorter signal cycle timing, thereby potentially improving traffic flow. Additionally, bulbouts improve walking conditions with shorter crossing distances and increased visibility for pedestrians.
- Transit Bulbouts (Transit Mini-Plazas) are typically located at corners with bus stop locations. They are longer to accommodate the length of a bus. Because of their larger size, they provide additional space for passenger queuing, shelters, seating and other transit-related amenities.
- Amenity Bulbouts can be placed in any location where additional sidewalk space is desired, such as Santa Vittoria Terrace. They provide opportunities for seating, planting, outdoor dining, furnishings and other amenities.

Curb Extensions (Bulbouts) Guidelines

SE-UDG1 Minimize impacts on existing drainage systems, transit turning requirements, parking lanes and rights-of-way, existing trees and pedestrian paths of travel when locating and installing curb extensions.

SE-UDG2 To the extent possible, accommodate subsurface utilities, including existing drainage facilities in the design and construction of curb extensions.







Sidewalk Paving

Sidewalk Paving Policy

SW-P1 To provide a permanent, durable, interconnected network of pedestrian walkways that is accessible to all users, easily maintained, and provides a generally consistent appearance throughout the Plan area. Allow variation in materials and design in special nodes, plazas and gathering points on privately owned and maintained sidewalks.

Sidewalk Paving Guidelines

SW-UDG1 In general, use natural concrete (without unique color additives) for all sidewalks, including areas where public sidewalks extend into the setback area of a parcel.

SW-UDG2 Prohibit special coloring, stamp patterns and unusual scoring patterns, except at special locations, since matching of colors and patterns can be difficult when future maintenance or repairs are conducted

SW-UDG3 On privately owned and maintained pathways (including those available for public access), use special paving materials, such as unit pavers made of brick, stone, or concrete at special nodes, plaza areas and streets, within curb extensions and other special pedestrian areas in order to differentiate them from the public sidewalk and define a specific place.





Street Planting

Street Planting Policy

STP-P1 Enhance the urban forest in the Plan area in order to:

- Provide shade and shelter
- Mitigate adverse environmental conditions such as wind and pollution
- Add scale to both pedestrian and vehicular streets
- Enhance property values
- Provide habitat for wildlife
- Manage stormwater
- Beautify the area.

Street Planting Guidelines

STP-UDG1 Plant new street trees on all streets while preserving existing trees wherever possible.

STP-UDG2 Locate street trees in the curb zone of the street (within 4-6 feet of the curb, depending upon sidewalk width) unless the width of the sidewalk and/or right-of-way prevents planting in that area. In such cases, locate street tree planting within the front setback of private parcels if possible.

STP-UDG3 Where feasible in on-street parking areas, plant trees in bulbouts to soften the visual impact of parking.

STP-UDG4 Use medium-to-large canopy trees on large streets as approved by the City Arborist.

STP-UDG5 Use pedestrian-scaled, ornamental trees to define small-scaled pedestrian ways as approved by the City Arborist.

STP-UDG6 To the extent feasible, space street trees at a distance on average of 35 feet.

STP-UDG7 Protect existing street trees wherever possible throughout the Plan area, particularly in the southern residential neighborhoods, along Kifer Road, San Zeno Way, Uranium Drive, and on Sonora Court.





(Top) An attractive "complete street" with access for pedestrians, bicycles and motor vehicles. Street trees and ground covers planted between the curb and sidewalk provide an attractive pedestrian zone and separate pedestrians from vehicular traffic.
(Bottom) Large deciduous canopy trees give definition and character to a neighborhood and provide shade in summer and sun in winter.

STP-UDG8 Where tree removal is unavoidable, provide replacement trees in accordance with the City's Tree Replacement Guidelines.

STP-UDG9 Ensure new tree plantings are appropriate for an urban environment and meet the following minimum criteria:

- Drought tolerance
- Ease of maintenance
- Trees native to the region
- Non-invasive root system
- Adequate canopy height to allow clearance for service, emergency and transit vehicles.
- Open branching and leaf structure to allow visibility both to and from buildings, particularly in retail areas.
- Deciduous (in most cases) to allow summer shade and winter sun to reach the pedestrian areas of the street.
- High-water table tolerance.
- Salt water tolerance to allow use of potential future recycled water systems.

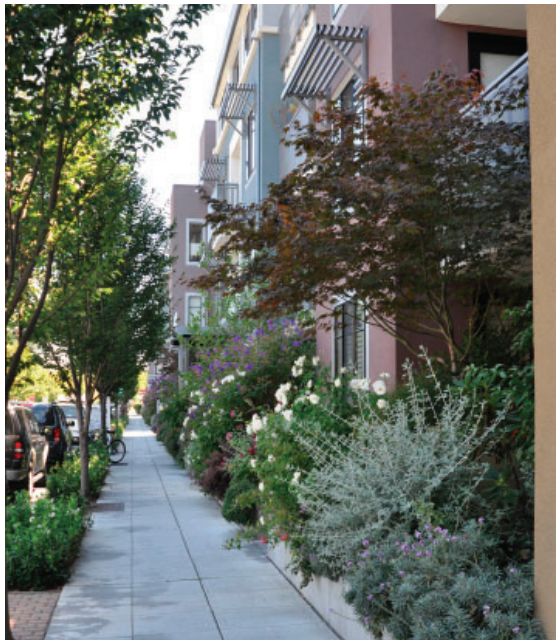
STP-UDG10 For shrub and groundcover planting in planting strips and medians, follow the criteria above for street trees. In addition:

- Select and maintain planting not to exceed 24" in height.
- Select and maintain plantings that will remain within the confines of the planting strip area.
- Provide means of crossing planting strips for motorists parked adjacent to the planting.





(Top) Bioswales along the street provide an attractive landscape with low water requirements while also assisting in drainage and stormwater management from paved surfaces.
(Bottom) Trees and shrubs can add scale, help soften edges, and beautify pedestrian streets.









A variety of streetscape improvements can be provided that are attractive, provide areas for stormwater management and minimize the need for irrigation.

Lighting

Lighting Policy

L-P1 Use lighting to create a nighttime environment that:

- Supports safety and security
- Is appealing and attractive
- Meets the functional needs for vehicular and pedestrian circulation
- Defines specific gateways streets, and subareas
- Enhances special areas, such as retail districts, parks, and natural features.
- Promotes a bird safe environment

Lighting Guidelines

L-UDG1 Utilize the LSAP lighting standard identified in the Sense of Place Plan, Figure 3-24, along public streets in order to create a unique district within the City. Refer to Figure 3-23 in the Sense of Place Plan for the locations of the LSAP lighting standard placement.

L-UDG2 On publicly-accessible shared-use paths and pathways, utilize the lighting standard identified in the Sense of Place Plan, Figure 3-24.

L-UDG3 Comply with Dark Sky goals and requirements in the selection of luminaires during project design.

L-UDG4 Provide roadway illumination levels on public and private streets per the City's Public Works Department roadway lighting design criteria.

L-UDG5 Utilize energy-efficient lighting, such as light-emitting diode (LED) bulbs and induction lighting of warm white color (with color temperatures ranging from 2700 to 3200 degrees Kelvin). Compact fluorescent and metal halide are acceptable alternatives if LED and metal halide are not feasible.

L-UDG6 Lighting metalwork should consist of dark colors that match other light poles in the area. Include an ultraviolet-protectant clear coating to prevent color fading.

L-UDG7 Consider the use of luminaires that provide white light, on all streets and pedestrian ways in the Plan area.

L-UDG8 On private property, use poles and fixtures that are attractive and complement the character of the street and building environment.

L-UDG9 Use pole heights that relate to the scale of the street /shared-use pathway/path and its users.

- On Santa Vittoria Terrace, the Loop Road, publicly accessible shared-use pathways and paths, and other internal private streets, mount luminaires on poles not exceeding 18 feet in height.
- On Kifer Road, Uranium Drive, Lawrence Station Road, San Zeno Way, Sonora Court, Aster Avenue, Willow Avenue, and Reed Avenue, mount luminaires on poles not exceeding 30 feet in height. Poles equipped with enhanced wireless communications technology may exceed this height with City review.

L-UDG10 Shielding and careful placement shall be used for all light fixtures to prevent glare and light spillover for pedestrians, motorists, and nearby residences.

- The output of all area lighting fixtures should be shielded and directed below the horizontal to prevent light pollution and preserve dark skies.
- Building facade uplighting, roof "wash" lighting, and landscape uplighting should be carefully shielded to restrict lighting to the intended surfaces only, prevent spill lighting (especially towards residences) and operated on timers that shut off illumination entirely after midnight nightly.
- Light sources of low level and stairway lighting should be shielded from direct view.

L-UDG11 Light poles on the top level of a parking garage shall be shielded to avoid up-lighting.

L-UDG12 Adequate lighting in public open spaces shall be included for evening/nighttime uses and security and should be integrated as design features, to provide ambient lighting. Path lighting may be used to highlight main pedestrian circulation. Pole lighting should be placed adequately and equipped with necessary cut-off fixtures, to prevent light pollution and glare to the adjacent properties.

Street Furnishings

Street furnishings are the various elements that are placed along sidewalks and plazas. With the exception of transit shelters, this section only applies to publicly-accessible private streets, shared-use pathways, and paths. Street furnishings include:

- Seating
- Trash receptacles
- Consolidated newspaper racks/stands
- Bicycle parking facilities and lockers
- Tree guards
- Planters
- Signage and wayfinding elements
- Transit shelters

Street Furnishing Policy

SF-P1 Provide well-designed furnishings along publicly-accessible private streets, shared-use pathways, and paths that are:

- Useful and comfortable for pedestrians
- Meet the functional needs of utilities and services
- Attractive
- Generally consistent throughout the Plan area.

Street Furnishings Guidelines

SF-UDG1 Generally, use street furnishings that are:

- Designed to convey a coordinated design expression between all of the furnishing elements in the Plan area.
- Readily available from established manufacturers to avoid expensive custom fabrication and ensure ease of replacement.
- Durable and easy to maintain. Components should be made of durable, high-quality materials such as painted or stainless steel, painted cast iron, painted or powder-coated aluminum, and integrally colored precast concrete or composite materials.

SF-UDG2 Metal surfaces should be powder-coated or painted with highly durable metal paints such as waterborne acrylic polyurethane. An ultraviolet protectant clear coating should be used to prevent color fading.

SF-UDG3 Incorporate unique, specially-designed street furnishing elements to provide a unique character in special areas such as Santa Vittoria Terrace.

SF-UDG4 Design and/or finish utility and service devices to either visually recede or, as appropriate, match other furnishing items.

SF-UDG5 Fully screen all service facilities serving private property from the public street and adjoining properties with walls, fences, and/or landscaping treatments. Colors and finishes of enclosures should be coordinated with colors and finishes of fencing, other painted metal surfaces to be used onsite, or associated with the building's material and color scheme.

The following guidelines apply to specific street furnishing elements:

Seating

SF-UDG6 Install seating that is user-friendly, but does not encourage long term use and sleeping. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

Trash Receptacles

SF-UDG7 Provide two trash receptacles at diagonally opposite corners of each private street intersection in areas with high pedestrian circulation, such as Santa Vittoria Terrace. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

SF-UDG8 Provide trash receptacles with recycling options.

Bicycle Parking Facilities and Lockers

SF-UDG9 Provide bicycle parking facilities on each side of private streets in each block per VTA guidelines. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

SF-UDG10 Place bicycle parking facilities in the curb zone such that locked bicycles do not obstruct the sidewalk pedestrian path of travel.

SF-UDG11 In places where a larger number of bicycle parking facilities are needed, consider the use of an on-street parking space or creation of a curb extension (amenity bulbout) for bicycle parking.

SF-UDG12 Property owners should monitor the use of bicycle parking facilities and adjust the location, quantity and type where warranted. This process should involve the local bicycling community.



Bicycle parking located in the curb zone avoids the pedestrian path of travel.

Transit Shelters

SF-UDG13 Support the provision of transit shelters at all VTA bus transit stops. Coordinate with VTA on specific design requirements and locations.

SF-UDG14 Transit shelters may be custom-designed or pre-manufactured products.

SF-UDG15 Transit shelter facilities may be incorporated into adjacent buildings.

SF-UDG16 Ensure transit shelter facilities are publicly-accessible 24 hours per day.

SF-UDG17 Include the following features in transit shelters, subject to VTA approval:

- Shelter from wind and rain
- Seating
- Lighting, either from street sources or within the shelter
- Information related to area-wide wayfinding, transit routes, scheduling and costs
- Transparent design to allow users to be visible from the surrounding streets and feel secure
- Constructed and sited to minimize visual obstruction of adjacent businesses and residences
- ADA compliant, both in design and siting
- Compatible with the character of the street and surrounding built environment.





On-street Signage and Wayfinding

Today, wayfinding throughout the Plan area is exceedingly difficult. Even for longtime residents and employees of the area, it is not clear that the linkage to Lawrence Station and other local destinations is close and easy. The new framework of the Loop Road, Class I shared-use paths, and pathways will significantly help to facilitate connections for all travelers to the station. However, there will remain a need for a coherent and clear system of signage to direct pedestrians, bicyclists and motorists to the station and other important area destinations. The Sense of Place Plan includes new gateway signage to highlight entry into the Plan area and directional signage catered to pedestrians and bicyclists to Lawrence Station and other destinations.

On-Street Signage and Wayfinding Goal

OSW-G1 Implement the Sense of Place Plan's coordinated signage program that:

- Clearly and attractively directs people to Lawrence Station and other neighborhood destinations, services and amenities.
- Reinforces a sense of place with design elements that give the neighborhood a unique identity.
- Provides gateway signs to highlight entry into the Plan area.

On-Street Signage and Wayfinding Guidelines

OSW-UDG1 Follow the Sense of Place Plan that includes larger gateway signage at key intersections and Plan area entrances (Figure 3-20) and smaller directional signage (Figures 3-21 and 3-22) as shown in the Streetlife and Wayfinding Plan (Figure 3-17).

OSW-UDG2 Include the following features in the planning and installation of the signage and wayfinding system:

- Direct pedestrians, bicyclists and motorists to major area destinations, especially Lawrence Station.
- Define and mark gateway entries into the Plan area.
- Promote transit use by indicating the location of bus and shuttle stops and system routing.
- Facilitate efficient traffic flow by directing drivers to destinations such as important roadways and parking facilities.
- Select typography, graphics, form, illumination and mounting to be compatible with the design of area street furnishings.
- Avoid visual clutter through the creation of efficient and clear signage that does not require a large amount of repetition.
- Consolidate information on a single pole, whenever feasible.
- Design directional signage in a consistent manner throughout the Plan area, regardless of the street type or land use.
- Design signage and way finding system to be appropriately-scaled to the various modes and speeds of travel.

OSW-UDG3 Coordinate with the County of Santa Clara, Caltrain and VTA on the design requirements of all public wayfinding systems.

Banners in Rights-of-Way

OSW-UDG4 Banners in the public right-of-way may only be installed and maintained by the City. Private banners with advertising messages are prohibited.



Intersection Design (General Guidelines)

As the Plan Area redevelops over time, modifications to several existing intersections will be required. This section describes guidelines that apply to the renovation of existing intersections as well as the construction of new intersections within private development projects in the Plan area (see Figure 6.10). The guidelines that follow are conceptual in nature. Further traffic and civil engineering studies will be required prior to design and construction at specific locations.

General Intersection Design Policy

ID-P1 Enhance safety and convenience for all intersection users, particularly for pedestrians and bicyclists, in a manner that is compatible with the design character of the particular street and neighborhood.

General Intersection Design Guidelines

ID-UDG1 As identified by the City's Transportation and Traffic Manager, provide highly visible crosswalks at key intersections in accordance with City standards and the Sense of Place Plan.

ID-UDG2 Where feasible, provide minimal curb return radii as determined by the City's Transportation and Traffic Manager in order to reduce pedestrian street crossing distance and slow turning traffic.

ID-UDG3 Wherever feasible, provide curb extensions (bulbouts) with a 15-foot maximum curb return.

ID-UDG4 Where curb extensions (bulbouts) are installed, install drainage improvements as needed in order to allow clear walkways. Alternatively, curb extensions may be built separate from the existing curb to continue drainage along the existing curb. Ensure such improvements are ADA compliant.

ID-UDG5 Provide lighting adequate for intersection safety as well as illumination of sidewalks.

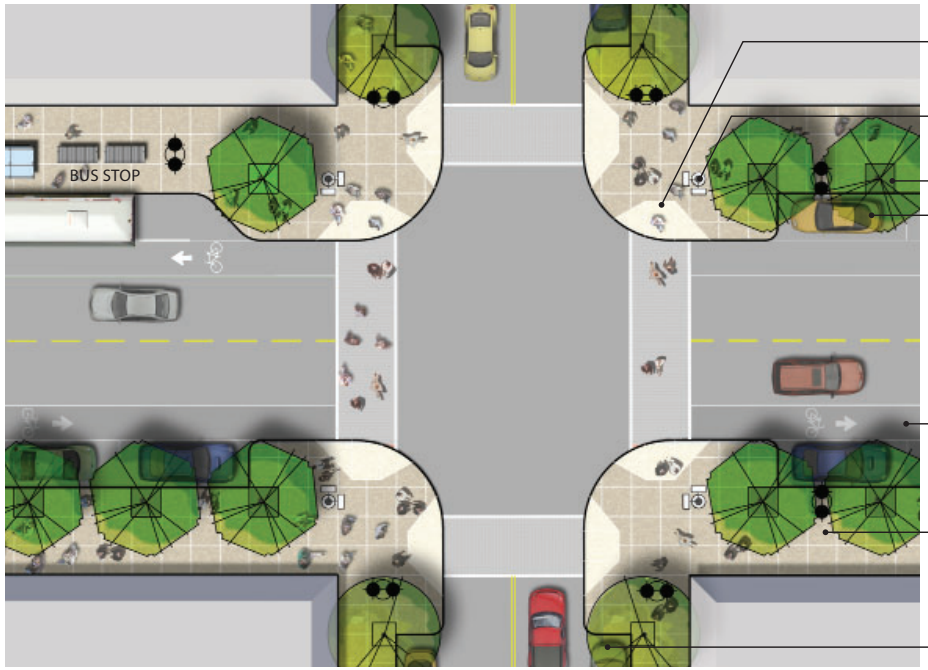
ID-UDG6 Stripe bicycle lanes, where designated, continuously to the stop bar.

ID-UDG7 At signalized intersections, provide:

- Pedestrian countdown signals to indicate how many seconds are available for pedestrians to cross and to signal motorists that they should anticipate and yield to pedestrians in the intersection.
- Visual and audible cues for pedestrians who are sight and hearing impaired.

ID-UDG8 Coordinate with the County of Santa Clara to eliminate all "free-right" turns at Lawrence Expressway intersections in the Plan area.

Figure 6.10: Typical Private Street Intersection



CURB BULB-OUT (TYP)

PEDESTRIAN ORIENTED STREET LIGHTS

STREET TREES

PARALLEL PARKING BOTH SIDES

BICYCLE LANE BOTH DIRECTIONS

ENHANCED PAVING ENCOURAGED ON PRIVATE STREETS AND DETERMINED DURING DESIGN PHASES OF FUTURE WORK

PARALLEL PARKING







DESIGN GUIDELINES FOR SPECIFIC STREETS

The following guidelines are intended to provide more direction for specific streets that will play a particularly important functional role within the Plan area.

Loop Road

Loop Road Design Policy

LR-P1 The Loop Road will be a primary collector street, designed to convey the character of a richly-landscaped green boulevard, providing direct north-south and east-west connections to Lawrence Station and other destinations in the Plan area north of the Caltrain tracks for all modes of travel. Since the Loop Road will traverse through private property, it is envisioned as a private street with public access easements through each property.

Completely new road area will be constructed east of Lawrence Expressway and on the parcel south of 1120-1130 Kifer Road to connect Santa Vittoria Terrace to Sonora Court. Existing streets on Sonora Court, San Zeno Way, and Lawrence Station Road will form the remaining loop road area west of Lawrence Expressway.

Street Cross Section Guidelines

LR-UDG1 Provide a roadway and pedestrian realm width of 60 feet.

LR-UDG2 Within this width, provide the following functional elements: one vehicular travel lane in each direction, Class IIB bicycle lanes, and a ten-foot wide pedestrian zone with sidewalks and street trees per Figure 3-6 of the Sense of Place Plan.

LR-UDG3 Coordinate with VTA to ensure the street cross-section is adequate for bus transit usage.

Intersection Design Guidelines

LR-UDG4 Install transit bulbouts, where appropriate, at all intersections.

LR-UDG5 Provide mid-block pedestrian crossings, as determined by the City's Transportation and Traffic Manager, along the length of the Loop Road if distances between intersections exceed 400 feet.

LR-UDG6 Link mid-block pedestrian crossings directly to pedestrian routes to the station and other destinations.

LR-UDG7 Employ traffic calming devices on the Loop Road as determined by the City's Transportation and Traffic Manager, to ensure safe pedestrian crossings.

Pedestrian Environment Guidelines

LR-UDG8 Provide a minimum sidewalk width of six feet with a four-foot wide planting strip along the curb.

Loop Road (Santa Vittoria Terrace Segment)

Future retail uses and services will be focused along Santa Vittoria Terrace, a new pedestrian-oriented mixed-use private street (with public access) that runs north-south between Kifer Road (at the intersection of Semiconductor Drive) and Sonora Court. As of 2021, Santa Vittoria Terrace has been constructed through 1120-1130 Kifer Road, and the road would continue through a parcel to the south upon time of its redevelopment to connect to Sonora Court. Alternatively, the road may continue through the Kifer Road parcel to the east, connecting to San Zeno Way. This street will form the walkable heart of the Transit Core West neighborhood, providing neighborhood-serving goods and services for residents and workers in the Plan area.

The character of the street is envisioned as a walkable, mixed-use neighborhood commercial street.

Loop Road (Santa Vittoria Terrace Segment) Retail Street Design Policies

SV-P1 The policies for this street include the following:

- Promote and emphasize pedestrian activity.
- Create an environment that supports the development of pedestrian-oriented retail.
- Support transit usage, particularly Caltrain, with safe and attractive pedestrian circulation to and from the station and nearby bus transit stops.

- Create a distinct identity for the retail area.
- Design for low vehicular travel speeds.

Street Cross Section Guidelines

SV-UDG1 Provide a roadway and pedestrian realm width of 80 feet.

SV-UDG2 Within this width, provide the following functional elements: one vehicular travel lane in each direction, on-street parking, Class II bicycle lanes and a 15-foot wide pedestrian zone per Figure 3-7 of the Sense of Place Plan.

SV-UDG3 Install traffic calming measures as determined by the City's Transportation and Traffic Manager to ensure traffic speeds will be low.

SV-UDG4 Coordinate with VTA to ensure the street cross-section is adequate for bus transit.

Intersection Design Guidelines

SV-UDG5 Provide curb extensions (corner bulbouts) at all intersections.

Pedestrian Environment Guidelines Guidelines

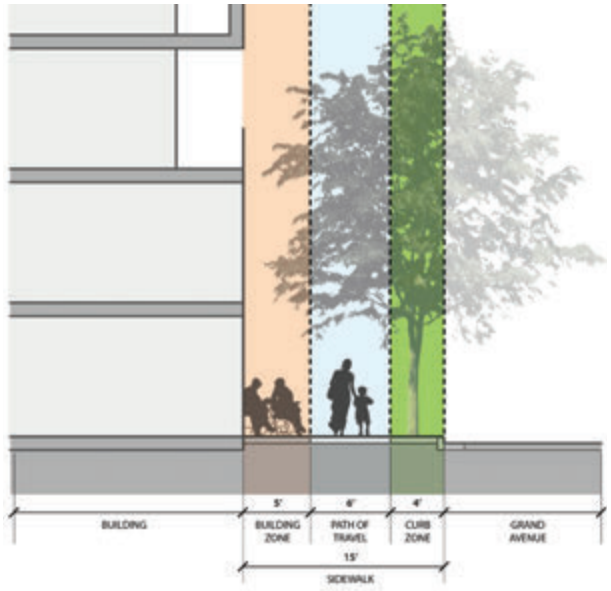
SV-UDG6 Provide a minimum sidewalk width of 15-feet (five-foot building zone, six-foot pedestrian circulation zone, four-foot wide curb zone). See Figure 6.11.

SV-UDG7 Since the buildings along the street will be built at, or near, the back of sidewalk, the sidewalk is defined here as the entire area between the curb and the building wall. The sidewalk may be contained completely within private property with a public access easement.

SV-UDG8 Subdivide the sidewalk into three zones (see Figures 6.11 and 6.12):

- Curb Zone: minimum four feet wide, containing the elements that separate the sidewalk from the street and provide the necessary infrastructure to support pedestrian and motorist activity, including lighting, signage, furnishings, street trees, and other vertical elements.

Figure 6.11: Section of of Santa Vittoria Terrace Pedestrian Zone





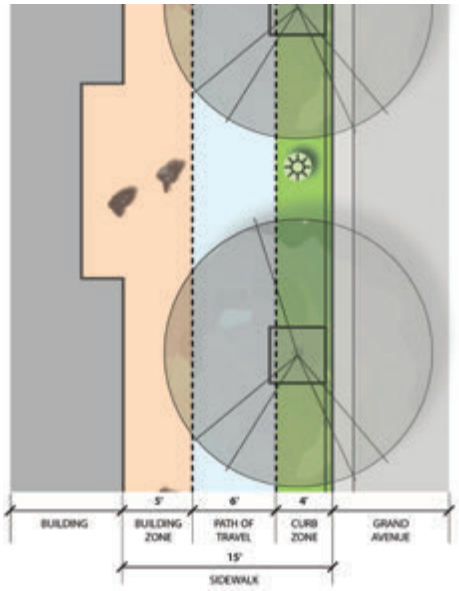
- Pedestrian Circulation Zone: minimum six-feet wide, and clear of obstruction.
- Building Zone: immediately adjacent to the building wall. Depending on the width of the overall sidewalk, the building zone may contain amenities such as seating, outdoor dining, merchandise displays, planting or architectural elements of the building, as long as these do not interfere with pedestrian movement.

SV-UDG9 Plant pedestrian-scaled ornamental trees unique to this location along the street.

Setback Guidelines

SV-UDG10 Locate ground floor retail at the back of sidewalk (zero setback).

Figure 6.12: Plan View of Santa Vittoria Terrace Pedestrian Zone





Sonora Court

Sonora Court will become a key east-west segment of the Loop Road accessing Lawrence Station on the west side of Lawrence Expressway. It will also link the new east-west primary Class I shared-use path at the cul-de-sac to the station. The most important assets of the street, the existing mature Redwood and Cedar trees, will be preserved with new roadway and sidewalk improvements.

Sonora Court Design Policies

SC-P1 The design policies for Sonora Court include the following:

- The existing Redwood and Cedar trees shall be preserved and protected and shall not be removed.
- Design the street (particularly the pedestrian zone) to capitalize on the existing trees and wide planting areas to create a mature, park-like environment, with attractive, usable outdoor urban spaces that relate to, and enhance future building development along the street.
- Capitalize on the existing Redwood and Cedar trees to create a unified design vocabulary that is unique from other street segments.
- Recycled water irrigation is prohibited within the dripline of Redwood and Cedar trees.

Street Cross Section Guidelines

SC-UDG1 Provide an overall public right-of-way width of 56 feet.

SC-UDG2 Within this right-of-way, retain the existing paved roadway cross- section and curb locations and the existing curbside planting strip in order to avoid disturbance to the root systems of the Redwood and Cedar trees.

SC-UDG3 Reallocate the paved street space between the curbs to provide the following functional elements: one vehicular travel lane in each direction, Class II bicycle lanes, and parking on the north side of the street (see Figure 3.16 of the Sense of Place Plan).



The mature redwood trees on Sonora Court are one of the strongest natural assets in the Plan area. Their protection is a high priority.

Pedestrian Environment Guidelines

SC-UDG4 Retain the curbside planting strip where the Redwoods and Cedars are located at its current dimension.

SC-UDG5 Incorporate small outdoor seating areas for passive activities and outdoor dining.

SC-UDG6 Utilize the existing location and footprint of private building walkways for new public sidewalks in order to protect the existing trees. Require public sidewalk easements for legal access.

SC-UDG7 Exercise extreme care when initiating construction activities in the vicinity of the Redwood and Cedar trees. Minimize changes within the planting strip containing the existing trees.

SC-UDG8 Before construction activities, consult with a certified arborist and prepare a tree protection plan.

Setback Guidelines

SC-UDG9 Retain the existing building streetwall line (set back from the curb) to the maximum extent possible in order to protect the existing Redwoods and Cedars and reinforce the park-like character of the street.

Kifer Road

Kifer Road is an important existing thoroughfare, designated by the City of Sunnyvale as a Commercial/Industrial Collector, which must accommodate relatively high volumes of traffic as well as transit vehicles and trucks. Additionally, the majority of Kifer Road through the study area is shared with the City of Santa Clara. Kifer Road was designed with an emphasis on accommodating vehicular traffic, with unappealing facilities for pedestrians and bicyclists, no on-street parking and few areas of attractive planting and streetscape improvements. The Sense of Place Plan includes improvements to Kifer Road for pedestrians and bicyclists, which include wider and continuous sidewalks, bicycle lanes with buffers, and a new landscaped median with left-turn pockets.

Kifer Road Design Policies

KR-P1 The policies for Kifer Road include the following:

- Ensure it provides efficient access for motor vehicles and bus transit without consuming unnecessary excess quantities of land for that purpose.
- Enhance its usability for pedestrians and bicyclists.
- Strengthen the existing visual quality and character of the street as a green boulevard.

Street Cross Section Guidelines

KR-UDG1 If feasible, retain the existing roadway curb locations. However, right-of-way dedications are required if existing widths do not accommodate the Sense of Place Plan upgrades.

KR-UDG2 Reallocate the paved street space between the curbs to provide the following functional elements: two vehicular travel lanes in each direction, a landscaped center median with left turn pockets, and Class IIB bicycle lanes (see Figure 3-8 in the Sense of Place Plan).

KR-UDG3 Coordinate changes to the cross-section of Kifer Road with the City of Santa Clara and the County of Santa Clara (near Lawrence Expressway).

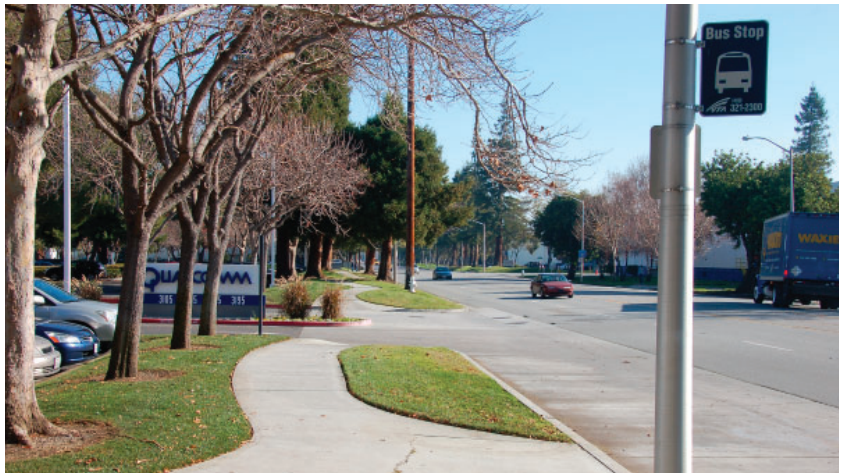
Pedestrian Environment Guidelines

KR-UDG4 Between the curb and the building setback line, include generous plantings of large trees, signage and lighting, and a wide sidewalk.

KR-UDG5 Provide a minimum sidewalk width of ten feet inclusive of four-foot wide tree wells and six-foot travel path.

KR-UDG6 Preserve all existing street trees along Kifer Road to the maximum extent possible.

KR-UDG7 Infill areas that lack existing trees with new street tree plantings.



Meander sidewalks on existing streets where necessary to provide a separation between pedestrians and vehicular traffic and avoid existing mature trees.

KR-UDG8 Complement the existing character of the street by infilling new trees in an informal arrangement with a variety of species.

New Internal Local Circulation Streets

All other internal streets on private property shall be subject to the following criteria.

New Internal Local Circulation Streets Design Policies

NI-P1 Place streets in locations that can connect to routes to Lawrence Station and other neighborhood destinations.

NI-P2 Provide public access on internal streets identified in the Sense of Place Plan.

NI-P3 Promote and emphasize pedestrian activity.

NI-P4 Design for low vehicular travel speeds.

Street Cross Section Guidelines

NI-UDG1 To the maximum extent feasible, establish the grid of internal streets with a pattern of blocks no longer than 400 feet on a side.

NI-UDG2 Provide a minimum width of 50 feet.

NI-UDG3 Within this width, provide the following minimum functional elements: one vehicular travel lane in each direction, on-street parking on one side of the street, and a pedestrian zone with sidewalks and a planting strip on both sides of the street.

NI-UDG4 Install traffic calming measures as determined by the City's Transportation and Traffic Manager to ensure traffic speeds will be low.

NI-UDG5 Due to low vehicular travel speeds, bicycles will share the street with vehicular traffic, either in a Class III or Class IIIB condition as determined by the City.

NI-UDG6 Employ traffic calming devices to ensure safe pedestrian crossings.

NI-UDG7 Build streets per City standards for residential streets.

Pedestrian Environment Guidelines

NI-UDG8 Provide a minimum sidewalk width of six feet separated from the street by a minimum four-foot-wide planting strip containing street trees, lighting and signage.

Setback Guidelines

NI-UDG9 In general, set buildings back a minimum of ten feet from the back of sidewalk to allow for landscaping unless a variation in setback is warranted due to local conditions.

Primary Class I Shared-Use Paths

Primary Shared-Use Paths Design Policies

PT-P1 Complete the primary shared-use-path circulation framework in the Sense of Place Plan with a network of publicly accessible routes for pedestrians and bicycles.

PT-P2 Ensure pedestrian/bicycle ways are safe and accessible to all users.

PT-P3 For the segment of the shared-use path east of Calabazas Creek, encourage coordination with Union Pacific Railroad to locate the shared-use path within the existing rail spur area. If this is infeasible, locate the shared-use path along the rear of private property adjoining the spur.

Primary Shared-Use Paths Cross-Section

PT-UDG1 When located in an open landscape, provide a minimum width of 20 feet, and strive for 26 feet.

PT-UDG2 Within this shared-use path width, provide a minimum paved width of 14 feet, inclusive of shoulders. This will allow adequate room for multiple pedestrian and bicycle users as well as maintenance and emergency vehicles, if needed.

Design and Materials Guidelines

PT-UDG3 Use concrete or similar permanent paving. Decomposed granite or other soft surface materials are prohibited.









PT-UDG4 Provide continuous pedestrian-scaled lighting on all shared-use paths to ensure a feeling of security.

PT-UDG5 Use overhead lighting rather than with bollards to allow easy visibility of oncoming pedestrians and bicyclists.

PT-UDG6 Plantings may be of a design that is either consistent with the palette of adjoining properties or of a design that delineates the trail.

PT-UDG7 Ensure that plantings do not obscure visibility of the shared-use path from surrounding properties and public spaces and do not interfere with emergency vehicle access.

PT-UDG8 Provide amenities like seating, water fountains, and trash receptacles to provide a comfortable and inviting environment for the shared-use path users.

Secondary Pedestrian Paths

PP-P1 Complete the secondary pedestrian path circulation framework in the Sense of Place Plan with a network of publicly accessible routes for pedestrians, and bicycles when local conditions permit.

Secondary Pedestrian Pathways Cross-Section

PP-UDG1 When located in an open landscape, provide a minimum width of 20 feet.

PP-UDG2 Within this path width, provide a minimum paved width of 12 feet, inclusive of shoulders. This will allow adequate room for multiple pedestrian users as well as maintenance and emergency vehicles, if needed.

Design and Materials Guidelines

PP-UDG3 Use concrete or similar permanent paving. Decomposed granite or other soft surface materials are prohibited.

PP-UDG4 Provide continuous pedestrian-scaled lighting on all paths to ensure a feeling of security.

PP-UDG5 Use overhead lighting rather than bollards to allow easy visibility of oncoming pedestrians.







PP-UDG6 Plantings may be of a design that is either consistent with the palette of adjoining properties or of a design that delineates the pathways.

PP-UDG7 Ensure that plantings do not obscure visibility of the paths from surrounding properties and public spaces and do not interfere with emergency vehicle access.

PP-UDG8 Provide amenities like seating, water fountains, and trash receptacles to provide a comfortable and inviting environment for the pathway users.

Other Streets

Lawrence Expressway

As mentioned previously in this Plan, the Expressway is owned and managed by the County of Santa Clara, and therefore is not under the jurisdictional control of the City of Sunnyvale. The County is planning major modifications to the Expressway in the segment that traverses the Plan area, including grade-separation below grade. These modifications have the potential to greatly improve local accessibility and quality of the neighborhoods in the Plan area. However, these improvements will likely require significant land dedications on properties along Lawrence Expressway.

Lawrence Expressway Policy

LE-P1 Work with the County of Santa Clara on the Lawrence Expressway Grade Separation Project to study planned changes to the expressway, San Zeno Way, Lawrence Station Road, Kifer Road, Reed Avenue, and other streets and properties affected by the project.

Lawrence Expressway Design Guidelines

LE-UDG1 Improve the intersections at Reed/Monroe and Kifer, including the provision of pedestrian countdown timers.

LE-UDG2 Improve the appearance of the embankments by providing additional landscape improvements.

LE-UDG3 Incorporate streetscape improvements to areas not affected by the grade separation project during development review.

Willow Avenue

Willow Avenue currently provides the only vehicular access to the Lawrence Caltrain station from the south, and is also a key access route for pedestrians and bicyclists. Improvements to Willow Avenue between Lawrence Station and Aster Avenue were required as part of the redevelopment of the 1155-1175 Aster Avenue (former Calstone/Peninsula Building Materials site). The Sense of Place Plan includes provisions for pedestrian and bicycle access improvements.

Design Policy for Willow Avenue

WS-P1 Design to be safe and attractive.

Design Guidelines for Willow Avenue

WS-UDG1 Provide continuous sidewalks on Willow Avenue. Require dedications on the east side of the street for street and sidewalk improvements with a minimum six-foot paved width and four-foot minimum tree wells (see Figure 3-14 of the Sense of Place Plan).

WS-UDG3 Accommodate bicycles in the roadway by providing Class IIB bicycle lanes south of Aster Avenue and Class II bicycle lanes north of Aster Avenue.

Reed Avenue

Reed Avenue is a wide residential collector street that traverses a small portion of the LSAP boundary along parcels in the Lawrence/Reed/Willow Subarea. The Sense of Place Plan includes minor enhancements to Reed Avenue for pedestrian and bicycle access improvements.

Design Policy for Reed Avenue

RA-P1 Design to reduce the visual width of the street and improve safety for bicyclists with Class IIB bicycle lanes. Provide sidewalk enhancements for pedestrians, especially near the existing VTA bus stop near the intersection at Willow Avenue.

Design Guidelines for Reed Avenue

RA-UDG1 On the north side of Reed Avenue, provide sidewalks with a minimum six-foot paved width and four-foot minimum tree wells (see Figure 3-12 in the Sense of Place Plan).

RA-UDG2 Reconfigure the street by reducing travel lane widths with Class IIB bicycle lanes. Retain on-street parking on both sides of the street.

RA-UDG3 Provide a curb extension (corner bulbout) at Reed Avenue and Willow Avenue if determined feasible by the City.

Aster Avenue

Aster Avenue along the Plan area boundary was required to be improved as part of the redevelopment of the 1155-1175 Aster Avenue project being improved as part of the redevelopment of (the former Calstone/ Peninsula Building Materials site). The improvements will close a major gap in pedestrian circulation through a construction of new sidewalk along the frontage. The existing bicycle lanes will be widened, and a new two-way left turn lane will be installed in the center of the street. Crossing improvements to the Willow Avenue and Aster Avenue intersection will also be made.

Design Policy for Aster Avenue

AA-P1 Maintain the quality of improved pedestrian and bicycle conditions and seek out additional enhancements in the future as needed.

Uranium Drive

Uranium Drive is a cul-de-sac at the east end of the LSAP with access to Kifer Road and Bowers Avenue (via Mead Avenue) in the City of Santa Clara. Uranium Drive is envisioned to be significantly enhanced with new sidewalks and bicycle lanes, and will be the location of the main trailhead for the new primary Class I shared-use path. Improvements to this street must be done in consultation with the City of Santa Clara given that the street centerline serves as the City boundary with Santa Clara.

Design Policy for Uranium Drive

UD-P1 Transform Uranium Drive into a complete street with improved bicycle and pedestrian facilities. Preserve existing mature street trees on the City of Sunnyvale side of the street.

Design Guidelines for Uranium Drive

UD-UDG1 Provide sidewalks with a minimum six-foot paved width and four-foot minimum tree wells. Require sidewalk dedications where determined by the City.

UD-UDG2 Reallocate the paved street space between the curbs to provide the following functional elements: one vehicular travel lane in each direction (with narrowed lanes), Class IIB bicycle lanes, and on-street parking on the City of Santa Clara side. Remove on-street parking on the City of Sunnyvale side to accommodate the new bicycle lanes. See Figure 3-11 of the Sense of Place Plan.

UD-UDG3 Preserve all existing street trees along Uranium Drive to the maximum extent possible.

UD-UDG4 Coordinate changes to the cross-section with the City of Santa Clara.

UD-UDG5 Locate the primary trailhead at the Union Pacific rail spur, or on adjoining parcels if acquisition of the rail spur is not feasible.

UD-UDG6 Provide a signalized intersection at Kifer Road and Uranium Drive in order to provide a safer bicycle and pedestrian crossing.

San Zeno Way/Lawrence Station Road

San Zeno Way and Lawrence Station Road run parallel to Lawrence Expressway on the west and east sides, respectively, and may be affected by the Lawrence Expressway Grade Separation Project. For this reason, major improvements are not planned, but opportunities for streetscape enhancements will be studied upon site redevelopment. The southern portions of both streets will be utilized to bridge the new Loop Road on either side of Lawrence Expressway.

Design Policy for San Zeno Way/Lawrence Station Road

SL-P1 Work with the County of Santa Clara on the Lawrence Expressway Grade Separation Project to study planned changes to San Zeno Way and Lawrence Station Road. Incorporate streetscape improvements to areas not affected by the grade separation project during development review.

Design Guidelines for San Zeno Way/Lawrence Station Road

SL-UDG1 Preserve existing trees along San Zeno Way and explore opportunities to meander new six-foot sidewalks behind the existing trees.

SL-UDG2 Provide improved sidewalks with a minimum six-foot paved width and four-foot minimum tree wells on Lawrence Station Road.

SL-UDG3 Maintain the southern portions of each street for use in the new loop road.

7 PLAN IMPLEMENTATION

Implementation of the LSAP will require the coordinated efforts of both the public and private sector working cooperatively to achieve the goals of the plan.





7 PLAN IMPLEMENTATION

The LSAP includes a variety of plans and policies to guide the future redevelopment of the area surrounding the Lawrence Caltrain Station. The Plan also contains recommendations that will require direct action by the City, partner agencies and the private sector.

In many situations where change in an existing built-up urban area is contemplated, there are City-owned properties that can be used for public facilities or infrastructure improvements in order to support and stimulate new private investment. Such is not the case in the LSAP, where, except for existing public street rights-of-way and drainage corridors, there is very little publicly-owned land. Therefore, implementation of the LSAP will require the coordinated efforts of both the public and private sector working cooperatively to achieve the goals outlined in this Plan. This section of the Plan provides a broad discussion of the key features of a program to implement the Plan. Included are discussions of principles, implementation actions and responsibilities, potential funding sources, and project priorities.

IMPLEMENTATION PRINCIPLES

Three core principles underlay all of the strategies outlined in this chapter and have guided the land use plans and other goals and policies of the LSAP.

- All land use changes in the Plan area will be undertaken at the initiative and schedule of private landowners. The City of Sunnyvale has no intent to purchase land for redevelopment or force private landowners and businesses to change land uses in order to meet the objectives of the Plan.
- Existing legal uses will continue to be allowed and will not be adversely impacted by the implementation of the Plan. The Plan focuses on opportunities for new development.
- In cases where acquisition of land or easements may be needed for the improvement of areawide and regional infrastructure (such as water and sewer improvements, and other circulation improvements), it is the intent of the City of Sunnyvale that such acquisitions will take place through conditions of approval in conformance with existing City regulations and policies and state statutes. Development incentives may be awarded for physical construction of improvements.

IMPLEMENTATION ACTIONS AND RESPONSIBILITIES

Implementation of the LSAP will require the coordinated efforts of both the public and private sector working cooperatively to achieve a common goal. Table 7.1 lists the key improvements that will be needed to achieve the goals of the Plan and the range of implementation methods and potential responsibilities that can be used to complete these improvements. As Table 7.1 illustrates, implementation of the LSAP can be achieved through the coordinated application of four general types of public and private actions, including:

1. Public Policy and Regulatory Actions
2. Impact Fees and Assessments
3. Grant Funding
4. Administrative Actions

PUBLIC POLICY AND REGULATORY ACTIONS

As private-sector development occurs in accordance with the Plan, various public improvements and benefits will be required as part of the approval process in order to provide needed infrastructure, open space, circulation and parking facilities and other needs that will result from the increased development.

Some of these public improvements will be required as a condition of development approval per existing procedures of the City of Sunnyvale for mandated development requirements. Others will be provided through development incentives, which will be administered through the City regulatory process. Therefore, the policies of the General Plan as well as the Zoning Code and other City regulations will be essential ingredients of a successful implementation strategy.

City of Sunnyvale General Plan

In April 2017, the City adopted an update to the City's Land Use and Transportation Element (LUTE) of the General Plan. The LUTE incorporated the planned land uses under the LSAP. The LUTE designates land uses in the LSAP as Transit Mixed Use (TMU). The LUTE also includes policies that promote the goals of this Plan.

Table 7.1: Summary of Implementation Tools

This table is illustrative of potential development responsibilities; other mechanisms may be available.

Project Component	City of Sunnyvale								Partner Agencies
	Mandated Development Requirements	Regulatory (Zoning)		Impact Fees & Assessments	Direct Public Investment			Admin. Actions	
		TDR/ PDR	Dev. Incentives		CIP	Joint Development	Grants/ Loans		
Land Use Mix									
Mixed-use	◆	◆	◆						
Affordable Housing	◆	◆	◆	◆		◆	◆		
Retail in targeted areas	◆	◆	◆						
Circulation & Parking Improvements									
Loop Road public access easement	◆								
Loop Road improvements		◆	◆						
Public street improvements	◆		◆	◆			◆		
Santa Vittoria Terrace improvements			◆						
Roadway connection modifications (inter-section improvements, ADA ramps, etc)			◆	◆			◆		
Primary Class I shared-use path public access easement	◆								
Primary Class I shared-use path public access improvements		◆	◆						
Secondary path public access easements	◆								
Secondary path improvements		◆	◆						
Transportation Management Association			◆					◆	
TDM measures	◆		◆						
Track crossings (East and West)			◆		◆	◆	◆		
Below-grade parking			◆						
Grade separations -Lawrence Expressway	◆			◆	◆				◆
Shared parking			◆			◆		◆	

* *TDR/PDR: Transfer of Development Rights / Purchase of Development Rights*
CIP: Capital Improvement Plan

Table 7.1: Summary of Implementation Tools (continued)

This table is illustrative of potential development responsibilities; other mechanisms may be available.

Project Component	City of Sunnyvale								Partner Agencies
	Mandated Development Requirements	Regulatory (Zoning)		Impact Fees & Assessments	Direct Public Investment			Admin. Actions	
		TDR/ PDR	Dev. Incentives		CIP	Joint Development	Grants/ Loans		
Residential parking permit program								◆	
Regional transit (infrastructure and facilities)									◆
Bus transit improvements (operations and facilities)	◆		◆						◆
Shuttle service improvements & expansion			◆					◆	◆
Open Space									
Land acquisition	◆	◆	◆	◆					
Open space improvements			◆	◆		◆			
Calabazas Creek linear park improvements			◆	◆	◆	◆			◆
Urban Design objectives									
Connectivity	◆		◆						
Industrial to residential transition	◆								
Best site planning and building design practices	◆								
Sustainable development	◆		◆						
Setbacks to encourage pedestrian-friendly streets	◆								
Noise mitigation	◆								
Infrastructure Improvements									
Sewer upgrades	◆		◆	◆	◆				
Drainage	◆								
Recycled Water			◆		◆	◆			

* *TDR/PDR: Transfer of Development Rights / Purchase of Development Rights*
CIP: Capital Improvement Plan

Zoning Code

Physical development and implementation of the LSAP will primarily be driven by the activities of private landowners, developers and businesses in the area. The Zoning Code (Title 19 of the Sunnyvale Municipal Code) regulates the activities of the private sector in development, and implements the goals and policies of the General Plan; it is one of the most important tools in the implementation of the Plan. Chapter 19.35 of the Zoning Code includes regulations specific to the LSAP. In addition to the Zoning Code, the Subdivision Code (Title 18 of the Sunnyvale Municipal Code) regulates subdivisions of land for private ownership.

Flexible Mixed-use

Encouraging mixed-use development in a manner that is flexible and responsive to business and property-owner decision-making and the marketplace is a key goal of the LSAP. Therefore, several mixed-use land use categories specific to LSAP properties have been established and incorporated into the Zoning Code, consistent with the Land Use Plan described in Chapter 3.

Development Incentives

Since very little land in the Plan area is publicly-owned, implementation of the LSAP will be heavily driven by the business plans and economic goals of private property owners. It is anticipated that new development will notably increase property values and should be able to support a significant amount of new infrastructure investment in the Plan area. Development incentives (in the form of density bonuses) will allow property owners to develop their properties beyond the base maximum densities (residential) and floor area ratios (office/R&D/industrial) in exchange for providing community benefits such as mixed-use development, connectivity improvements, additional open space, additional affordable housing, financial contributions, and other features that advance the goals of the Plan. In residential development, community benefits are worth a defined amount of points. Development Agreements, subject to approval by the City Council, are required for office/R&D/industrial projects requesting access to higher floor area ratios (FAR) through the incentives program. Development agreements are not required for projects consistent with the additional FAR allowed through participation in the City's Green Building Program. Developers are not required to build with incentives. The LSAP Incentive Program is designed to be updated over time as City priorities change and is available under separate cover.

Growth Monitoring Program

Unlike traditional zoning, which typically establishes single-use districts with fixed densities, the LSAP's innovative development strategy, which allows a flexible mix of uses at a range of densities, could result in a degree of unpredictability regarding both the pace of change and the ultimate result at build-out. In order to ensure that long-term development does not exceed the carrying capacity of infrastructure systems and the environment, a growth-monitoring program with a development capacity was established with the adoption of the original LSAP.

The Environmental Impact Report (EIR) that was conducted as part of the planning process analyzed up to 5,935 net new residential units and 1.2 million square feet of net new office/R&D/industrial development. Once this development threshold is reached the City would need to undergo additional environmental analysis per the California Environmental Quality Act (CEQA) before approving any subsequent developments.

IMPACT FEES AND ASSESSMENTS

In order to reach the long-term goals of the Plan Area, extensive public infrastructure improvements will be required. Infrastructure improvement categories include new and improved roadway connections, local streetscape improvements, bicycle and pedestrian improvements, local and regional utility improvements, and new and improved public open spaces and public facilities such as schools and recreation facilities. Developers in the City pay school impact fees directly to the school districts.

Funding these necessary public infrastructure improvements will require the coordinated efforts of both the public and private sector working cooperatively.

Circulation improvements, including acquisition of right-of-way and costs associated with providing new rail crossings and other improvements for pedestrians and bicycles, will require unique funding mechanisms. Much of the cost associated with the Loop Road and other new streets and pedestrian / bicycle facilities, including right-of-way acquisition, can be provided through incentives to new private development.

However, it is likely that some of these improvements, as well as the new pedestrian rail crossings, parks and schools and local and regional utility and drainage improvements, will require additional funding. These funds can come from a variety of sources, including direct public investments from partner agencies, transportation and recreation grants, and from development Impact Fees and Assessments.

As with many California jurisdictions, the City of Sunnyvale already charges development impact fees to fund infrastructure improvements required by new development. The impact fee funding accrues incrementally over time as new development occurs. Development impact fees can only fund capital improvements (i.e., not ongoing maintenance expenses) that are on the fee program project list, which is amended from time to time by the City. Development impact fees cannot be used to fund infrastructure improvements required to serve existing development or cover existing deficiencies. The City currently collects the following development impact fees and assessments, many of which will be applied to new development in the Plan area.

- Housing Mitigation Fees
- Park Dedication in-lieu Fees (when land is not dedicated)
- Plan Maintenance Fee
- Sanitary Sewer Impact Fee for Residential
- School Mitigation Fees
- Sense of Place Fee
- Storm Drainage Fees
- Transportation Impact Fees
- Water and Sewer Connection Fees

GRANT FUNDING

Grant Funding

Grant funding sources may be available to assist with new development in the Plan area, particularly because of Plan goals to enhance and intensify a transit-served urban infill location. Grant funding can significantly reduce both the City's and the developers' obligation toward infrastructure financing.

Potential external funding sources include programs available at the regional or State level that particularly focus on infrastructure improvements, and provision of diverse housing and transportation improvements. Many of these are summarized in Table 7.2 Potential Funding Sources.

Grant funding sources and available amounts will vary over the long-term build-out of the Plan area, but recent examples include the State's Proposition 1B and 1C programs for transportation improvements and affordable housing, respectively, as well as the Metropolitan Transportation Commission's Transportation for Livable Communities and Housing Incentive Programs and One Bay Area Grants.

ADMINISTRATIVE ACTIONS

Certain actions can be provided as part of the daily administrative function of the City of Sunnyvale. Generally, these include responsibilities for the ongoing monitoring, management, and maintenance of the Plan area. Perhaps the most important of these actions will be monitoring new development that will occur in the Plan area.

Growth Monitoring Program

As mentioned previously, monitoring growth in the Plan area will be critically important to ensure future development does not exceed the carrying capacity of infrastructure systems and the environment. Therefore, the City will develop a monitoring program to:

1. Monitor development in the Plan area as it approaches the development threshold of 5,935 net new residential units and 1.2 million square feet of office/R&D/industrial development based on the findings of the EIR. As the area approaches development thresholds, initiate a process to update the plan and conduct additional environmental analysis.
2. Regularly monitor development proposals to ensure they are supportive of the goals and vision of the Plan.
3. Ensure that infrastructure improvements, including the provision of circulation improvements, open space, and utilities keep pace with the development of employment, residential and retail uses.

Table 7.2: Potential Funding Sources
This list is not inclusive. Funding sources are likely to change in the future.

Potential Funding Sources
Federal
National Endowment for the Arts (NEA) Grants ("Our Town", etc)
ArtPlace Grants
Congestion Mitigation & Air Quality
Recreational Trails Program
Federal Lands Transportation Program
Rivers, Trails & Conservation Program
Safe Routes to School - SRTS
Community Development Block Grants
Highway Safety Improvement Program
Low-income housing Tax Credits
State
Caltrans Roadway Improvements
Caltrans Bicycle Transportation Account
Caltrans Transportation Development Act
California Art Council "Creating Places of Vitality" Grant
Proposition 1 Grant
Proposition 1C Grant - Transportation HCD
Safe Routes to Transit
Bicycle Transportation Account
California Conservation Corps
State Infrastructure Bond Funds
Office of Traffic Safety
Community Based Transportation Planning Demonstration
Transportation Development Act, Article III
Environmental Justice: Context Sensitive Planning Grants
Wildlife Conservation Board Public Access Program
State Department of Housing and Community Development
Regional
Transportation Fund for Clean Air
Transportation for Livable Communities
Transportation Enhancement Program
Regional Bicycle and Pedestrian Program
Safe Routes to Transit
Lifeline Transportation Program
Bay Area Air Quality Management District
County
VTA
Santa Clara County Transportation Funds
Measure A (2016)
City
Potential Business Improvement District (BID) Formation
Potential Transportation Management Association (TMA)
Housing Mitigation Fees

Other administrative actions by the City with participation of property owners that can help ensure the success of the Plan area include establishment and administration of:

- Business Improvement District (BID)
- Transportation Management Association (TMA)

PHASING

It is not envisioned that development of the area in accordance with the Plan will occur all at once. As property owners determine that it is financially advantageous, redevelopment of individual parcels will occur incrementally.

Although not all property owners will be seeking to change the use of their property in the near term, several established businesses are already increasing their footprints in the area through property acquisition and new construction to allow them to expand their current operations. In addition, based on discussions held between City staff and various property owners, several properties are likely candidates for redevelopment and land use change in the near and intermediate term, in accordance with the concepts of the LSAP. Redevelopment of these properties will thus provide an early phase start to achieving the goals of the LSAP.

NEXT STEPS

The LSAP is a planning document that outlines overall concepts, goals, policies and guidelines. Next steps to consider in the implementation process include:

- Establish a permanent Lawrence Station Area Business Improvement District (BID) to assist the City in the ongoing planning, management, marketing and maintenance of the Plan area.
- Establish a Transportation Management Association (TMA) that is privately funded by property owners in the LSAP. Responsibilities of the TMA are flexible and will be defined by a governing board and can be adjusted over time, but may include transportation programs with employer/employee incentives, transit passes, transportation coordinator, and regular reporting to the City.
- Initiate coordination with partner agencies to accelerate Plan improvements, including:
  - Peninsula Joint Powers Board: Lawrence Station improvements.
  - County of Santa Clara: Lawrence Expressway and Central Expressway improvements.
  - City of Santa Clara: Coordination of development phasing, transportation, and public infrastructure improvements.
  - School Districts: Facilities demand analysis and timing.
  - Valley Water: Coordination of improvements for linear parks and pedestrian facilities along Calabazas Creek.
  - VTA: Coordination of potential transit route modifications and street design standards.
  - Prepare applications for grant funding for detailed planning, design and capital improvements.

APPENDICES

A





APPENDICES

A: Market Research Study, EPS, February 2020
B: Fiscal Impact Analysis, EPS, February 2020
C: Housing Expansion Infrastructure Impact Study, BKF, June 2020
D: Intuitive Corporate Campus Infrastructure Impact Study, BKF, June 2020

APPENDIX A | MARKET RESEARCH STUDY

TECHNICAL MEMORANDUM

To: Pat Angell, Ascent Environmental, Inc.

From: Darin Smith, Anisha Gade, and Luke Foelsch

Subject: Sunnyvale Lawrence Station Area Plan Update - Market Research; EPS Project #181012

Date: February 5, 2020

Ascent Environmental, in coordination with the City of Sunnyvale (City), are currently exploring a potential update to the residential density of the Sunnyvale Lawrence Station Area Plan (LSAP) and potential expansion of the LSAP boundaries. As part of that process, Ascent Environmental engaged Economic & Planning Systems (EPS) to provide real estate advisory services. This memorandum provides the findings from EPS's preliminary market research, with the goal of providing Ascent Environmental and the City with market intelligence to inform zoning modifications and station area planning.

Background

The City adopted the Lawrence Station Area Plan (LSAP) in 2016 to guide future development of the area surrounding the Lawrence Caltrain Station in Sunnyvale, California. In prior years, EPS conducted economic analysis for the adopted LSAP, as well as advised the City on its affordable housing fees and policies in the Plan Area.

In mid-2018, the City decided to conduct studies for additional housing opportunities and an expansion of the western boundary of the LSAP to include three additional office/research and development (R&D) sites. This boundary expansion is meant to explore the implications of the presence and growth aspirations for Intuitive Surgical, a manufacturing company with a large presence in the station area and City.

EPS is now being engaged to advise the City on increasing the maximum density of residential parcels. EPS is charged with specifying population and employment trends so as to approximate potential housing demand as well as assessing the viability of converting allowable land uses to accommodate higher density housing.

he Economics of Land Use

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Key Findings

This memorandum summarizes local and regional real estate market conditions and highlights potential opportunities for housing and commercial/industrial development in the LSAP area. The following presents key findings, with further detail provided throughout this memorandum.

- **Employment growth in Sunnyvale outpaced residential growth, resulting in strong demand for housing.** Jobs in the City increased by more than 10,700 between 2010-2017 (the last year for which job data is available), representing a 14 percent increase in employment. During the same period, the City's housing supply increased by only about 2,600 units, or 10 percent growth. These trends of housing growth falling short of job growth are also found throughout Santa Clara County and contribute to the City's consideration of the reorientation of the LSAP to encourage greater housing density.
- **The LSAP area is well poised to absorb several multifamily projects currently under construction or approved, plus more in the future.** Rent growth in the portion of Sunnyvale encompassing the LSAP has been strong, even as the LSAP's ZIP code area (which extends beyond the LSAP boundaries) added roughly 1,000 new multifamily units, nearly half of all the units added in the City since 2010. At present, another 2,000 housing units are either under construction or approved within or immediately adjacent to the LSAP boundaries, but these units are expected to be absorbed very quickly given the very strong demand for housing in the city and region. Strong demographic growth spurring housing demand coupled with rising rents indicates a favorable market for continued higher density multifamily development, in line with the evolving vision of the LSAP.
- **The LSAP area is somewhat less competitive for new commercial development than are other parts of the City.** Recent office/R&D development in Sunnyvale is primarily grouped in the Peery Park and Moffett Park districts and substantial retail/entertainment space is set to come online in the CityLine development in Downtown Sunnyvale. The LSAP area has historically been zoned for industrial uses. As such, the LSAP has received less interest and achieves lower rent prices than other areas in the City for commercial office and retail development, but still is poised for future employment growth. The fact that only a small portion of the new development is being built on a speculative basis indicates strong demand from specific/individual users (such as Intuitive Surgical) and should translate into rapid absorption.
- **Industrial space in the LSAP area is in high demand, but general trends show continued decline in the need for such space.** The City and County have both had significant reductions in the total supply of industrial space, with most new industrial construction happening in less costly areas such as Gilroy or Milpitas. The already-adopted LSAP plans for virtually all existing industrial properties to be converted to higher density residential and office-oriented zoning, and the potential higher-density LSAP would include the same small amount of retained industrial space. Under either scenario, the industrial land uses, tenants, vendors, and services offered currently in the LSAP would have limited other viable spaces to relocate to in the City and may be displaced to other locations in the broader South Bay/Silicon Valley region, or even outside the region. These displacement impacts on the businesses and employees in light industrial/manufacturing industries should be balanced

against the important housing needs among residents and the real estate space needs of office/tech employers in the City.

- **Mid- to longer-term market conditions are likely to support the Plan Area's more intensive office uses (including denser flex/R&D).** Though much of the recent commercial development in Sunnyvale has been in other areas of the city, market conditions and tenant demand suggest that the Plan Area will be able to attract more intensive commercial uses well aligned to address the growing needs of an expanding tech industry. Given the historical zoning designation of the LSAP area for mixed-use and light industrial land uses, most of the existing buildings are relatively low density, and could be redeveloped for higher density workplaces. The LSAP area's accessibility and increasing vibrancy as a result of mixed-use development and 24-hour population should make the area competitive for additional workplaces, particularly as other areas of the City are built out.
- **Current market conditions support the concept of allowing additional housing development in the LSAP, while still encouraging opportunities for the preservation and intensification of employment uses.** The adopted LSAP and the currently considered revisions vary only in the amount of housing that would be allowed, as both scenarios have the same amount of office, flex/R&D, industrial, and retail uses allowed. As such, it is not expected that the ultimate buildout of the LSAP under either scenario would make a substantial difference in the employment base for the area. However, the higher-density allowance *could* increase the financial viability of housing, which may expedite though not fundamentally change the transition of lower-value employment uses to residential. EPS will continue to study financial opportunities and implications of such use conversion within the LSAP in separate fiscal analysis as well as more specific financial feasibility analysis to characterize the existing uses most likely to be subject to redevelopment pressure to create new housing.

Site Context

The local area of the LSAP lies in the eastern portion of the City. **Figure 1** shows the LSAP within the City's boundaries as well as the larger regional context of Silicon Valley. The City sits between the Cities of Santa Clara to its east, Mountain View to its west, and Cupertino to its south. The City's northern border abuts the San Francisco Bay. The City is connected to the broader region via major transportation hubs and corridors, including US Highway 101, Interstate 280, and State Route 82 (El Camino Real), San Jose International Airport, freight and commuter rail corridors, VTA bus routes and other transportation corridors.

Figure 1 Regional Context of Lawrence Station Area Plan



Sources: ESRI Business Analyst; Economic & Planning Systems, Inc.

The LSAP is an irregularly shaped rectangular area anchored by the Lawrence Station stop along the Caltrain line, as shown in **Figure 2**. Given that Lawrence Station has historically been surrounded by relatively low-intensity land uses that do not optimize transit ridership, the LSAP is intended to transform the neighborhood by establishing a framework for future development of the area and improving the relationship between transit availability and land use for the long-term development for an economically, environmentally and socially vibrant mixed-use district in Sunnyvale.

In 2018, the Sunnyvale City Council decided to study the expansion of the Plan Area's western edge to include the Intuitive Surgical properties, also depicted in **Figure 2**. This market study compares the socio-economic and real estate characteristics of this potentially expanded Plan Area with the entire City of Sunnyvale and other surrounding cities as well as the broader regional context of Santa Clara County. While the Plan Area was primarily designated for mixed-use, commercial and light industrial land uses, the LSAP envisions transforming this region into a higher density of residential and commercial land uses that will enable multimodal access.

Figure 2 Local Context of Lawrence Station Area Plan



Source: City of Sunnyvale

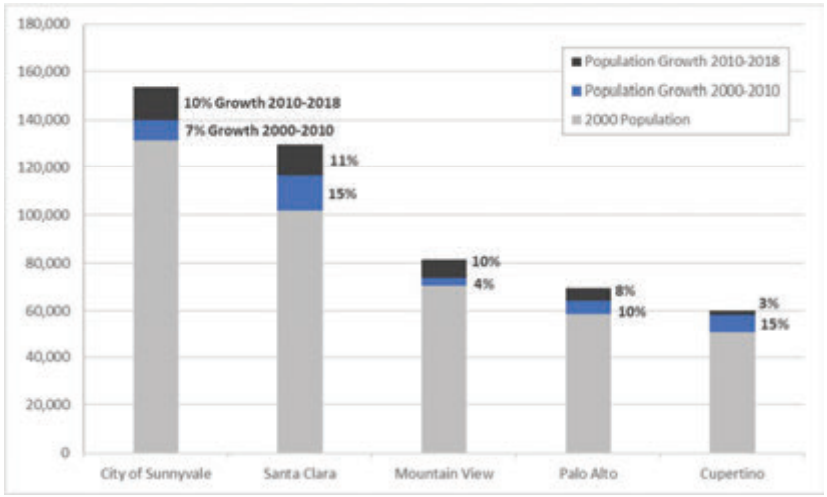
Regional Socio-Economic Trends

The LSAP lies within the larger Silicon Valley region, one of the strongest regional economies in the country. While historically the region was known for its agricultural and rural character as well as the accompanying farming, ranching, orchard and canning industries, today, the area is better known for its contributions to technological innovation. Given the economic boom of this current business cycle, Silicon Valley and the greater Bay Area region have experienced high levels of in-migration and population growth.

With regards to population, Sunnyvale is the County's second largest city, behind San Jose, which is also the largest city in the nine-county San Francisco Bay Area. As shown in **Figure 3**, Sunnyvale had approximately 131,500 residents in 2000 and has since grown to roughly 153,400, as of 2018. This increase of nearly 22,000 new residents represents a 17 percent increase since 2000, which is a growth rate roughly on par with Sunnyvale's neighboring municipalities. Much of this population growth (approximately 13,300 residents) occurred since 2010, as job seekers flocked to the tech and innovation economies of Silicon Valley.

With San Jose accounting for more than half of the nearly two million residents in Santa Clara County, Sunnyvale and its surrounding cities of Santa Clara, Mountain View, Cupertino, and Palo Alto account for another one-quarter of the County's population. The remaining 21 percent of the County's population is located in small towns and unincorporated areas.

Figure 3 Population Trends in Surrounding Cities in Santa Clara County

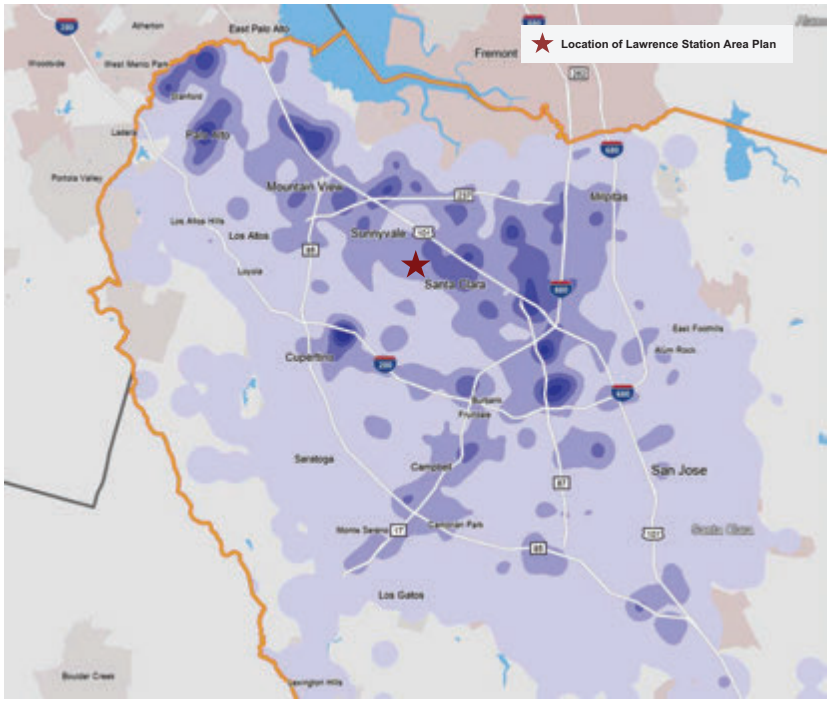


Sources: State of California, Department of Finance; Economic & Planning Systems, Inc.

In terms of the overall employment trend in the area, it is noteworthy that most of the jobs in this area of Silicon Valley are concentrated in the northeastern portion of Santa Clara County, as shown in **Figure 4**. This is especially important when understanding the economic role of the City within the larger Silicon Valley environment. The City is located in the heart of this region and as such, has historically enjoyed a relatively high concentration of jobs, given the presence of Google, Apple, and Lockheed Martin Space Systems, among several others. However, the highest concentrations of employment in the County are located in areas of San Jose, Cupertino, and Palo Alto.

Going forward, it can be expected that Sunnyvale will continue to attract considerable interest from commercial developers. Within the very strong Silicon Valley sub-regional economy, Sunnyvale's centrality, transportation connectivity, and strong presence of industry-leading companies makes Sunnyvale appealing for future development. In particular, the LSAP area would be well poised to attract office and multifamily developers, as well as retail and service commercial developers because of its close proximity to commuter rail service, the intersection of the Lawrence and Central Expressways as well as being roughly one mile south of US Route 101.

Figure 4 Map of Employment Concentration in Santa Clara County



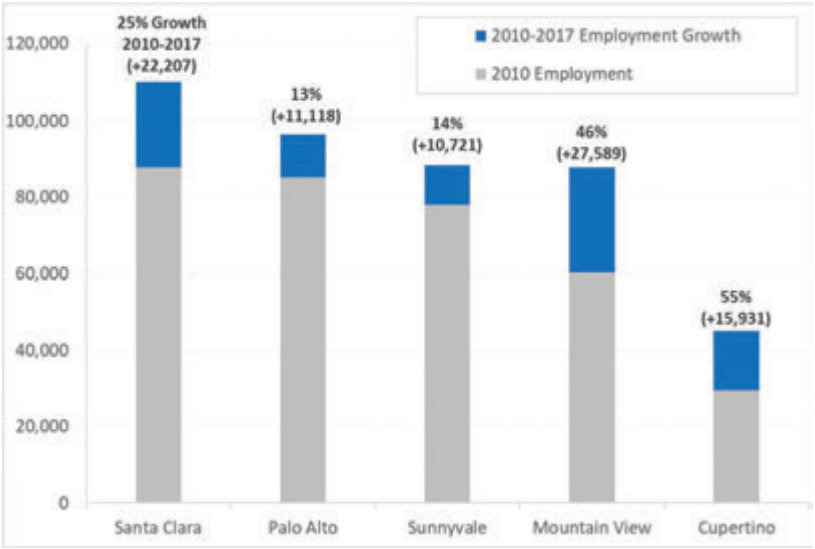
Source: Census LEHD 2017 Dataset

Looking at employment trends over time, the total number of jobs in the City has grown significantly since the end of the Recession from approximately 78,000 in 2010 to roughly 95,760 in 2019, according to the City. Employment growth in the broader San Francisco Bay Area has been some of the strongest in the country during this business cycle, helped in large part by the boom in tech and innovation industries of Silicon Valley.

The number of jobs in Sunnyvale grew by 14 percent during the current business cycle between 2010 and 2017, the latest year for which data are publicly available at the city level. As shown in **Figure 5**, nearly 10,700 new jobs were added in the City, roughly in line with absolute employment growth in Palo Alto. Employment grew by roughly double this amount in the City of

Santa Clara. Meanwhile, the two smaller municipal economies in the County, Mountain View and Cupertino, grew at a robust pace, with total employment in Mountain View almost equaling that of Sunnyvale. All together, nearly 87,600 new jobs were added in this northeastern part of the County, accounting for 47 percent of job growth countywide during this time period.

Figure 5 Employment Trends in Surrounding Cities in Santa Clara County



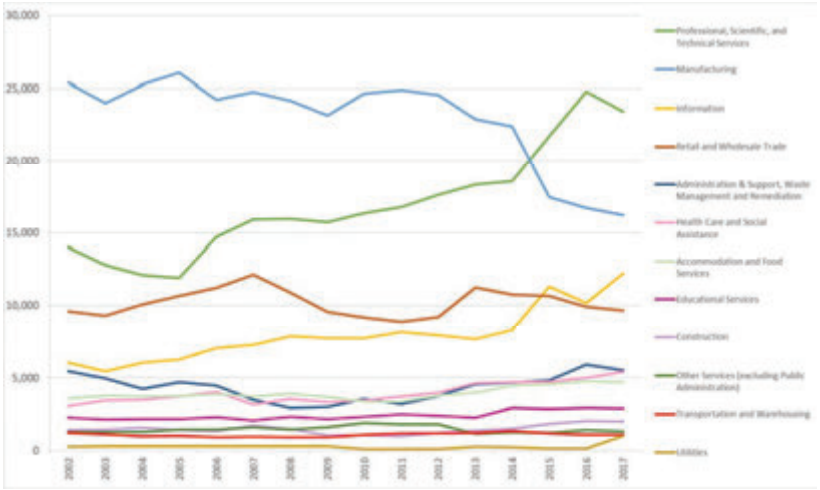
Source: U.S.Census Bureau, OnTheMap

As evidenced by the sector-level breakout of employment in **Figure 6**, of the twelve largest industry sectors in Sunnyvale, the "Professional, Scientific, and Technical Services" sector and the "Information" sector, the two sectors where tech and innovation economy jobs are categorized, added the most new jobs from 2010 to 2017. Information, the smaller of the two sectors, grew by roughly 4,500 jobs at an average rate of 8.4 percent annually during these seven years while the largest of all sectors, Professional, Scientific, and Technical Services, added roughly 7,000 jobs at an average rate of 6.2 percent annually. As of 2017, these two sectors accounted for almost 35,700 jobs, or slightly more than 40 percent of overall employment.

In addition to these two sectors, overall employment is also buoyed by growth in the administration and support, health care and social assistance, as well as the accommodation and food services sectors, which added approximately 5,300 jobs since 2010. Even as the manufacturing sector remained steady until 2014, there has been a loss of more than 8,400 jobs since 2002. Nonetheless, manufacturing remains the second largest employment sector, with nearly 17,000 jobs.

Between 2002 and 2017, the share of jobs in Sunnyvale belonging to the Manufacturing sector decreased by almost 14 percent. This shift in employing industries runs parralel with the changes observed in the real estate market, as discussed in the following section.

Figure 6 Sunnyvale Employment Growth by Industry Sector



Source: U.S.Census Bureau, OnTheMap

Real Estate Market Assessment

The following section compares market conditions and trends for multifamily, office, industrial, and retail real estate in the LSAP with those of Sunnyvale, the surrounding cities, and Countywide. When there is not enough data for the LSAP in particular, EPS relied on trends for the ZIP code (94086) or submarket which encompasses the LSAP. Please also note that the subsequent data that are indicated as "Sunnyvale" pertain to the entire City of Sunnyvale. Based on the comparative market data and analysis presented, EPS has drawn conclusions concerning real estate development potential within the LSAP.

Existing Land Uses

To begin with an overarching picture of the composition of commercial real estate in the varying geographies of interest, **Figure 7** lists existing commercial square footages and multifamily units based on information from the real estate data source, CoStar. Please note that not all projects that were under construction as of May 2019 are included in this inventory as these projects had not yet become leasable (and as such, did not yet have vacancy and rent information). Due to the history of the LSAP Area being designated as primarily light industrial, much of the area remains in flex/R&D and industrial land use categories, but it is now zoned under the LSAP to allow a mix of land uses including residential, office/R&D, and retail.

Figure 7 Summary of Real Estate Inventory, 2019

Geography	Commercial Property (Sq. Ft.)					Multifamily Units
	Office	Industrial	Flex/R&D	Retail	Other/ Specialty	
LSAP	291,726	1,142,594	1,365,436	139,282	192,000	16
As a Share of Citywide Total	*2%*	*19%*	*9%*	*3%*	*12%*	*0%*
Sunnyvale (Citywide)	18,782,882	5,879,747	15,883,409	4,080,940	1,561,410	25,599
As a Share of County Total	*14%*	*7%*	*15%*	*6%*	*5%*	*14%*
Santa Clara County	129,662,321	88,635,477	104,004,860	73,920,139	34,188,441	185,653

Source: CoStar

According to CoStar data, the largest share of commercial space in the LSAP is the Flex/R&D category, which often includes flexible commercial space that can be used for a variety of uses such as office, R&D, light manufacturing, etc. This category of commercial space is commonplace in the City and sub-region, serving as the rapid prototyping and maker spaces necessary for many firms in the tech and innovation industries of Silicon Valley. According to CoStar, there is nearly 1.4 million square feet of flex/R&D space in the LSAP, representing 9 percent of all flex/R&D space in the City. CoStar indicates that there is an additional 1.1 million square feet of industrial space in the LSAP area, accounting for 19 percent of all industrial space in the City. Because the distinctions between "flex/R&D" buildings and "industrial" buildings can be vague, it can be useful to consider the two categories together. Combined the LSAP area's flex/R&D and industrial buildings sum to roughly 2.5 million square feet, and represent about 12 percent of the City's total supply of such buildings – much higher than the LSAP's share of Citywide office space and retail.

Sunnyvale on the whole contains a comparatively larger share of the County's office, flex/R&D, and multifamily development, and relatively little of the County's industrial and retail development. The City's share of industrial and retail development approximately reflects its proportion of the County's population (around 7 percent), while the office and flex concentrations indicate a comparatively strong cluster of such uses in Sunnyvale.

Intuitive Surgical is the primary employer in the LSAP area and one of the City's largest, with an estimated 1,526 employees in 2019 according to the City's "Community and Business Profiles" document. Additionally, Fortinet, Inc., a cybersecurity firm which recently expanded its headquarters, lies just outside the LSAP boundary and employs 800 in its Sunnyvale location.

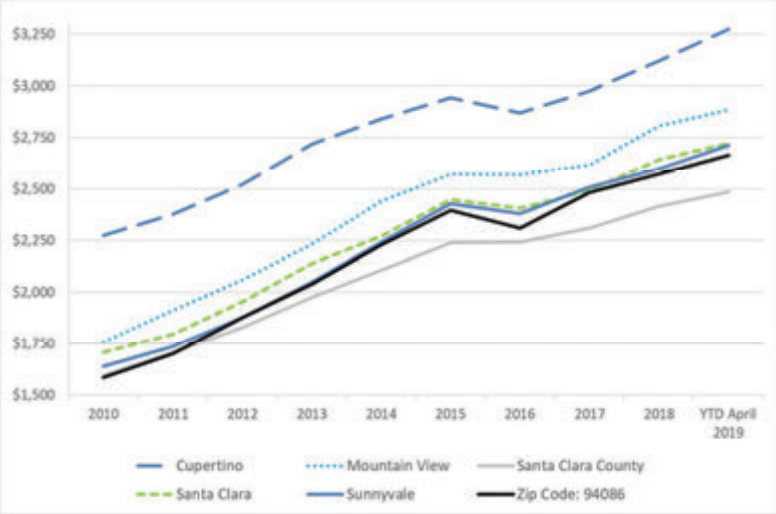
According to 2019 CoStar data, Intuitive Surgical owns 134.8 total acres of land in the expanded LSAP area and currently occupies roughly 1.0 million square feet of industrial and flex/R&D space. In addition, approximately 192,000 square feet of space in the LSAP falls in the Specialty category, which encompasses religious structures, parking facilities, and other specialty commercial uses. Within the boundaries of the LSAP, there is a 127,000 square foot self-storage facility, and 65,000 square feet occupied by two stone masonry retailers.

Apart from commercial spaces, there is a small inventory of 16 existing townhomes in the southern portion of the LSAP area at Buttercup Terrace, located at 1171 Willow Avenue.

Multifamily

Given that there are so few residential units existing in the LSAP (though there are several on parcels adjacent to the irregularly shaped LSAP boundaries), EPS relied on a broader dataset by summarizing trends for the ZIP code in which most of the LSAP geography lies. This information is compared to the overall performance of multifamily buildings throughout the City (which is indicated in the following graphs as "Sunnyvale") and other surrounding cities as well as the County. **Figure 8** illustrates how the monthly average effective rent per unit across various geographies has grown steeply since the end of the Recession. The average rent in the LSAP ZIP code grew relatively in line with that of the City as a whole as well as the City of Santa Clara, rising from nearly $1,600 in 2010 to approximately $2,700 by April 2019. This trend is also fairly close to that of the average rent throughout Santa Clara County, which grew from $1,600 in 2010 to $2,500 by April 2019. Rents in Mountain View and Cupertino remained consistently above that of the LSAP ZIP code, Sunnyvale, Santa Clara, and the County throughout this time period. Note that these figures represent the full stock of apartments in each jurisdiction; the newer stock typically achieves higher rents than those indicated in this comparison.

Figure 8 Multifamily Rents (Effective Monthly Average, Per Unit)



Source: CoStar

In particular, when comparing newly built apartments in the current business cycle since 2010, the effective monthly rents in buildings within a 2-mile radius of the LSAP range from $2,767 for studios to $4,926 for three-bedroom units, as of May 2019, as shown in **Figure 9**. This translates to a range of rents per square foot of $3.71 for the three-bedroom units to $4.03 for studio apartments. The nearest newly built project to the LSAP is the Monticello Apartment Homes mid-rise apartment complex (located just southeast of Lawrence Station adjacent to the LSAP at 3555 Monroe Street, but in the City of Santa Clara.). This 825-unit complex owned by

the Irvine Companies was constructed in 2016. As of October 2019, asking rents at the Monticello range widely, from $2.99 per square foot for some two-bedroom units to $4.69 per square foot for some one-bedroom apartments, but the average asking price among 43 available units averaging 1,009 square feet is $3,598 per month or $3.57 per square foot. It is expected that the rezoning of the LSAP to allow for higher density housing would command similar rent levels, or perhaps even a slightly higher premium, given that future developments would constitute newer product. The range of rents in the 94086 ZIP code area as well as the Citywide average are slightly higher than the range of rents in projects in close proximity to the LSAP area.

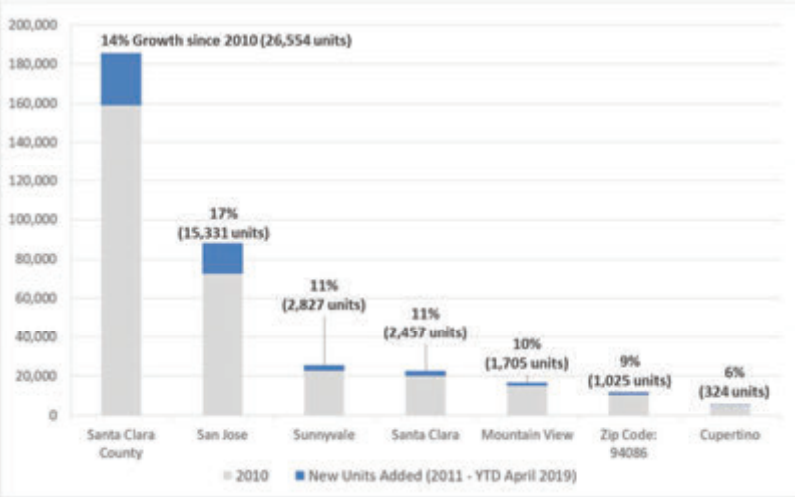
Figure 9 Comparison of Rent by Unit Type in Apartments Built Since 2010

Geography / Item	Studio	One Bedroom Units	Two Bedroom Units	Three Bedroom Units
2-Mile Radius Around LSAP (roughly 50% in City of Santa Clara)				
Effective Rent per Unit	$2,767	$3,053	$3,944	$4,926
Average Unit Size (Sq. Ft.)	686	788	1,143	1,328
Rent per Square Foot	**$4.03**	**$3.87**	**$3.45**	**$3.71**
94086 ZIP Code Area				
Effective Rent per Unit	$3,121	$2,967	$4,184	$5,326
Average Unit Size (Sq. Ft.)	626	762	1,134	1,438
Rent per Square Foot	**$4.99**	**$3.89**	**$3.69**	**$3.70**
Sunnyvale, CA				
Effective Rent per Unit	$2,804	$3,048	$4,127	$5,256
Average Unit Size (Sq. Ft.)	619	763	1,110	1,406
Rent per Square Foot	**$4.53**	**$3.99**	**$3.72**	**$3.74**

Source: CoStar

The supply of new multifamily deliveries, among all Santa Clara County cities, was greatest in San Jose. More than 15,300 units came online in San Jose from 2011 through early 2019, as shown in **Figure 10**, accounting for nearly 60 percent of all units delivered throughout the County. There were 2,827 new apartment units built in the City of Sunnyvale during this time period, the second highest among the cities in the County. The 1,025 new units that came online in ZIP code 94086 accounted for almost 40 percent of the City total.

Figure 10 New Multifamily Units Added 2011 – YTD April 2019

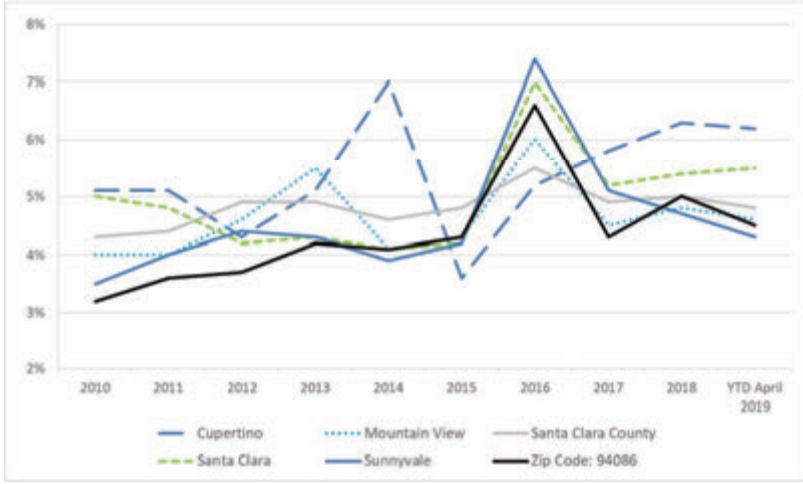


Source: CoStar

Looking forward, the LSAP is beginning to see more, higher density multifamily development. There is currently one multifamily project under construction at 1130 Kifer Road. Greystar Real Estate Partners is constructing 520 new mid-rise apartment units, which are set to deliver in the next six to twelve months. Most recently, another 741-unit residential project was approved in February 2019 for the CalStone/Pacific Building Materials site at 1155-1175 Aster Avenue. In addition, along the northern boundary of the LSAP, north of Kifer Road and east of the Lawrence Expressway in the City of Santa Clara, two projects are currently under construction that will add another 537 apartments and nearly 500 condos.

The multifamily vacancy rate reflects the impact of this new supply of multifamily units. Leasing trends and housing demand remained strong during this business cycle, driven by a large in-flux of new residents working in jobs in the robust, tech-driven industries of Silicon Valley. Therefore, even as a substantial number of new units came online, these units were absorbed by market demand. The vacancy rate in many cities in the region fluctuated slightly but remained low, as shown in **Figure 11**. At times when a large number of units were delivered, such as in 2016, when multiple projects throughout the region came online, the vacancy rate increased in the City of Sunnyvale and its neighboring comparable cities of Cupertino, Mountain View, and Santa Clara. A similar trend was prevalent at the ZIP code level as well as at the County level. However, as the units were absorbed by market demand, the vacancy rate generally decreased across the board.

Figure 11 Comparison of Multifamily Vacancy Rates



Source: CoStar

The imbalance of employment growth compared to housing supply is another indication of the need for more housing. Between 2010 and 2015, the number of primary jobs located in the City grew by roughly 9,000.[1] During this period, only 1,456 multifamily units along with approximately 444 new single-family units were added.[2] While jobs grew by 12 percent during this period, the total number of housing units grew by only 3 percent. The pace of new housing production has not kept pace with job growth, creating great market pressure to consider rezoning efforts such as the LSAP amendments that would allow for higher density housing.

Moreover, market trends, stemming from strong job and population growth among a younger, working-age cohort in the region, indicate that there is strong demand for apartments. Many recent apartment complexes in the competitive market area are built as mid-rise (i.e. five stories with structured or podium parking) and include lifestyle amenities to appeal to millennials and working professionals, such as gyms, recreational/outdoor spaces, and bicycle facilities/storage, etc. These trends are largely in support of rezoning plans such as the LSAP. Current and expected demand for housing is likely to support low vacancies and rent growth that can enable the redevelopment of flex/R&D and industrial properties to accommodate higher density housing.

[1] Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics

[2] Data on single-family units are from the California Department of Finance's Population and Housing Estimates for single-family detached and attached units.

Indeed, such redevelopment of industrial properties for residential use has been prominent in Sunnyvale in recent years. The City has created an "Industrial to Residential (ITR)" combining district[3] in several locations allowing former industrial and commercial properties to convert to residential use. Five such areas were identified, including one in the LSAP area referred to as "Housing Site 4b," now more commonly known as the Calstone site, and nearby properties south of the Caltrain tracks (and already approved for 741 new housing units). Other examples include the Tasman Crossing area, which has added many residential units including the Tamarind Square, Encasa, and Anton 1101 apartment complexes, and the Fair Oaks Junction area which has added the Onizuka Crossing apartments and many townhomes. As a City that is largely urbanized already, ITR sites such as these have been among relatively few where large-scale residential projects have been achievable. However, these projects have also resulted in a loss of industrial space in the City of Sunnyvale, which according to CoStar has diminished from 9.27 million square feet in 1999, to 7.73 million square feet in 2010, to only 5.88 million square feet in 2019.

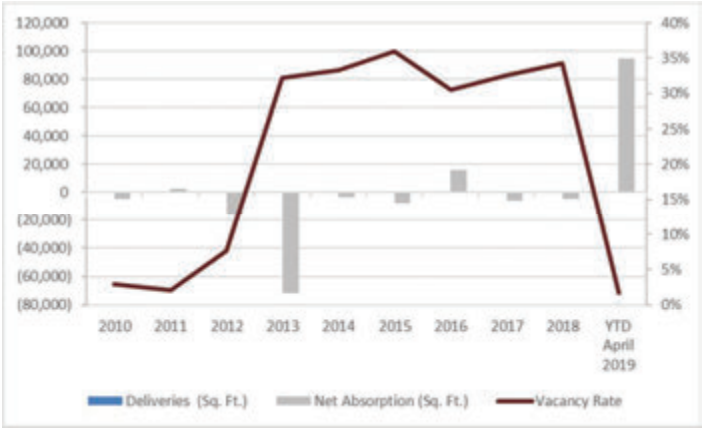
Office

The last decade has seen a significant increase in the total pool of office square footage in Santa Clara County, with a large portion of that attributable to Sunnyvale. Of the 20 million square feet of office space brought online in Santa Clara County since 2010, about a third is located in Sunnyvale. Only a small fraction of this office space is located in the LSAP currently, about 300,000 square feet, which accounts for approximately 10 percent of all commercial real estate in the Plan Area.

Given the small size of the local office market and the fact that there were no new office deliveries or major building demolitions since 2010, changes in a few occupants' tenancy became a significant factor in the operating metrics of the plan area. The sharp fluctuation in the office market vacancy rate in the LSAP is highly correlated to individual tenants' leasing activity. As shown in **Figure 12**, as a result of roughly 90,000 square feet of space being vacated in 2013 at 1390 Kifer Road, the vacancy rate spiked to 32.2 percent. When Intuitive Surgical began occupying this space in early 2019, the office vacancy rate decreased suddenly from 34.2 percent to 1.2 percent. Despite the sudden shift in the vacancy rate based on a few tenants' leasing activity, it is worth noting that not all of the office space in the Plan Area is taken up by larger firms occupying a large office footprint. Many of the current lease holders of office space in the LSAP are small and mid-sized professional services firms and medical offices.

[3] https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?BlobID=23604

Figure 12 LSAP Office New Supply, Absorption, and Vacancy Rate

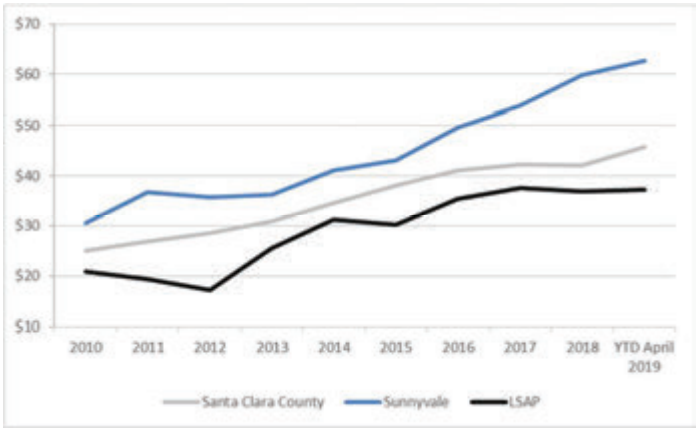


Source: CoStar

As is to be expected, given that most of the office space in the LSAP is in the Class B category, even as lease rates have grown throughout the region, the pace of rent growth has been less dramatic in the local area. As seen in **Figure 13**, the average office full-service lease rate has grown most dramatically in the City overall (more than doubling from $30.48 per square foot in 2010 to $62.67 by the first quarter of 2019.) The average lease rate for office space in the County grew from about $25 per square foot to nearly $46 during this time period. Meanwhile, the average asking rate in the LSAP went from nearly $21 per square foot in 2010 to $37 by 2019. These rent data indicate that the LSAP's office space is not as highly in demand as it is in other parts of the City and County. This is true of newer office product as well. According to CoStar data, office projects within a two-mile radius of the LSAP that came online during the current business cycle since 2010, had annual asking rents of $46.14 per square foot while those of new offices in the 94086 ZIP code as well as the City overall had annual asking rents of $75.00 per square foot.[4] New office projects in the LSAP would be expected to command asking rents similar to those projects that are within the two-mile radius of the LSAP, though again premiums might be expected for new buildings and perhaps for the LSAP area's proximity to the Caltrain station.

[4] Data are from CoStar, as of May 2019.

Figure 13 Office Rent Trends



Source: CoStar

As for the development pipeline, Intuitive Surgical is proposing a 1.213 million square foot office/R&D/manufacturing campus on the three parcels assumed to be included in the LSAP expansion. The status of their project is pending, and City staff indicate that its approval will be contingent on the LSAP amendments. Other than that major project, there are no office projects currently underway in the LSAP. However, within a two-mile radius, in the western corner of the City of Santa Clara, there is a 260,000 square foot office project set to come online in December 2019. The project is being built on a speculative basis and therefore currently being marketed to prospective tenants. Adjacent to the LSAP area, the Fortinet office building has been recently approved at 901 Kifer Road. The 172,000 square foot project is currently undergoing building permit plan check. Furthermore, in the northwestern corner of the City of Sunnyvale, there are several office projects underway in the Peery Park and Moffett Park districts. It is also worth noting that while there is some speculative office construction throughout Sunnyvale, much of the new development is tied to campus-style expansions by large/established tech companies.

The current concept for an amended LSAP would maintain the amount of office envisioned in the adopted LSAP (1.2 million square feet). While recent trends indicate that office space in the LSAP area has not performed at the same high levels found elsewhere in Sunnyvale, the growth in office uses in the City and region, and the LSAP area's advantages for accessibility, suggest that the LSAP should continue to provide opportunities for future office uses.

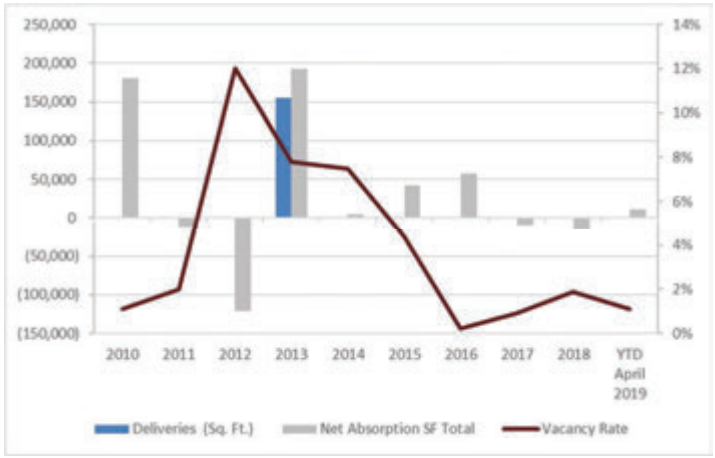
Flex/R&D

The largest share of the LSAP properties is categorized as flex/R&D space, a building type that can accommodate many tenant types ranging from offices to research labs and prototyping studios, etc. These sorts of spaces have been common for many necessary functions of technology and innovation industries, but in recent years Silicon Valley technology companies have increasingly used more traditional office building configurations.

Contrasting the substantial growth seen in office space over the last decade, the amount of square footage classified as flex/R&D space has experienced a steady decline in the broader region. Since 2010, the total pool of flex/R&D space has dropped by 10 percent across Santa Clara County (116 MSF to 104 MSF) and by 16 percent in Sunnyvale (19 MSF to 16 MSF). Still, given the robust pace of expansion since the end of the Great Recession in these economic sectors throughout this region, demand for available flex/R&D space remained very strong in this time period, with flex/R&D vacancies declining Countywide from 15.3 percent to 8.3 percent in 2019 while the City's flex/R&D vacancies fell from 15.2 percent to 3.6 percent in the same period.

Flex/R&D space in the LSAP area has been very stable over the past five years. Intuitive Surgical constructed a new 155,000 square foot flex/R&D building in 2013, which was immediately occupied. Despite this increase in supply, as seen in **Figure 14**, the overall flex/R&D vacancy rate in the LSAP has remained below 2 percent since 2016, well below the Countywide average of 8.3 percent.

Figure 14 LSAP Flex/R&D New Supply, Absorption, and Vacancy Rate[5]



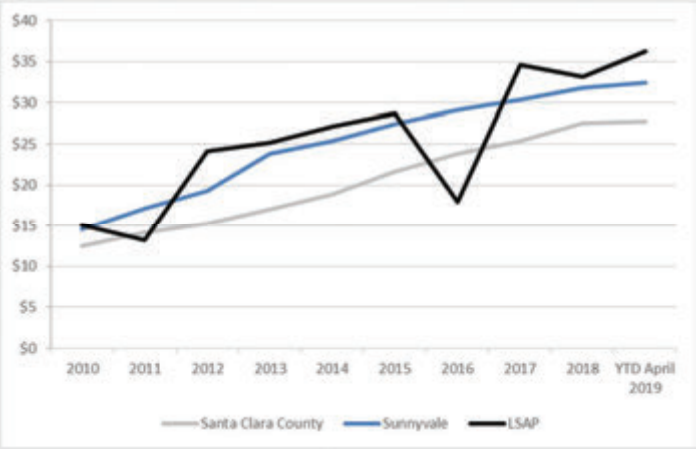
Source: CoStar

As a result of this demand, the average asking rent for flex/R&D space in the LSAP has generally remained above that of flex/R&D space in the City and County, as shown in **Figure 15**. As of April 2019, the average asking rent in the LSAP reached $36.21, a 140 percent increase from the rate of $15.08 in 2010. Moreover, this rate is nearly $4 higher than the average flex/R&D asking

[5] Figure 14 shows net absorption, meaning how much space was newly occupied versus newly vacated in a given year. For example, in 2010 there was no new construction, but roughly 180,000 more square feet of space was occupied than in the previous year. By contrast, in 2012, LSAP tenants in aggregate occupied 120,000 fewer square feet than was occupied in 2011.

rate of the City and more than $8 higher than that of the County. Thus, while the local office supply appears to be in less demand than in other parts of the competitive market area, the LSAP's flex/R&D space is in a very strong competitive position.

Figure 15 Flex/R&D Rent Trends



Source: CoStar

However, it should be noted that of the handful of new flex/R&D projects that came online since 2010 within a two-mile radius of the LSAP, or in the 94086 ZIP code, or Citywide, almost none were built speculatively. Because almost all of this new flex/R&D space was built with the needs of particular tenants in mind, almost none of this space was made available on the market and therefore, rent data on this newly available flex/R&D space are not representative of the potential rent that future speculative flex/R&D space may command.

There is currently one flex project of roughly 326,000 square feet under construction within the boundaries of the LSAP. This project is the only flex project under construction throughout the City and County. This project is being built by Intuitive Surgical, a medical devices manufacturer, to expand its campus in the LSAP. Moreover, given the physical characteristics of this project, it is more in line with office projects elsewhere in the City, illustrating the blurry line between flex/R&D and more traditional office space.

These indicators suggest that flex/R&D space in the LSAP area has been well-utilized and competitive in the broader market area, and should continue to be incorporated as potential uses in the LSAP. Indeed, the City envisions that the amount of flex space will increase from the current 1.4 million to 2.4 million square feet, under both the adopted LSAP and the scenario with higher density housing. However, EPS anticipates that existing, relatively low-intensity flex/R&D uses in the LSAP area will be subject to continued pressure to redevelop for higher-density, higher-value uses such as residential and more traditional office space. Many (though not all) flex/R&D activities can be effectively accommodated in office buildings, particularly as office buildings move toward larger and more open floorplate designs.

Industrial

Given the zoning designation of the LSAP, along with Flex/R&D space, industrial space accounts for a substantial share of the commercial real estate in the Plan Area. Moreover, a high concentration (19 percent) of all industrial space in the City is located in the LSAP. As discussed above, in recent years there has been a trend of converting industrial space into much-needed housing and office space, despite the continuing need to preserve certain types of industrial uses and zoning. These market pressures have resulted in a reduction of the City's industrial building supply from 7.73 million square feet in 2010 to only 5.88 million square feet in 2019 – a 24 percent decrease in the City while the County's industrial supply has decreased by only about six percent in the same period. According to the adopted 2016 LSAP and continuing into the currently envisioned higher-density scenario, the total amount of industrial space in the LSAP is anticipated to decrease by another million square feet by plan buildout, leaving only 26,500 square feet of industrial space in the LSAP area.

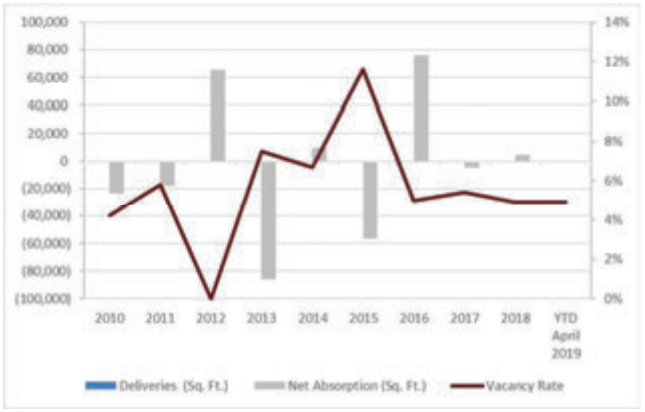
The vacancy rate for industrial space in the Plan Area is around 5 percent and indicative of well-utilized industrial space. Despite the need for particular types of industrial space, there were no new deliveries or major site demolitions during this business cycle, as shown in **Figure 16**. Still, there has been significant activity in the industrial real estate market in Sunnyvale, as buildings have been repositioned and turned over for new tenants. "Gross absorption" of industrial space in the City – the amount of space that has been re-tenanted even if it does not increase the overall occupied space– has equaled 1.92 million square feet between 2010 and 2019, meaning that a full third of the city's current industrial space has been re-tenanted during that period. The County has also had significant industrial re-tenanting with roughly 40 percent of its industrial space turning over since 2010.

As a result of this high demand and limited supply of industrial space, asking rents have escalated rapidly in both the LSAP and the City and County overall, more than doubling in all areas since 2010. The average asking rent of industrial space in the LSAP has fluctuated between being higher and lower than that of the City, but generally higher than that of the County, as shown in **Figure 17**. However, much of this industrial product is older than 2010 since no new industrial buildings were built anywhere in Sunnyvale during the current business cycle. It is reasonable to assume that future new industrial space in the LSAP could command at least modest price premiums over the rates achieved in the existing supply.

In terms of new industrial space, there are no such projects under construction in the LSAP nor the City. And in fact, there are only four industrial projects under construction in the County; three manufacturing sites in northern Milpitas and one warehouse site in Gilroy to the south.

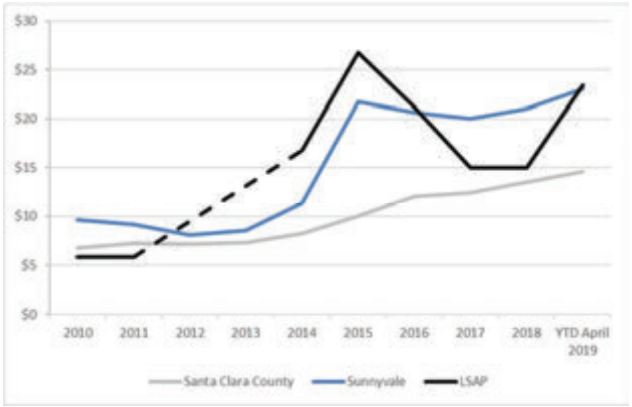
These indicators suggest that industrial space in the LSAP has been well-utilized, but still commands rents that are well below what might be achievable for office or more intensive flex/R&D uses. Thus, EPS anticipates that existing industrial uses in the LSAP area will be subject to continued pressure to redevelop for higher-density, higher-value uses. The adopted LSAP reflects this pressure by assuming a major reduction in the amount of industrial space that will remain in the LSAP, which is consistent with long-term trends in the total amount of industrial space in the City and County. The potential LSAP scenario with higher residential density maintains the same small amount of industrial space.

Figure 16 LSAP Industrial New Supply, Absorption, and Vacancy Rate[6]



Source: CoStar

Figure 17 Industrial Rent Trends



Note: No industrial rent data were available for the LSAP during 2012-2013; the dashed line is intended to show a linear rate of growth between the two known data points in 2011 and 2014.
Source: CoStar

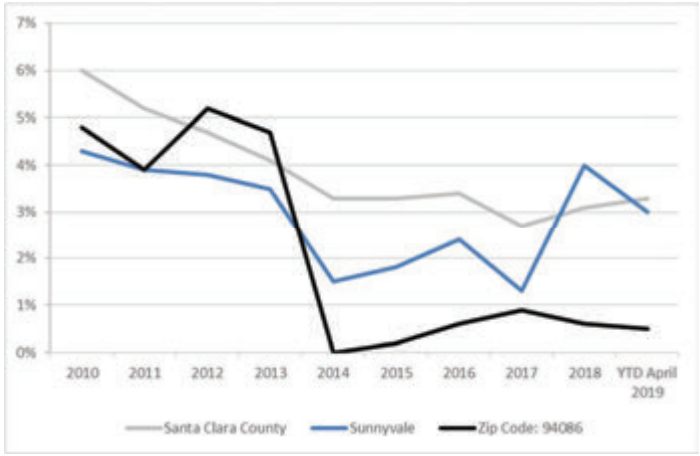
[6] Figure 16 shows net absorption, meaning how much space was newly occupied versus newly vacated in a given year. For example, in 2012 roughly 65,000 more square feet of space was occupied than in the previous year. By contrast, in 2013, LSAP tenants in aggregate occupied 85,000 fewer square feet than was occupied in 2012. Specific details regarding which businesses expanded or contracted in a given year is not available.

In either scenario, a significant portion of the City's industrial building supply is expected to be redeveloped for more intensive uses in the future, which will affect the ability of the City to maintain industrial uses within its diverse employment base. However, the alternative – to use regulations to effectively protect a larger portion of the industrial properties in the LSAP – would likely limit the amount of housing and more intensive workplaces to be developed, thus adversely affecting landowners' property values, contradicting evident market trends and pressures, and limiting the City's ability to effectively respond to demand for housing near transit.

Retail

Given the small size of the retail market in the LSAP, there is not sufficient data to compare operating metrics. Therefore, EPS compared the performance of the retail space of the larger 94086 ZIP code with that of the City and County. As shown in **Figure 18**, the retail vacancy rate in the ZIP code area has been below 1 percent for several years, well below that of the City and County. Reflective of this high demand for retail space in the 94086 ZIP code area, the average asking triple-net retail rent in the ZIP code area exceeded that of the City and County beginning in 2014, as shown in **Figure 19**. However, with regards to new retail developments that came online since 2010, the triple-net asking rent per square foot was $48.00 for retail space within a two-mile radius of the LSAP, as well as the 94086 ZIP code, and Citywide.[7] Therefore, it is expected that future retail space within the LSAP could reasonably command rents similar to retail space elsewhere in the City.

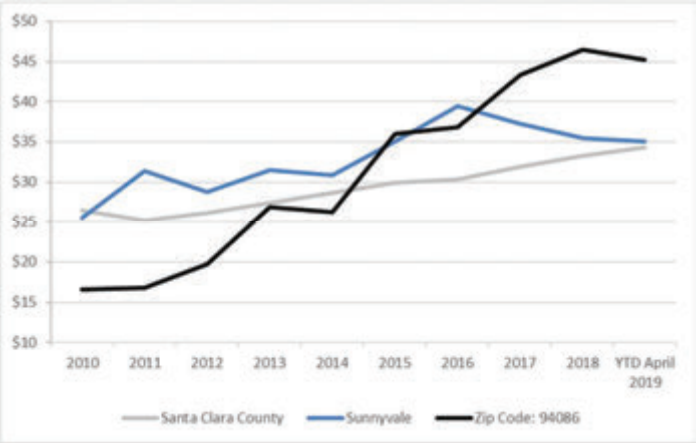
Figure 18 Retail Vacancy Trends



Source: CoStar

[7] Data are from CoStar, as of May 2019.

Figure 19 Retail Rent Trends



Source: CoStar

Despite the strong operating conditions of the retail space market in the larger ZIP code area, there is currently no stand-alone retail project under construction in the Plan Area. However, there are approximately 7,400 square feet of retail planned in the Greystar multifamily project as well as another 1,500 square feet in the recently approved residential project at the Calstone/Pacific Building Materials site. Additionally, within a two-mile radius of the LSAP area, the SummerHill multifamily project also contains a retail component (40,000 square feet) as well as three stand-alone retail projects slated to add another 132,000 square feet by the end of the year.

These indicators suggest that the LSAP area has performed well as a retail location, though the supply of retail space is relatively small. As the LSAP area adds housing and jobs in the future, additional support for retail can be expected in the area, and such retail use may be incorporated as small components of mixed-use office or residential buildings.

Development Pipeline

In assessing the commercial and residential property markets in the LSAP, its surrounding vicinity, and comparing to the City at large, EPS has also compiled information on several projects currently in the pipeline. The map in **Figure 20** calls out the larger, multi-phase residential and commercial projects that have either been approved and/or broken ground as well as highlights all other projects currently under construction.

Many of the residential projects currently under construction are concentrated in the eastern portion of the City. The majority of the residential construction will be mid-rise multifamily product, which would be consistent with the reorientation of the Plan Area to accommodate higher density housing. Within the boundaries of the LSAP approximately 520 units are currently under construction in the Greystar project and as of February 2019, another 741 units have been

approved for the Calstone/Pacific Building Materials site at 1155-1175 Aster Avenue. In addition, there are a number of projects underway within a two-mile radius of the Plan Area that are slated to bring roughly 2,700 more units on the market within the next 12 to 18 months. These projects include SummerHill's development of 537 apartments and 450 condos along the northern edge of Kifer Road, just north of the LSAP in the City of Santa Clara as well as The

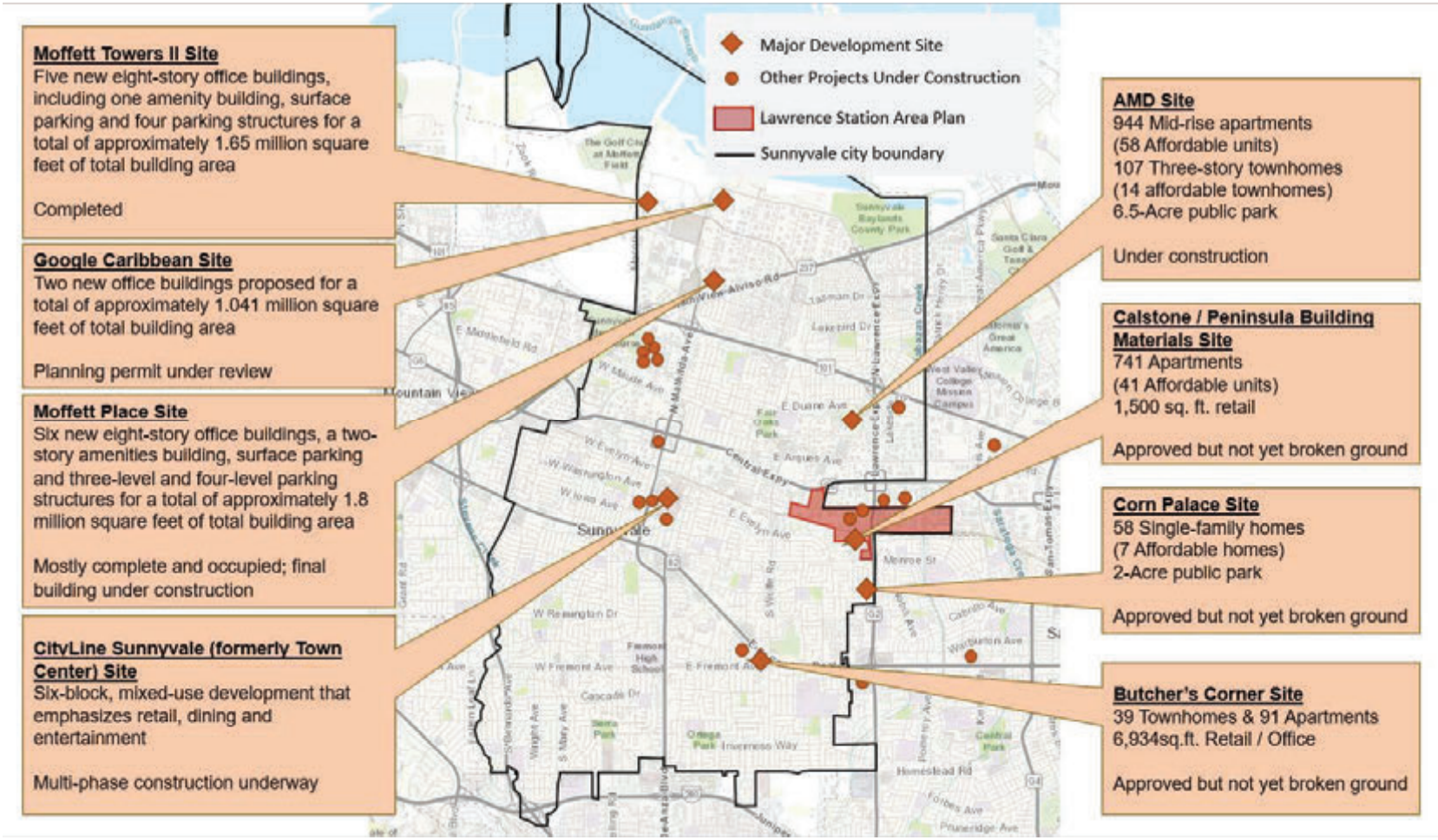
Irvine Company's development of nearly 1,400 units near the intersection of El Camino Real and Lawrence Expressway, among others.

Meanwhile, the northwestern corner of the City is more heavily weighted towards office properties, especially those projects concentrated in and around the Peery Park and Moffett Park developments. Slightly more than four million square feet of new office space should come online in the next 12 to 18 months while another 2.5 million square feet of new office projects are being proposed.

There is less new construction of other commercial property types such as flex/R&D, industrial, or retail, but it is to be expected that some office and residential projects will likely build in retail components on site. There is also a strong concentration of six blocks of retail, dining, and entertainment space in the CityLine Sunnyvale development, which is in the first phase of construction. In addition, two smaller, retail-only projects (totaling roughly 30,000 square feet) have been proposed for Peery Park and South Sunnyvale.

With strong population and employment growth leading to sustained housing demand, market trends have supported new residential developments. Robust employment growth throughout the region has also signaled the need for more intensive office uses. Given that positive market trends are already showing support for these types of land uses, the conversion of flex, R&D, light manufacturing/industrial, logistics and storage uses to accommodate higher density housing and more intensive office use should be absorbed relatively quickly by the market. EPS will continue to study these market conditions and the impact of rezoning in the LSAP in an upcoming fiscal analysis.

Figure 20 Map of Development Pipeline (as of November 2019)



Sources: City of Sunnyvale; CoStar; ESRI Business Analyst; Economic & Planning Systems, Inc.

APPENDIX B | FISCAL IMPACT ANALYSIS

TECHNICAL MEMORANDUM

To: George Schroeder, City of Sunnyvale

From: Darin Smith, Kate Traynor, and Anisha Gade

Subject: Sunnyvale Lawrence Station Area Plan Fiscal Analysis; EPS #181012

Date: February 4, 2020

The City of Sunnyvale retained Economic & Planning Systems, Inc. (EPS) as part of the Ascent team to conduct a fiscal impact analysis and residual land value analysis of the Lawrence Station Area Plan (LSAP or "the Plan") as well as the proposed amendment to increase housing density within the Plan area. The proposed amendment would allow more housing than is currently planned under the LSAP without altering the current commercial uses.

Fiscal Impact Analysis

This fiscal impact analysis indicates whether the LSAP, at buildout, can be expected to have a positive or negative overall effect on the City's General Fund. It compares the additional costs incurred by the City's General Fund from providing public services for new residents and employees to the additional taxes and other public revenues generated by new development. The difference between the new revenues and costs indicates whether the Plan is expected to generate an annual fiscal surplus (positive outcome) or an annual fiscal deficit (negative outcome).

EPS developed three static fiscal models evaluating (1) the existing development in the LSAP area (as is), (2) the total buildout allowable under the current LSAP (based on the City's "Estimated Likely Development"), and (3) the LSAP at buildout under the proposed higher density amendment. These models include a broad range of assumptions concerning the development program, development values, public service levels and costs, among others, that were compiled from information provided by the City of Sunnyvale and other sources. The results are intended to represent the comparative impacts of the full buildout under each scenario, and are based on current information regarding market values for development and the City's current year budget allocations for various municipal services. The modeling does not provide a time series of fiscal impacts because the diversity of ownership and uses and the scale of development allowed under either of the LSAP development scenarios make it very difficult to determine with any precision what parcels will be developed at what time. All results are expressed in constant 2019 dollars.

Residual Land Value Analysis

This residual land value analysis compares the market value and the development cost for a prototypical development project with a certain set of requirements (height, density, parking, affordable housing, etc.), resulting in an estimated amount that a developer could reasonably pay to acquire a parcel for development. The analysis achieves two objectives: (1) assesses the extent to which existing uses in the LSAP area are likely to be redeveloped for higher value uses, by determining whether the value of the property is greater as land for new residential development or as an existing building used for office, retail, or industrial uses, etc.; and (2) assesses the financial capacity for new development to provide desirable community benefits while remaining feasible, and whether tradeoffs from the City are likely to be necessary in achieving community benefit objectives.

EPS developed high-level static pro formas to calculate and compare the residual land values associated with a residential prototype for the current LSAP and the high density LSAP. EPS relied on our market research findings and development cost estimates from recent pro formas prepared by or vetted with locally active developers.

Summary of Key Findings

1. ***The redevelopment of the area is projected to yield fiscal gains for the City of Sunnyvale under both the current LSAP and the higher density scenario, with the higher density scenario yielding the greatest net benefit.***

This analysis estimates that the net annual fiscal impact of the proposed Plan on the City's General Fund is positive and significant at Plan buildout, as shown in **Table 1**. The estimated $5.41 million (current LSAP) or $5.65 million (high density LSAP) net additional City funds would replace and exceed the positive net fiscal impact of $4.49 million that the existing uses currently have on the City's General Fund.

Table 1 Fiscal Impact Summary

Revenue/ Expense Category	Existing Conditions	Current LSAP	High Density LSAP
Total General Fund Revenues	$6,913,944	$11,820,073	$17,555,532
Total General Fund Expenditures	$2,428,476	$6,415,020	$11,904,368
Net Annual Fiscal Impact on General Fund	**$4,485,468**	**$5,405,053**	**$5,651,164**

2. ***The multi-billion dollar increase in assessed value at buildout generates significant property tax increases for the City, and represents the major new revenue source driving the increase in LSAP's already net positive fiscal impact.***

Buildout under the current LSAP is projected to generate nearly $4.05 million in annual property tax revenue accruing to the City's General Fund and the high density alternative is

he Economics of Land Use

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projected to generate $7.13 million. Accounting for transfer of property in some cases and redevelopment in other cases, these are multimillion dollar increases over the current $1.34 million in annual property tax revenue generated by the existing uses. The growth in property tax revenue is attributable to the anticipated $2.12 billion (current LSAP) or $4.53 billion (high density LSAP) increase in the assessed value of the project parcels, from about $1.04 billion today. These figures reflect the very high value of new residential development in Sunnyvale, even after accounting for the City's inclusionary housing requirements.

3. ***Sales tax revenue will continue to be a major driver of the area's positive fiscal results, with added residents and workers under each buildout scenario generating additional sales taxes for the City of Sunnyvale.***

   The existing retail businesses in the LSAP are anchored by Costco, and generate substantial revenue for the City in the form of sales tax. The analysis uses calendar year 2018 actual sales tax revenues received and reported by the City for all 90 businesses in the LSAP. For consistency, both LSAP scenarios assume sales tax revenues to continue at the existing level and additionally incorporate increases in sales driven by new local residents and employees.

   The City has indicated that the Costco site is not expected to be redeveloped under the LSAP. Under the LSAP buildout scenarios, the total amount of retail square footage is being increased by 80,000 square feet, but more critically, the introduction of 2,323 or 5,935 new residential units will bring new households and their associated spending to the City. Given the market prices of housing in Sunnyvale, the new households are generally high income, and are estimated to spend between 17 to 29 percent of their household incomes on taxable expenditures (depending on income levels)[1] – 50 percent of which is assumed to be captured at retail locations in the City, including the retail within the plan area. Added employees from the commercial program also contribute to demand for taxable retail sales.

4. ***Development of the LSAP will generate increased municipal expenditures as a result of new population, particularly those expenditures associated with providing public safety services.***

   The commercial and residential uses increase the LSAP's municipal "service population" (the industry standard measure of residents' and workers' demand for services is that a worker's demand weighs 50 percent of a resident's demand) from approximately 3,867 today to 10,215 under the current LSAP and 18,956 under the high density LSAP. The demand for services from this growing population is projected to increase annual spending on public safety from $1.52 million under existing conditions to $4.01 million under the current LSAP and $7.45 million under the high density LSAP. Other municipal service expenses (such as Public Works, General Government, and Information Technology) are also expected to increase significantly as a result of the projected growth.

5. ***Residual land value calculations suggest that many existing nonresidential uses in the LSAP are likely to remain in place for the near-to mid-term, because their value as commercial and industrial buildings exceeds the value of their underlying land for residential development.***

[1] Based on the most recent estimates from the Bureau of Labor Statistics' Consumer Expenditure Survey.

Market transactions and achievable rents indicate that many nonresidential uses in the LSAP area continue to have high value as workplaces in the strong Silicon Valley market, while residential development faces very high development costs (even with very high market values) that constrain the ability to buy out existing workplaces to clear land for residential uses. The estimated residual land value of a project in the current LSAP is approximately $3.0 million per acre, which means we would expect a developer intending to build a rental product to pay no more than $3.0 million per acre for the land. The estimated residual land value of a project in a high density LSAP is approximately $3.9 million per acre. A review of available data shows nonresidential LSAP properties transacting at per acre prices well above the estimated $3.0-$4.0 million per acre value for residential development. That residual land values for residential development are lower than nonresidential building market values suggests that demand to convert existing LSAP real estate to residential will be modest in the near term.

Residential development is certainly in high demand, but in the near term is likely to be limited to older properties that do not command top market pricing for nonresidential use. Because of this dynamic, EPS does not believe that it is likely that there is "excess value" to developers or landowners that can be leveraged to achieve significantly greater community benefits as part of the potential LSAP amendments, without further delaying the potential residential development due to added costs.

Lawrence Station Area Plan Context

The City of Sunnyvale is in Santa Clara County and is home to about 155,000 residents and nearly 96,000 jobs, as shown in **Table 2**.

Table 2 Sunnyvale Citywide Assumptions

Item	Amount	Source
Housing Units	59,953	DOF
Occupied Households	57,327	DOF
Population	155,567	DOF
Total Primary Jobs[1]	95,760	City of Sunnyvale
Service Population[2]	203,447	US Census / DOF

(1) Per City of Sunnyvale Business License database as of 12/12/2019.
(2) Service population is calculated by adding total residential population and half of total employment.

Sources: California Department of Finance (2019); City of Sunnyvale Business License database (2019); Economic & Planning Systems, Inc.

The Lawrence Station Area Plan ("the Plan") encompasses 141 parcels on 199 acres of developed land within the City of Sunnyvale, adjacent to the existing Lawrence Caltrain Station[2]. The Plan adopted by City Council in 2016 represents a significant change from existing conditions, because the LSAP area was almost entirely developed for industrial and flex/R&D uses and the Plan calls for the addition of significant residential development as well as intensified workplace development. **Table 3** shows that under existing conditions, industrial uses represent over one-third of all development in the LSAP area. Under the adopted LSAP, almost all of what is currently considered industrial use could be converted to or replaced by new uses, including over 900,000 square feet of new office space and over 1,000,000 square feet of Flex/R&D space. Additionally, the current Plan allows the development of 2,323 new residential units, much of which may also be expected to occur on currently industrial properties.

[2] In 2018 the City initiated a General Plan Amendment to expand the Western boundary of the LSAP to include three additional office/research and development (R&D) sites. This analysis includes the three parcels added in the boundary expansion.

Table 3 LSAP Nonresidential Uses

Commercial	Existing[1]	Estimated Likley Development Scenario under Current LSAP[2]	Net New
Retail/Amenities	139,282 sq.ft.	220,000 sq.ft.	80,718 sq.ft.
Office	291,726 sq.ft.	1,200,000 sq.ft.	908,274 sq.ft.
Industrial	1,142,594 sq.ft.	26,500 sq.ft.	-1,116,094 sq.ft.
Flex/R&D	1,365,436 sq.ft.	2,400,000 sq.ft.	1,034,564 sq.ft.
Other/Specialty[3]	192,000 sq.ft.	0 sq.ft.	No Change
Total	**3,131,038 sq.ft.**	**3,846,500 sq.ft.**	**907,462 sq.ft.**

(1) Based on Costar data using the LSAP boundary, collected for 2019 EPS Market Assessement. Includes parcels identified as part of LSAP boundary expansion.
(2) Based on LSAP documents provided by City of Sunnyvale.
(3) Specialty uses encompass commercial uses such as religious structures and parking facilities.

When the LSAP was adopted by the City Council in 2016, the Council requested a study to identify additional housing opportunities within the LSAP area, beyond the 2,323 units allowed under the Plan. In 2018, as a result of the study, the Council selected a preferred LSAP alternative which would increase the density allowance for MXD-I and MXD-II zoned areas to 100 dwelling units per acre and allow residential uses in the M-S/LSAP and O-R zoned areas up to 100 dwelling units per acre, expanding residential capacity by an additional 3,612 units for a total allowable 5,935 units. Under an amended LSAP with higher density residential allowances, the City does not propose any change to the amount of nonresidential uses allowed under the Plan.

In both the current LSAP and the proposed high density scenario, the residential units are expected to consist of both for-sale and rental units, but with a heavier emphasis on rental units given the densities envisioned. For this analysis, EPS has assumed that 75 percent of the new units would be rentals, and 25 percent would be for-sale – a ratio generally consistent with the combined expectations of the two residential projects approved in the LSAP area thus far (Greystar and Calstone). Further demonstrating the market tolerance for ownership, the 900-unit Nuevo complex that is currently under construction just outside the LSAP in the City of Santa Clara is slated to offer approximately 40 percent of units for-sale and the remaining 60 percent as rental. This analysis assumes 75 percent of new units would be rentals, but would not yield substantially different results even if 100 percent of new units were rentals.[3]

[3] An EPS sensitivity analysis testing the contribution of the for-sale units to the overall fiscal impact of the area shows that even in an LSAP with up to 100 percent rental units, the net positive fiscal impact would be approximately $5 million under both the current LSAP and a high density LSAP, very similar to the results assuming 25 percent ownership units.

In line with Sunnyvale's existing affordable housing policies, the analysis assumes that 12.5 percent of the for-sale units will be affordable to moderate-income (120 percent of Area Median Income) households[4] and 15 percent of the rental units will be affordable to low- and very low-income (80 and 50 percent of Area Median Income, respectively) households[5]. For both for-sale and rental projects, developers may comply with the City's affordable housing programs through in-lieu fees instead of building affordable units, subject to City Council approval. For purposes of this analysis, EPS has assumed that affordable units are provided onsite, which is conservative in the sense that this assumption results in reduced assessed value (lower property tax revenue) and lower household spending (lower sales tax revenue), and may also yield lower residual land values than may be achievable through payment of the in-lieu fee.

The projected residential details of the Plan, including existing uses, current LSAP uses, and higher density uses if the Plan is amended, are summarized below in **Table 4**.

Table 4 LSAP Residential Uses

	Existing[1]	Current LSAP[2]	High Density LSAP[2]
For Sale Units			
Market Rate	16	508	1,298
% BMR		12.5%	12.5%
BMR		73	186
Subtotal		*581*	*1,484*
Rental Units			
Market Rate		1,481	3,783
% BMR		15%	15%
BMR		261	668
Subtotal		*1,742*	*4,451*
Total Units	**16**	**2,323**	**5,935**

(1) Based on Costar data using the LSAP boundary, collected for 2019 EPS Market Assessement. Includes parcels identified as part of LSAP boundary expansion.
(2) Based on LSAP documents provided by City of Sunnyvale.

For fiscal impact analysis, it is important to estimate the number of employees and residents in a project area, so that the level of municipal services required for the area can be evaluated. At buildout, the current LSAP is expected to support 9,184 employees and 5,622 new residents. The high density LSAP would support the same number of employees and 14,363 new residents.

[4] According to City of Sunnyvale Ordinance number 2976-12.

[5] According to Ordinance No. 3147-19, adopted October 8, 2019.

Estimated service population for the Plan area is derived as a combination of all new residents and half of all employees, an industry standard assumption reflecting the expectation that employees spend less time utilizing City facilities (parks, library, etc.) and requiring or participating less in most municipal services. A summary of the key LSAP parameters along with employment density assumptions is shown below in **Table 5**, which indicates that buildout of the high density LSAP would be projected to have a service population nearly double that of the current LSAP.

Table 5 LSAP Description, Population, Employment, and Service Population Estimates by Scenario

Item	Assumptions		Existing				Current LSAP				High Density LSAP			
				Estimated				Projected				Projected		
	Pop. per Unit[2]	Sq.Ft. per Emp.[3]		Population	Jobs	Service Population[4]	Development Program	Population	Jobs	Service Population[4]	Development Program	Population	Jobs	Service Population[4]
LSAP Development Cap[1]							2,323				5,935 units			
For Sale Residential														
Market Rate	2.42		16 units	39		39	508	1,229		1,229	1,298 units	3,141		3,141
% BMR[5]							12.5%				12.5%			
BMR	2.42			-		0	73	177		177	186 units	450		450
Subtotal				*39*		*39*	*581*	*1,406*		*1,406*	*1,484 units*	*3,591*		*3,591*
Rental Residential														
Market Rate	2.42			-			1,481	3,584		3,584	3,783 units	9,155		9,155
% BMR[6]							15%				15%			
BMR	2.42			-			261 units	632		632	668 units	1,617		1,617
Subtotal							*1,742 units*	*4,216*		*4,216*	*4,451 units*	*10,772*		*10,772*
Commercial														
Retail/Amenities		400	139,282 sq.ft.		348	174	220,000 sq.ft.		550	275	220,000 sq.ft.		550	275
Office		420	291,726 sq.ft.		695	348	1,200,000 sq.ft.		2,857	1,429	1,200,000 sq.ft.		2,857	1,429
Industrial		420	1,142,594 sq.ft.		2,720	1,360	26,500 sq.ft.		63	32	26,500 sq.ft.		63	32
Flex/R&D		420	1,365,436 sq.ft.		3,251	1,626	2,400,000 sq.ft.		5,714	2,857	2,400,000 sq.ft.		5,714	2,857
Other/Specialty[7]		300	192,000 sq.ft.		640	320	0 sq.ft.		-	-	0 sq.ft.		-	-
Subtotal			*3,131,038 sq. ft.*		*7,654*	*3,828*	*3,846,500 sq. ft.*		*9,184*	*4,593*	*3,846,500 sq. ft.*		*9,184*	*4,593*
Total				**39**	**7,654**	**3,867**		**5,622**	**9,184**	**10,215**		**14,363**	**9,184**	**18,956**

(1) Unit total of 2,323 per currently zoned LSAP Development Cap, 5,935 per proposed higher density revision.
(2) Population per unit based on City of Sunnyvale assumption in LSAP Final Redline version.
(3) Square footage and employment densities based on LSAP Final Redline version.
(4) Service population is calculated by adding total residential population and half of total employment. It represents a measure of public service demand in which employees are given one-half the weight of residents because of more modest service demands.
(5) Per city's 12.5% affordable requirement for for-sale residential units.
(6) Per City's 15% affordable requirement for rental units.
(7) "Specialty" uses encompass commercial uses such as religious structures and parking facilities.

Sources: City of Sunnyvale; Economic & Planning Systems, Inc.

Fiscal Impact Analysis

This section describes the methodology and key assumptions used in calculating the impact of the existing conditions, the current LSAP and the High Density LSAP on Sunnyvale's General Fund. The fiscal analysis examines the Plan area's ability to generate adequate revenues to fund the City's costs of providing public services to the area. The services analyzed comprise General Fund services (e.g., police, fire, general government). It does not include an evaluation of capital facilities or funding of capital facilities needed to serve new development.

The fiscal analysis is based on the City's General Fund Budget for FY 2018-19, tax regulations, statutes, and other general assumptions discussed herein. Specific revenues and expenditures that would be affected by new development in the City were identified and estimated. Each revenue item is estimated based on current State legislation and current City practices. Future changes by either State legislation and City practices may affect the revenues and expenditures estimated in this Fiscal Analysis. All costs and revenues are shown in constant 2019 dollars.

For each revenue and expenditure item, EPS used the most appropriate forecasting methodology available, summarized below.

- **Market-Specific Assumptions.** For the revenues that are based on the assessed values of properties (property taxes and property taxes in lieu of vehicle license fees), EPS has estimated the market value of the envisioned residential and commercial development, including adjustments as appropriate for below-market-rate housing unit values.
- **Average Revenue or Cost per Service Population.** This approach estimates average revenues or costs per the City's current service population and applies that average revenue or cost to the Project's proposed service population. Revenues and costs are based on the City's most recently adopted budget (FY 2018-19).
- **Per Employee Population.** Some revenue items, business license tax revenue in particular, are most appropriately estimated on a per-employee basis since the tax is levied by employee and is not impacted by number of residents.
- **Not Estimated.** Some budget items are not estimated because certain City revenues and expenditures are not directly affected by the existing development or the new development associated with this Project. For example, Transient Occupancy Tax (TOT) revenues are not estimated as no hotels are anticipated in the Plan area[6].

Annual General Fund Revenues

New General Fund proceeds attributable to the LSAP will include sales tax, property tax, property tax in lieu of vehicle license fee (VLF), franchise fee, utility users' tax, as well as licenses, fees, and permits. **Table 6** provides a summary of the Sunnyvale Fiscal Year 2018-19 Adopted General Fund revenue budget and a description of the forecasting method relied upon for each relevant revenue source. **Table 7** summarizes the annual revenues estimated to be generated

[6] EPS omitted TOT estimates since (a) there is no clear expectation of hotel development within the LSAP area, (b) there is no standardized rule of thumb for hotel use generation from other types of commercial development, and (c) the amount of revenue generated by employees would be the same under both density scenarios.

by the existing conditions, revenues expected to be generated by the current LSAP, and revenues estimated to be generated by the high density LSAP. More detail regarding the calculations is provided following these summaries.

Table 6 FY 2018-19 Revenue Budget Summary and Fiscal Impact Estimating Factors

Item	FY2018-19 Total	Percent Variable[1]	Allocation Factor	
Selected General Fund Revenues				
Property Tax	$56,399,910		12.8%	of 1% of base assessed value[2]
Property Tax In-Lieu of VLF	$18,705,959			existing VLF
Sales Tax	$31,913,429		1.05%	of estimated taxable sales[3]
Business License Tax[4]	$1,840,495		$12.63 / $12.70	per employee/rental unit
Construction Tax[5]	$4,582,427			not estimated
Real Property Transfer Tax	$1,835,575		$0.55 per $1,000	of equity value transferred for 5% of L
Transient Occupancy Tax	$16,541,424			not estimated
Utility Users Taxes	$8,297,656		$40.79	per service population
Franchises[6]	$7,368,207		$36.22	per service population
Rents and Concessions	$3,118,316			not estimated
Permits and Licenses	$1,415,807		$6.96	per service population
Service Fees[7]	$6,091,270		$29.94	per service population
Sale of Property	$17,600,000			not estimated
Other Revenues[8]	$3,979,629			not estimated
Total Revenues	**$179,690,104**			
Selected General Fund Expenditures				
General Government[9]	$22,674,354	25%	$27.86	per service population
Community Development	$1,388,137	75%	$5.12	per service population
Public Works	$23,883,249	75%	$88.04	per service population
Environmental Services	$1,481,555	75%	$5.46	per service population
Information Technology	$9,875,655	75%	$36.41	per service population
Library and Community Services	$19,566,959	75%	$72.13	per service population
Public Safety	$93,560,144			
Police Services	$32,377,386	90%	$143.23	per service population
Fire Services	$32,822,638	90%	$145.20	per service population
Other Public Safety[10]	$28,360,120	75%	$104.55	per service population
Total Expenditures	**$172,430,053**			

(1) EPS assumption; reflects percentage of costs that are population-dependent, as opposed to fixed costs.

(2) LSAP is located entirely in TRA 009-002.

(3) Allocation factor consists of one percent base Sales Tax rate added to Public Safety Sales Tax, which is estimated at .05 percent of all Sales T revenue per Sunnyvale budget page 147.

(4) The Sunnyvale Business License Tax is capped by the number of employees or the number of rental units in Sunnyvale (whichever is higher) a levied every two years. If the tax is calculated by employee, the maximum tax is $23,894.60 for any business with 946 employees or more. If the ta calculated by rental unit, the maximum tax is $10,691.90 for any business operating 421 rental units or more. To estimate business license tax rev the LSAP a per employee/rental unit tax rate is derived using the maximum tax rate ($23,894.60 per 946 employees and $10,691.90 per 421 renta then divided by two to account for the City's two-year collection cycle. The rates are then applied to the employee population, adjusted to factor in estimated to employ 2,500 employees, and the development program, adjusted for the assumption that 20% of developments are larger than the 4 cap.

(5) The Construction Tax, levied by City ordinance at a rate of $0.0054 of building permit valuation, is not estimated because it is a one-time tax, fi impact estimates focus on ongoing sources of revenue to the General Fund.

(6) The City receives a one-time franchise payment from PG&E each year which represents approximately 39% of all Franchise Fee revenue. The other main franchise agreements are with our cable television providers and Specialty Solid Waste.

(7) Service Fees includes Refuse Service Fees, Water Service Fees, Sewer Service Fees, and Park Dedication Fees. The majority of revenue in t category comes from the Department of Public Safety, the Recreation Division in the Department of Library and Community Services, the Commu Development Department, and the Department of Public Works.

(8) Other Revenues includes In-Lieu Charges, Transfers and Inter-Fund Revenues.

(9) General Government includes the City Attorney, City Manager, Finance Department, and Human Resources.

(10) Other Public Safety includes but is not limited to Investigation Services, Community Safety Services, Public Safety Administration Services, a Safety Recruitment Projects.

Sources: City of Sunnyvale Adopted Operating Budget FY 2018-19, p. 52; 280-466; County of Santa Clara Controller-Treasurer; Economic & Planning Systems, Inc.

Table 7 Summary of General Fund Revenues by Scenario

Item	Existing Conditions	Current LSAP	High Density LSAP
Estimated GF Revenue[1]			
Property Tax	$1,335,683	$4,053,939	$7,134,334
Property Tax In Lieu of VLF	$420,884	$1,277,235	$2,247,672
Sales Tax	$4,598,405	$5,112,567	$5,717,838
Business License Tax	$88,783	$125,714	$143,253
Construction Tax	$0	$0	$0
Real Property Transfer Tax	$28,674	$87,028	$153,157
Transient Occupancy Tax	$0	$0	$0
Utility Users Taxes	$158,102	$416,670	$773,215
Franchises	$140,389	$369,987	$686,586
Rents and Concessions	$0	$0	$0
Permits and Licenses	$26,977	$71,096	$131,934
Service Fees	$116,047	$305,837	$567,543
Sale of Property	$0	$0	$0
Other Revenues	$0	$0	$0
Total Revenues	**$6,913,944**	**$11,820,073**	**$17,555,532**

(1) See Table 6 for allocation factors.

Sources: City of Sunnyvale; Economic & Planning Systems, Inc.

Property Tax

Property taxes are based on the assessed value of land and improvements. At present, the combined parcels in the LSAP area generate $1.33 million per year – a figure reflecting both the nature of the existing uses (with a significant industrial component) and the assessed values for older buildings as constrained by Proposition 13. The current LSAP at buildout, consisting of 2,323 residential units and 3.84 million square feet of commercial space, would have an estimated net assessed value increase of $2.12 billion over the area's existing assessed value of $1.04 billion. The high-density alternative, consisting of 5,935 residential units and 3.84 million square feet of commercial space, would have an estimated net assessed value increase of $4.53 billion. **Table 8** summarizes estimated values and the per unit and per square foot assumptions driving the estimates.

Table 8 Assessed Value Estimates

Item	per unit or per sq.ft.	Current LSAP: Units / Building Sq.Ft.	Current LSAP: Estimated Value	High Density LSAP: Units / Building Sq.Ft.	High Density LSAP: Estimated Value
Existing Assessed Value[1]					
Anticipated for Redevelopment			$638,421,804		$638,421,804
Anticipated to Remain Existing			$404,265,584		$404,265,584
Subtotal			*$1,042,687,388*		*$1,042,687,388*
Max Buildout Zoned		**2,323 units**		**5,935 units**	
For Sale Residential					
Market Rate[2]	$939,000	508 units	$477,012,000	1,298 units	$1,218,822,000
BMR[3]	$381,000	73 units	$27,813,000	186 units	$70,866,000
Subtotal		*581*	*$504,825,000*	*1,484*	*$1,289,688,000*
Rental Residential					
Market Rate	$655,778	1,481 units	$971,207,218	3,783 units	$2,480,808,174
BMR[4]	$270,800	261 units	$70,678,800	668 units	$180,894,400
Subtotal		*1,742 units*	*$1,041,886,018*	*4,451 units*	*$2,661,702,574*
Commercial[5]					
Retail/Amenities	$586	220,000 sq.ft.	$128,982,857	220,000 sq.ft.	$128,982,857
Office	$548	1,200,000 sq.ft.	$657,495,000	1,200,000 sq.ft.	$657,495,000
Industrial	$222	26,500 sq.ft.	$5,890,956	26,500 sq.ft.	$5,890,956
Flex	$344	2,400,000 sq.ft.	$825,588,000	2,400,000 sq.ft.	$825,588,000
Subtotal		*3,846,500 sq.ft.*	*$1,617,956,813*	*3,846,500 sq.ft.*	*$1,617,956,813*
Total New Value of Max Buildout			**$3,164,667,831**		**$5,569,347,387**
Net New Value			$2,121,980,443		$4,526,659,999

(1) Based on FY 18-19 Assessed values and Sunnyvale LSAP documents.
(2) Market value based on 2-bedroom condos in Sunnyvale, built 2016-2019, sold 2017-2019, per Redfin.
(3) Value based on City's 2019 Maximum Sale Price per Sunnyvale BMR Home Ownership Guidelines. To qualify for the Housing Division's BMR Home Ownership program, household combined gross annual income cannot exceed the maximum moderate-income limit (120%).
(4) Value calculated using rents affordable at 70% of AMI to approximate the City required mix of 10% of units affordable at Low Income and 5% of units at Very Low Income. If the affordable component is developed by a nonprofit developer the units will not be subject to property taxes, which will impact value.
(5) Commercial values based on EPS market research, driven by Costar rents within a two mile radius of the Sunnyvale LSAP.

Sources: Redfin; Santa Clara County Assessor Recorder; City of Sunnyvale; CoStar; Economic & Planning Systems, Inc.

Property tax collections are based on 1.0 percent of the assessed value, and the City of Sunnyvale receives 12.8 percent of the property tax base from the LSAP area. This share is assumed to be fixed going forward. The estimated impact on fiscal revenues is depicted in **Table 9**.

Property Tax In-Lieu of Vehicle License Fees (VLF)

In 2004, the State of California adjusted the method for sharing VLF with local jurisdictions, replacing the VLF with property tax, which grows proportionate to increases in the City's assessed value. The fiscal analysis uses a formula provided by the California State Controller's Office to forecast property tax in-lieu of vehicle license fee (in-lieu VLF). In-lieu VLF or Motor Vehicle In-Lieu is calculated by taking the percentage increase in the City's assessed value resulting from the development and applying that percentage increase to the City's current State allocation of in-lieu VLF revenue. For example, the assessed value of new development under the current LSAP is estimated to increase the City's total current assessed value by 6.53 percent, and thus, is estimated to increase the in-lieu VLF revenues by 6.53 percent, as seen in **Table 9**. The current LSAP at buildout is expected to generate approximately $1.28 in annual in-lieu VLF revenue, while the higher density scenario would generate an additional $1 million.

Table 9 Property Tax, Property Tax In Lieu of VLF Estimates

Item	Assumption / Factor	Annual Total at Buildout		
		Existing Condition	Current LSAP	High Density LSAP
Property Tax				
Existing Assessed Value[1]		$1,042,687,388	$1,042,687,388	$1,042,687,388
New Estimated Value		NA	$3,164,667,831	$5,569,347,387
Net Value Increase		NA	$2,121,980,443	$4,526,659,999
Property Tax	1.0%	$10,426,874	$31,646,678	$55,693,474
Sunnyvale General Fund Share	12.81% of the value	**$1,335,683**	**$4,053,939**	**$7,134,334**
Property Tax In Lieu of VLF				
Existing Citywide Property Tax in Lieu of VLF		$18,705,959	$18,705,959	$18,705,959
Citywide Assessed Value[2]		$46,352,122,074	$48,474,102,517	$50,878,782,073
LSAP Area as Percent of Citywide Assessed Value[3]		2.25%	6.53%	10.95%
Net New Property Tax In Lieu of VLF[4]		**$420,884**	**$1,277,235**	**$2,247,672**

(1) Information provided by the Santa Clara County Assessor's Department. Includes parcels identified as part of LSAP boundary expansion.
(2) FY2018/19 value based on the Santa Clara County Assessor Annual Report.
(3) Calculated by dividing net value increase by citywide assessed value.
(4) Calculated by multiplying existing property tax in lieu of VLF by project net assessed value increase.

Sources: Redfin; City of Sunnyvale Adopted Operating Budget FY 2018-19; Santa Clara County Assessor; Economic & Planning Systems, Inc.

Sales Tax

Sales tax generation is based on estimates of taxable sales generated by the new residential and employment population in the plan area. Existing retail sales taxes are influenced heavily by an existing Costco Wholesale store that is anticipated to remain in all LSAP scenarios. The analysis uses actual sales tax revenue of nearly $4.6 million for all 90 businesses within the LSAP for calendar year 2018 for the purpose of describing the City's existing revenues. These revenues from existing businesses are not anticipated to change significantly, so these revenues are carried through in both proposed scenarios.

Additionally, service population-based estimates were used for the purposes of projecting new sales tax revenues generated by new residents and employees under each potential development scenario. While the retail uses in the area are projected to increase from approximately 140,000 square feet to 220,000 square feet under the current LSAP and the higher density scenario, the driver of demand for that additional square footage is expected to be the spending of new residents and employees rather than the retail space itself. Thus, rather than calculate new sales tax using a revenues per retail square footage approach, the forecast of new sales tax is based on estimated household income and spending on taxable items, and the portion of spending assumed to be captured by the City.

EPS constructed weighted average household incomes based on projected market-rate and affordable home pricing. Market-rate renter households are estimated to have an income of $139,960, and renter households occupying the affordable units are estimated to have average incomes of $82,775. Among homeowners, market rate households are estimated to have average incomes of $193,277 and households occupying the affordable units are estimated to have average incomes of $141,950. EPS established a share of taxable spending for each income group,[7] and assumed that 50 percent of total taxable expenditures will be captured by retailers located in Sunnyvale (both inside and outside the LSAP area). In addition, EPS assumed that workers in the area will spend an average of $10 per workday on taxable goods and services (lunches, for example), based on consumer expenditure surveys[8], and again assumes that 50 percent of such spending will occur within the City of Sunnyvale. EPS makes the conservative assumption that all sales at new retail spaces are from residents and employees of the LSAP. Sunnyvale's General Fund receives 1.05 percent of taxable sales, as shown in **Table 10**.

[7] Based on the 2017 Bureau of Labor and Statistics Average Annual Expenditures and Characteristics for various income levels.

[8] *Employee Survey on Payroll Tax and Spending Habits*, Accounting Principals, 2013.

Table 10 Retail Sales Tax Revenue

Item	Assumptions	Annual Total at Buildout: Current LSAP	Annual Total at Buildout: High Density LSAP
Existing Revenues Generated by Businesses to Remain in LSAP[1]		$4,598,405	
RESIDENTIAL-BASED SALES			
Existing Market-Rate Condominium Units			
Annual Household Income		$289,837	$289,837
Taxable spending per household[2]	17.7% of total income	$51,301	$51,301
Total Sales Generated by Existing Residents			
Total Taxable Spending	16 units	$820,816	$820,816
Expenditures Captured by Sunnyvale[3]	**50% of taxable expenditures**	**$410,408**	**$410,408**
New Market-Rate For Sale Units			
Annual Household Income		$193,277	$193,277
Taxable spending per household[2]	17.7% of total income	$34,210	$34,210
Total taxable spending	508 / 1,298 for sale units	$17,378,680	$44,404,580
New Below Market Rate For Sale Units			
Annual Household Income	120% AMI	$141,950	$141,950
Taxable spending per household[2]	26.2% of total income	$37,191	$37,191
Total taxable spending	73 / 186 BMR units	$2,714,943	$6,917,526
New Market-Rate Rental Units			
Annual Household Income		$139,960	$139,960
Taxable spending per household[2]	23.1% of total income	$32,331	$32,331
Total taxable spending	1481 / 3,783 rental units	$47,882,211	$122,308,173
New Below Market Rate Rental Units			
Annual Household Income	70% AMI	$82,775	$82,775
Taxable spending per household[2]	28.6% of total income	$23,674	$23,674
Total taxable spending	261 / 668 BMR units	$6,178,914	$15,814,232
Total Sales Generated by New Residents			
Total New Household Taxable Spending	2,323 / 5,935 units	$74,154,748	$189,444,511
Expenditures Captured by Sunnyvale[3]	**50% of taxable expenditures**	**$37,077,374**	**$94,722,256**
EMPLOYEE-BASED SALES			
Employee Retail Purchases			
Daily Office Worker Taxable Spending	$10 per work day		
Annual Office Worker Taxable Spending	250 workdays / year	$2,500	$2,500
Total Taxable Spending	9,184 employees	$22,960,000	$22,960,000
Expenditures Captured by Sunnyvale[4]	**50% of retail expenditures**	**$11,480,000**	**$11,480,000**
Total Taxable Retail Sales		**$48,967,782**	**$106,612,664**
TOTAL NEW SALES TAX	1.05% of taxable sales	**$514,162**	**$1,119,433**
TOTAL SALES TAX		**$5,112,567**	**$5,717,838**

(1) Based on calendar year 2018 actual sales tax revenue reported by the City of Sunnyvale.
(2) Based on Bureau of Labor Statistics Consumer Expenditure Survey, 2017. Consumer Expenditure Survey includes the following taxable purchases: food away from home, selected groceries, alcohol and tobacco, household furnishings and housekeeping, vehicle and gas expenses, apparel, personal services, personal care products, and entertainment.
(3) Assumes 50 percent of taxable retail spending by City of Sunnyvale existing and new residents is captured by the retailers within the City, based on amount and range of retail supply in the City.
(4) Assumes that 50 percent of taxable retail spending by employees who work in the City of Sunnyvale are captured by the City.

Sources: City of Sunnyvale; California Board of Equalization; U.S. Bureau of Labor Statistics; CoStar; and Economic & Planning Systems, Inc.

Business License Tax

Sunnyvale collects Business License Taxes in tiered amounts that are capped by the number of employees or the number of rental units in Sunnyvale (whichever is higher) and is levied every two years. EPS estimated an annual tax rate using the City cap of 946 employees per business and 421 rental units per apartment community. A per employee or per unit tax rate of approximately $12.65 is then applied to the employee population, reduced to factor in one firm estimated to employ 2,500 employees (of which only 946 would be subject to the tax), and the rental apartment development program, reduced for the assumption that 20 percent of rental units would be exempt because they are in projects that exceed the 421 unit cap. Business tax revenue is expected to be roughly $126,000 under the current LSAP and $143,000 under the high density LSAP (see **Table 7**). This is compared to $88,783 under existing conditions.

Real Property Transfer Tax

The City receives a transfer tax from any sold property based on $0.55 for every $1,000 of sales value. EPS estimates that about 5 percent of all new property, both residential and commercial, will be resold annually based on experience in comparable jurisdictions. This means that each property, on average, would be resold every 20 years. Based on this assumption, EPS estimates that the current LSAP will contribute roughly $87,000 to the City's General Fund revenues and a high density LSAP would contribute roughly $153,000 (see **Table 7**). This is compared to an estimated $28,674 under existing conditions.

Utility Users Tax

The City of Sunnyvale collects utility user taxes on utilities such as telephone, electricity, cable, etc.. These proceeds are estimated using the "per service population" approach and are estimated at approximately $40.79 per service population (see **Table 7** for revenue estimates by scenario).

Franchise Tax

The Project is expected to result in Franchise Tax proceeds to the City. These proceeds are estimated using the "per service population" approach and are estimated at approximately $36.22 per service population (see **Table 7** for revenue estimates by scenario).

Licenses and Permits

The Project is expected to result in Licenses and Permits proceeds to the City. These proceeds are estimated using the "per service population" approach. This methodology results in the estimated average of about $6.96 per service population (see **Table 7** for revenue estimates by scenario).

Service Fees

The Project is expected to result in Charges for Services proceeds to the City. These proceeds are estimated using the "per service population" approach and are estimated at approximately $29.94 per service population (see **Table 7** for revenue estimates by scenario).

Annual General Fund Expenditures

This section describes the methodology and key assumptions for calculating various General Fund expenditure items. While fixed costs are independent of new development, variable costs are assumed to increase based on new growth in the City. Only variable costs are used to project the General Fund expenditures in this analysis. The estimating approach for each General Fund item is described along with a summary of LSAP-generated expenditures below in **Table 11**.

Table 11 General Fund Expenditures and Estimating Methodology

Item	FY 2018-19 Budget	Percent Variable[5]	Cost Allocation Methodology	Total Cost		
				Existing	Current LSAP	High Density LSAP
Service Population				*3,867*	*10,215*	*18,956*
General Government[1]	$22,674,354	25%	$27.86 per service population	$107,735	$284,590	$528,114
Community Development	$1,388,137	75%	$5.12 per service population	$19,799	$52,301	$97,055
Public Works	$23,883,249	75%	$88.04 per service population	$340,451	$899,329	$1,668,886
Environmental Services[2]	$1,481,555	75%	$5.46 per service population	$21,114	$55,774	$103,500
Information Technology	$9,875,655	75%	$36.41 per service population	$140,797	$371,928	$690,188
Library and Community Services[3]	$19,566,959	75%	$72.13 per service population	$278,927	$736,808	$1,367,296
Public Safety						
Police Services	$32,377,386	90%	$143.23 per service population	$553,870	$1,463,094	$2,715,068
Fire Services	$32,822,638	90%	$145.20 per service population	$561,488	$1,483,218	$2,752,411
Other Public Safety[4]	$28,360,120	75%	$104.55 per service population	$404,295	$1,067,978	$1,981,850
Total Expenditures	**$172,430,053**			**$2,428,476**	**$6,415,020**	**$11,904,368**

(1) Includes Departments of City Manager, City Attorney, Human Resources, and Finance.
(2) Environmental Services includes management of the City's potable and recycled water systems, sanitary, and storm sewer systems; treatment of wastewater; the collection of garbage and recyclables; and the diversion of recyclables through the operation of the Sunnyvale Materials Recovery and Transfer Station.
(3) The Community Services Division is responsible for the day-to-day programming of City parks and recreational facilities.
(4) Other Public Safety includes but is not limited to Investigation Services, Community Safety Services, Public Safety Administration Services, and Public Safety Recruitment Projects.
(5) EPS assumption; reflects percentage of costs that are population-dependent, as opposed to fixed costs.

Sources: City of Sunnyvale Adopted Operating Budget FY 2018-19, p. 52; 280-466; Economic & Planning Systems, Inc.

General Government

Per the City of Sunnyvale's Adopted Operating Budget for FY 2018-19, the City's General Government category includes the following functions:

- City Attorney
- City Manager
- Finance
- Human Resources

Based on EPS's research in similar jurisdictions, new development of the Project's scale typically affects administrative and legislative government costs by only a fraction of these department's operating budgets. For example, the growth is not expected to result in an additional City Manager, Finance director, or City Attorney, or even proportionately more staff under each such department. As a result, EPS assumes that 25 percent of the cost of General Government services are variable and will be affected by new development. This yields a per service population estimate of about $27.86.

Community Development

Per the City of Sunnyvale's Adopted Operating Budget for FY 2018-19, the Community Development Department's functions include building safety, planning, housing, and Community Development Block Grant administration. EPS assumes that the cost structure for Community Development is 75 percent variable, which yields a per service population estimate of $5.12 based on the existing citywide average, as shown in **Table 11**. This 75 percent variability assumption is relatively conservative, as development functions may increase on a one-time basis with population growth but cities may not incur proportionately increased ongoing, annual development costs related to increased service populations.

Public Works

Per the City of Sunnyvale's Adopted Operating Budget for FY 2018-19, this category includes costs associated with operating and maintaining the City's infrastructure and facilities including public streets, and utilities. EPS estimates a percent variability of 75 percent, yielding a per service population estimate of $88.04, as shown in **Table 11**. This 75 percent variability assumption is relatively conservative, because the LSAP's development will occur within an existing urban area with most core infrastructure in place.

Environmental Services

According to the Department's description, the Environmental Services Department maintains the City's potable and recycled water systems, sanitary and storm sewer systems, wastewater treatment system, collects garbage and manages recyclables. EPS assumes that the cost structure for the department is 75 percent variable, which yields a per service population estimate of approximately $5.46 based on the existing Citywide average, as shown in **Table 11**. Again, this 75 percent variability assumption is relatively conservative, because the LSAP's development will occur within an existing urban area with most core infrastructure in place.

Information Technology

According to the Department's description, the Information Technology Department (ITD) provides an IT framework and solutions to all City departments, encompassing technical services to over 1,200 users within the City. EPS assumes that the cost structure for the department is 75 percent variable, which yields a per service population estimate of approximately $36.41 based on the existing Citywide average, as shown in **Table 11**. This 75 percent variability assumption is relatively conservative, as it is in proportion to other conservative assumptions about staffing and expenditure growth.

Library and Community Services

According to the Department's description, the Sunnyvale Public Library is open seven days a week, 66 hours per week and sees an average of approximately 2,000 visits per day. EPS assumes that the cost structure for the department is 75 percent variable, which yields a per service population estimate of approximately $72.13 based on the existing Citywide average, as shown in **Table 11**. Please note that EPS has not expressly assumed that a new library facility would be provided in or for the LSAP area, and thus the facilities and staffing costs are mostly fixed, rendering this 75 percent variability a conservative assumption.

Police Services

Per the City of Sunnyvale's Adopted Operating Budget for FY 2018-19, this department provides 24 hours-a-day and 365 days-a-year policing services to the City, keeps the peace and prevents and controls crime. Jurisdictions frequently maintain relatively constant numbers of police service staff (sworn officers, etc.) on a per capita basis as they grow, but command staff and facilities are not necessarily expected to grow at the same per capita pace. EPS assumes that the cost structure for Police Services is 90 percent variable, which yields a per service population estimate of $143.23 based on the existing citywide average, as shown in **Table 11.**

Fire Service

According to the Department's description, Fire Services prevents fires and hazardous materials related emergencies, minimizes injuries and property loss when an emergency occurs and provides public education and outreach during inspections**.** As with Police Services, EPS assumes that the cost structure for Fire Services is 90 percent variable, which yields a per service population estimate of $145.20 based on the existing citywide average, as shown in **Table 11.**

Other Public Safety

Other Public Safety includes Investigation Services, Community Safety Services, Public Safety Administration Services, and Public Safety Recruitment Projects. EPS assumes that the cost structure for Other Public Safety services is 75 percent variable, which yields a per service population estimate of $104.55 based on the existing citywide average, as shown in **Table 11.**

Net New Annual Fiscal Impact on General Fund

Based on the assumptions and analysis described above, the proposed development will be able to produce net revenues to the City's General Fund at both LSAP buildouts, as summarized in **Table 1** and in **Table 12,** below. Actual fiscal impacts may vary due to the timing of the Plan buildout and changes in economic and budgetary conditions.

Table 12 Summary of Net Fiscal Outcome

Item	Existing Conditions	Current LSAP	High Density LSA
Estimated GF Revenue[1]			
Property Tax	$1,335,683	$4,053,939	$7,134,33
Property Tax In Lieu of VLF	$420,884	$1,277,235	$2,247,67
Sales Tax	$4,598,405	$5,112,567	$5,717,83
Business License Tax	$88,783	$125,714	$143,25
Construction Tax	$0	$0	$
Real Property Transfer Tax	$28,674	$87,028	$153,15
Transient Occupancy Tax	$0	$0	$
Utility Users Taxes	$158,102	$416,670	$773,21
Franchises	$140,389	$369,987	$686,58
Rents and Concessions	$0	$0	$
Permits and Licenses	$26,977	$71,096	$131,93
Service Fees	$116,047	$305,837	$567,54
Sale of Property	$0	$0	$
Other Revenues	$0	$0	$
Total Revenues	**$6,913,944**	**$11,820,073**	**$17,555,53**
Estimated GF Expenditures[2]			
General Government[3]	$107,735	$284,590	$528,114
Community Development	$19,799	$52,301	$97,055
Public Works	$340,451	$899,329	$1,668,886
Environmental Services	$21,114	$55,774	$103,500
Information Technology	$140,797	$371,928	$690,188
Library and Community Services	$278,927	$736,808	$1,367,296
Subtotal	$908,823	$2,400,730	$4,455,03
Public Safety			
Police Services	$553,870	$1,463,094	$2,715,068
Fire Services	$561,488	$1,483,218	$2,752,411
Other Public Safety	$404,295	$1,067,978	$1,981,850
Total Expenditures	**$2,428,476**	**$6,415,020**	**$11,904,36**
Total Net Annual Fiscal Impact	**$4,485,468**	**$5,405,053**	**$5,651,16**

(1) See Table 6.
(2) See Table 10.
(3) Includes Departments of City Manager, City Attorney, Human Resources, and Finance.

Sources: City of Sunnyvale; Economic & Planning Systems, Inc.

Sensitivity Analysis

As noted above, EPS has assumed that 75 percent of the new units would be rentals, and 25 percent would be for-sale – a ratio generally consistent with the combined expectations of the two residential projects approved in the LSAP area thus far (Greystar and Calstone). In response to City inquiries, EPS ran a sensitivity analysis to test this assumption's impact on the results. Property tax revenue is one of the two largest revenue sources driving the positive fiscal results (sales tax being the other major driver), but under current market conditions for-sale units have higher value and thus generate a higher level of annual property taxes than rental units. The more for-sale units in a project, the higher anticipated property tax revenues to the City: property taxes are based on property values and in Sunnyvale market-rate sale prices per unit for condominiums are significantly higher than the estimated value of a comparable rental unit,

based on its capitalized income stream. Affordable for-sale units for moderate income households are also priced much higher than the capitalized value of affordable rental units for low and very low income households.

Because for-sale units generate significantly more revenue to the City, the assumption that 25 percent of the units will be for sale boosts the projected revenue from the LSAP. However; even in a scenario where 100 percent of units in the LSAP are rental, either as currently proposed or a higher density version, the net fiscal impact is positive and exceeds the current fiscal impact from the area, generating a minimum of nearly $5.00 million annually, as shown below in **Table 13**.

Table 13 Summary of Tenure Sensitivity Analysis

Item	Existing Conditions	Current LSAP		High Density LSAP	
Tenure		% Ownership		% Ownership	
		25%	**0%**	**25%**	**0%**
For Sale					
% Total	100%	25%	0%	25%	0%
Subtotal	*16*	*581*	-	1,484	0
Rental					
% Total	0%	75%	100%	75%	100%
Subtotal	-	*1,742*	*2,323*	*4,451*	*5,935*
Total	**16**	**2,323**	**2,323**	**5,935**	**5,935**
Fiscal Impact					
Revenues	$6,913,944	$11,820,073	$11,554,511	$17,555,532	$16,849,295
Expenses	$2,428,476	$6,415,020	$6,415,020	$11,904,368	$11,904,368
Net Fiscal Impact	**$4,485,468**	**$5,405,053**	**$5,139,491**	**$5,651,164**	**$4,944,927**

Residual Land Value Analysis

To understand the likelihood of a particular property or an aggregation of properties to be redeveloped for other uses as is envisioned under the current and high density LSAP scenarios, EPS has aimed to estimate and compare the value of properties for their existing use (e.g., as a leasable building for a flex/R&D tenant) versus the value of the underlying land for new development. If the land is worth more in the open market than the building is worth, a property owner may be motivated to sell the property for development. If the existing building generates greater proceeds than the property owner could gain by selling the site for development, it is likely to remain in its current use as a leasable building. These considerations are particularly important in understanding whether and to what extent the planned development under either LSAP scenario is likely to occur in the near- to mid-term based on foreseeable market conditions. Because both LSAP scenarios have the same amount of nonresidential use allowed, this analysis focuses on the feasibility of residential uses of different types and densities. Likewise, given the densities expected, we have focused on rental residential rather than for-sale.

This analysis utilizes a "static" (i.e. stabilized year) pro forma financial feasibility framework to estimate a prototypical rental residential development's market value, development cost, and the land value supported by the current LSAP zoning and by the increased density proposed for the LSAP. This approach compares real estate development value with the cost of project development in constant 2019 dollars. When real estate market values exceed development costs, the difference represents what a developer is able to pay for land. This calculation, commonly referred to as "residual land value," is the primary output of this analysis.

For a prototypical rental product, the analysis determines finished real estate value based on assumptions including market-supportable lease rates, operating costs, and market-based expectations for returns on investment. Development cost assumptions reflect standard (location-adjusted) "hard" construction costs (labor and materials for the building, its site, and its parking) and typical project "soft" costs (e.g., architecture and engineering, permit and impact fees, etc.). The assumptions reflect EPS research and third-party data (e.g., CoStar Group market data and Saylor construction cost estimates) as well as estimates of the various impact fees a developer would pay under the City's current fee schedule.

Pro Forma Model Assumptions

Site Assumptions

For the current LSAP scenario, the analysis assumes a typical project would be constructed at a density of 65.1 dwelling units per acre based on the comparable product currently under construction by Greystar in the LSAP, entitled for 520 units on 7.99 acres. For the high density LSAP scenario, the analysis assumes 100 dwellings units per acre based on the City's proposed upzoning. Assuming a 4-acre development site is typical for this Plan area (smaller than the Greystar project, but common and even above average for infill development in Silicon Valley), the prototypical residential development evaluated would be 260 units for the current LSAP and 400 units for the high density LSAP. Under both scenarios, EPS has assumed that the average unit size is 1,000 square feet of leasable living space, and that the buildings have an 80 percent efficiency ratio (i.e., leasable space accounts for 80 percent of the total building area).

Value Assumptions

This analysis builds on the market conditions established in EPS's LSAP Market Research Memorandum, and assumes achievable lease rates based on market research conducted using sources including CoStar Group, Redfin, and EPS knowledge of the local and regional commercial real estate landscape.

Rental Housing – Under both the current and high density LSAP scenarios, the multifamily rental market rate housing is expected to have a monthly lease rate of $3.66 per square foot (about $3,660 per month for an average 1,000 square foot unit). The below market rate rental housing will be priced for low- and very-low-income households (about $1.95 per square foot or $1,949 per month). The analysis also assumes stabilized vacancy is five percent and landlord operating expenses are approximately $13,000 per unit per year for the market rate units and $11,000 per unit per year for the below market rate units, accounting for lower taxes levied on below market units. Both rents and operating assumptions are the same as those used to derive value estimates for the fiscal analysis (see **Table 8**).

Cost Assumptions

For both the current LSAP and the high density LSAP, this analysis assumes five-story, wood-frame construction. Wrapped parking (units surrounding an above-ground, concrete parking structure) is assumed for the low density scenario and podium parking (two or more parking levels below the units) is assumed for the high density LSAP.

Site Costs – Site costs include demolition costs, basic site work, open space and park land costs, infrastructure costs (i.e., streets and utilities), and off-site mitigation costs.

Hard Costs – Project hard costs reflect construction labor and materials. For vertical construction, EPS reviewed construction cost estimating data from both Saylor and RS Means, in-house pro forma financial analyses for comparable development projects, and recent construction cost escalation estimates. Both housing densities are achievable using woodframe construction, so the hard costs per building square foot are similar. The primary difference between the two densities is in the parking costs, as wrapped parking is assumed to cost less per stall than podium parking.

Soft Costs – Soft costs include professional services associated with planning, design, and project approval; permits and fees; assumptions regarding taxes and insurance and financing costs; and general and administrative costs borne by the project developer.

Specific figures for each of these assumptions are shown on **Tables 13 and 14**.

Residual Land Value Calculation

The analysis estimates residual land value by subtracting the full development budget from the project's estimated market value. The development budget is calculated based on the above cost assumptions and the project's estimated market value is calculated by determining the maximum supportable development budget based on an estimated net operating income and yield requirement. Subtracting the development budget excluding land from that maximum supportable budget reveals the residual land value.

Feasibility Findings

The estimated residual land value of a 65-unit-per acre project in the current LSAP is approximately $3.04 million per acre, which means we would expect a developer intending to build a rental product to pay no more than $3.04 million per acre for the land. The estimated residual land value of a 100-unit-per-acre project in a high density LSAP is approximately $3.94 million per acre. The higher density product thus yields higher land value per acre, but not higher per unit, because the unit values are essentially the same while the cost per unit is higher for the higher density project. Again, this finding is largely related to the added cost of podium parking rather than a wrapped parking structure.

Table 13 Summary of Financial Feasibility Analysis, Current LSAP

DEVELOPMENT PROGRAM ASSUMPTIONS				TOTAL	Per Unit
Development Site (Acres)				4	
Dwelling Units[1]	65.1	DU / Acre		260	
Net Building Area (Square Feet)[2]	1,000	GBA / DU		260,325	
Gross Rentable Square Feet	80%	Efficiency Factor		325,407	1,250
Total Parking Spaces[3]	1.125	Spaces / DU		293	
Surface Parking Spaces	0%	of total parking		0	
Structured Parking Spaces	100%	of total parking		293	
BUILDING OPERATING INCOME (ANNUAL)			**PER GBA**	**TOTAL**	**Per Unit**
Market Rate Rental[4]					
Dwelling Units	85%	of total units		221	
Market Rate Net Building Area (Square Feet)	1,000	GBA / DU		221,277	
Gross Rentable Square Feet	80%	Efficiency Factor		276,596	1,250
Gross Potential Rent	$3.66	per SF/Month	$35	$9,718,468	$43,920
Gross Potential Parking Income[5]	$75	per Space/Month	$1	$224,043	$1,013
Losses to Vacancy	5.0%	of Gross Income	-$2	-$497,126	-$2,247
Gross Residential Revenue			$34	$9,445,385	$42,686
Operating Expenses	$13,176	per Unit/ Year	-$11	-$2,915,540	-$13,176
Net Operating Income (NOI)			**$24**	**$6,529,845**	**$29,510**
Supportable Development Cost	**4.5%**	**Project Yield Rate (on NOI)**	**$525**	**$145,107,660**	**$655,775**
BMR Rental					
Dwelling Units	15%	of total units		39	
BMR Net Building Area (Square Feet)	1,000	GBA / DU		39,049	
Gross Rentable Square Feet	80%	Efficiency Factor		48,811	1,250
Gross Potential Rent	$1.95	per SF/Month	$19	$913,742	$23,400
Gross Potential Parking Income	$75	per Space/Month	$1	$39,537	$1,013
Losses to Vacancy	5.0%	of Gross Income	-$1	-$47,664	-$1,221
Gross Residential Revenue			$19	$905,615	$23,192
Operating Expenses	$11,000	per Unit/ Year	-$9	-$429,537	-$11,000
Net Operating Income (NOI)			**$10**	**$476,078**	**$12,192**
Supportable Development Cost	**4.5%**	**Project Yield Rate (on NOI)**	**$217**	**$10,579,516**	**$270,931**
Total Supportable Development Cost			**$478**	**$155,687,176**	**$598,048**
PROJECT DEVELOPMENT COSTS			**PER GBA**	**TOTAL**	**Per Unit**
Construction Cost					
Basic Site Work	$22	per SF (Site)	$12	$3,781,008	$14,524
Building Direct Cost	$285	Cost/SF (GBA)	$285	$92,740,926	$356,250
Surface Parking Direct Cost	$5,000	per Space	$0	$0	$0
Structured Parking Direct Cost	$40,000	per Space	$36	$11,714,643	$45,000
Total Construction Cost			*$333*	*$108,236,577*	$415,774
Soft Cost					
Architecture and Engineering	4.0%	of Construction Cost	$13	$4,329,463	$16,631
Other Soft Costs	2.0%	of Construction Cost	$7	$2,164,732	$8,315
Permits and Fees[6]	$56,500	per DU	$45	$14,708,385	$56,500
Taxes and Insurance	2.0%	of Construction Cost	$7	$2,164,732	$8,315
Financing	4.0%	of Construction Cost	$13	$4,329,463	$16,631
Marketing/Leasing	3.0%	of Construction Cost	$10	$3,247,097	$12,473
Developer Fee	4.0%	of Construction Cost	$13	$4,329,463	$16,631
Total Soft Costs			$108	*$35,273,335*	$135,497
Total Cost without Land			**$441**	**$143,509,913**	**$551,271**
Residual Land Value	**Total Value less Total Cost**		**$37**	**$12,177,263**	**$46,777**
per acre				*$3,044,316*	
Total Project Cost			**$478**	**$155,687,176**	**$598,048**

(1) Dwelling Units per Acre derived using existing Greystar development density of 520 units on a site of 7.99 gross acres.
(2) Unit size of 1,000 SF is an industry standard assumption.
(3) Parking Standards based on Sunnyvale Off-Street Vehicle Parking Space Requirements. Figure used is an average of the parking standard for 1 bedroom units and 2 bedroom units.
(4) In line with Sunnyvale's existing affordable housing policies, the analysis assumes 15 percent of rental units will be affordable to low- and very low- income (80 and 50 percent of Area Median Income, respectively) households. This calculation assumes an average 70 percent of Area Median Income.
(5) Parking price is an industry standard assumption.
(6) Excludes inclusionary housing fee.

Table 14 Summary of Financial Feasibility Analysis, Proposed LSAP

DEVELOPMENT PROGRAM ASSUMPTIONS					Per Unit
Development Site (Acres)				4	
Dwelling Units[1]	100.0	DU / Acre		400	
Net Building Area (Square Feet)[2]	1,000	GBA / DU		400,000	
Gross Rentable Square Feet	80%	Efficiency Factor		500,000	1,250
Total Parking Spaces[3]	1.125	Spaces / DU		450	
Surface Parking Spaces	0%	of total parking		0	
Structured Parking Spaces	100%	of total parking		450	
BUILDING OPERATING INCOME (ANNUAL)			**PER GBA**	**TOTAL**	**Per Unit**
Market Rate Rental[4]					
Dwelling Units	85%	of total units		340	
Market Rate Net Building Area (Square Feet)	1,000	GBA / DU		340,000	
Gross Rentable Square Feet	80%	Efficiency Factor		425,000	1,250
Gross Potential Rent	$3.66	per SF/Month	$35	$14,932,800	$43,920
Gross Potential Parking Income[5]	$75	per Space/Month	$1	$344,250	$1,013
Losses to Vacancy	5.0%	of Gross Income	-$2	-$763,853	-$2,247
Gross Residential Revenue			$34	$14,513,198	$42,686
Operating Expenses	$13,176	per Unit/ Year	-$11	-$4,479,840	-$13,176
Net Operating Income (NOI)			**$24**	**$10,033,358**	**$29,510**
Supportable Development Cost	**4.5%**	**Project Yield Rate (on NOI)**	**$525**	**$222,963,500**	**$655,775**
BMR Rental					
Dwelling Units	15%	of total units		60	
BMR Net Building Area (Square Feet)	1,000	GBA / DU		60,000	
Gross Rentable Square Feet	80%	Efficiency Factor		75,000	1,250
Gross Potential Rent	$1.95	per SF/Month	$19	$1,404,000	$23,400
Gross Potential Parking Income	$75	per Space/Month	$1	$60,750	$1,013
Losses to Vacancy	5.0%	of Gross Income	-$1	-$73,238	-$1,221
Gross Residential Revenue			$19	$1,391,513	$23,192
Operating Expenses	$11,000	per Unit/ Year	-$9	-$660,000	-$11,000
Net Operating Income (NOI)			**$10**	**$731,513**	**$12,192**
Supportable Development Cost	**4.5%**	**Project Yield Rate (on NOI)**	**$217**	**$16,255,833**	**$270,931**
Total Supportable Development Cost			**$478**	**$239,219,333**	**$598,048**
PROJECT DEVELOPMENT COSTS			**PER GBA**	**TOTAL**	**Per Unit**
Construction Cost					
Basic Site Work	$22	per SF (Site)	$8	$3,781,008	$9,453
Building Direct Cost	$285	Cost/SF (GBA)	$285	$142,500,000	$356,250
Surface Parking Direct Cost	$5,000	per Space	$0	$0	
Structured Parking Direct Cost	$50,000	per Space	$45	$22,500,000	$56,250
Total Construction Cost			*$338*	*$168,781,008*	*$421,953*
Soft Cost					
Architecture and Engineering	4.0%	of Construction Cost	$14	$6,751,240	$16,878
Other Soft Costs	2.0%	of Construction Cost	$7	$3,375,620	$8,439
Permits and Fees[6]	$56,500	per DU	$45	$22,600,000	$56,500
Taxes and Insurance	2.0%	of Construction Cost	$7	$3,375,620	$8,439
Financing	4.0%	of Construction Cost	$14	$6,751,240	$16,878
Marketing/Leasing	3.0%	of Construction Cost	$10	$5,063,430	$12,659
Developer Fee	4.0%	of Construction Cost	$14	$6,751,240	$16,878
Total Soft Costs			$109	*$54,668,392*	$136,671
Total Cost without Land			**$447**	**$223,449,400**	$558,623
Residual Land Value	**Total Value less Total Cost**		**$32**	**$15,769,934**	**$39,425**
per acre				*$3,942,483*	
Total Project Cost			**$478**	**$239,219,333**	**$598,048**

(1) Dwelling Units per Acre derived using existing Greystar development density of 520 units on a site of 7.99 gross acres.
(2) Unit size of 1,000 SF is an industry standard assumption.
(3) Parking Standards based on Sunnyvale Off-Street Vehicle Parking Space Requirements. Figure used is an average of the parking standard for 1 bedroom units and 2 bedroom units.
(4) In line with Sunnyvale's existing affordable housing policies, the analysis assumes 15 percent of rental units will be affordable to low- and very low- income (80 and 50 percent of Area Median Income, respectively) households. This calculation assumes an average 70 percent of Area Median Income.
(5) Parking price is an industry standard assumption.
(6) Excludes inclusionary housing fee.

In just 2018-2019, 14 properties sold in the LSAP area. Some of these transactions have been for property acquisitions related to Intuitive Surgical's corporate expansion plans, while other properties have been purchased for other uses, potentially including new development. While purchase price data was not available for all 14 transactions, a review of available data shows many properties transacting at per acre prices well above EPS's estimated $3.0-$4.0 million per acre value for residential development (see **Table 15)**. Additionally, although the transaction occurred six years ago, in November 2013, we consider the Greystar property currently under construction in the LSAP, as a comparable sale because of the intended residential use. In 2013 the property transacted for $3.50 million per acre, a value between the residual land values for the two prototypes modeled above. We posit that the 2013 transaction figure remains relevant: we expect general stability in the cost of developable residential land since 2013 because increases in rents have been outpaced by increases in construction costs, which applies downward pressure on real land prices.

Table 15 Representative LSAP Transactions by Property Type, 2018-2019

Address[1]	Existing Property Type	Total Building Square Feet	Total Acres Sold	Lot Coverage	Sale Price	Sale P per A
1130 Kifer Rd[3]	Flex	100,400	7.99	0.351	$28,000,000	$3,50
818-824 Kifer Rd	Flex	47,272	3.09	0.351	$30,400,000	$9,83
1159 Sonora Ct	Flex	16,830	1.14	0.339		
923-925 Kifer Rd	Flex	12,000	0.61	0.452	$4,680,000	$7,67
1090 Kifer Rd (Part of Multi-Property Sale)	Flex	101,731	16.84	0.478		
1170 Sonora Ct	Flex	15,000	1.09	0.316	$8,900,000	$8,16
1484 Kifer Rd	Industrial	128,628	4.77	0.619	$33,000,000	$6,91
100-120 San Lucar Ct	Industrial	47,200	2.42	0.448		
932 Kifer Rd (Part of Multi-Property Sale)	Industrial	63,035	26.73	0.146		
1175 Aster Ave (Part of Multi-Property Sale)	Land (unimproved)	NA	39.87	NA		
1202 Kifer Rd	Office	8,156	0.51	0.184		
1388 Kifer Rd	Office	88,924	5.28	0.129	$33,000,000	$6,25
1294 Kifer Rd, 703	Office	25,360	0.23	1.784	$840,000	$3,65
1210 Kifer Rd	Retail	7,800	1.6	0.112	$5,900,100	$3,68
Weighted Average Price/Acre						**$5,86**

(1) Where address is part of multi-property sale, sales and acreage figures apply to all properties included in transaction.
(2) Sale price not available for all transactions.
(3) Greystar property, transacted in 2013.

Sources: Costar, Santa Clara County Assessor and Recorder

These data suggest that many existing uses in the LSAP area are worth more as leasable or occupiable buildings or as development sites for commercial development than their underlying land is worth for residential development. That residual land values for residential development are lower than nonresidential building market values suggest demand to convert existing LSAP real estate to residential will be modest in the near term. Given the demand and high market values for housing in the region and local area, residential development should be feasible with appropriately priced land, but the LSAP properties that will turn over soonest are likely to be older properties that are not commanding top pricing in the market. Even then, it is possible that such properties will be acquired as a speculative purchase awaiting improved residential project feasibility (e.g., higher values, lower costs), rather than being converted to residential use in the near term.

As such, this finding suggests that the residential development prospects in the LSAP area – whether under the existing Plan or the higher density LSAP – may not indicate a major windfall to property owners or developers that can be leveraged to achieve greater community benefits. Such benefits – be they more affordable housing, more open space, or other conditions – tend to add to development costs and/or reduce development values, either of which may pose a still greater feasibility hurdle for new residential development aiming to compete to acquire property in the LSAP area. Still, the higher density residential project (100 units per acre) does appear to increase the land value by a significant margin relative to the lower density project (65 units per acre), so it may be worthwhile pursuing the higher density LSAP because it can potentially yield more housing sooner and does indicate a preferable fiscal impact as discussed earlier in this document.

APPENDIX C | HOUSING EXPANSION INFRASTRUCTURE IMPACT STUDY

LAWRENCE STATION AREA PLAN

PROPOSED INCREASE IN HOUSING POTENTIAL WITHIN THE LSAP (HOUSING EXPANSION BUILDOUT) INFRASTRUCTURE IMPACT STUDY

June 22, 2020

255 Shoreline Drive, Suite 200
Redwood City, CA 94065
650.482.6300

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Appendix A – Block Book Pages for Lawrence Station Area Plan

Appendix B – LSAP Parcels with Development Assumptions

Appendix C – LSAP Potable Water Model Reports

Appendix D – LSAP Sewer Model Reports

Appendix E – Potable Water System Demand Calculations

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SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Project Overview

The proposed Lawrence Station Area Plan (LSAP) Amendment Project (Project) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California and is approximately 252.09 acres. The overall LSAP project is divided into two study areas: the Housing Expansion Study Area (i.e. proposed modifications to the adopted LSAP would allow for an addition of 3,612 net new units within portions of the adopted LSAP) and the Office Expansions Study Area. This Infrastructure Study will address the Housing Expansion Study Area which is bounded by the City of Santa Clara to the north and east, Reed Avenue, Aster Avenue, and the railroad right of way (ROW) to the south, and the Intuitive Surgical (ISI) offices to the west. The project site is located in the far eastern area of the City of Sunnyvale around the Lawrence Caltrain station. Figure 1.1 - Project Location - illustrates the regional location of the Project.

The Housing Expansion Study Area is approximately 219.70 acres that include 25.27 acres of public ROW, 17.94 acres of railroad ROW, and 176.49 acres of existing developments.

The Office Expansion Study Area is approximately 32.39 acres industrial land owned by ISI that is proposed for redevelopment as office/R&D that encompasses existing developments for ISI and an industrial site. The office LSAP is bounded by Central Expressway and Kifer Road to the north, City of Santa Clara and the Housing Expansion Study Area to the east, railroad ROW to the south, and commercial developments east of Commercial Street and San Lucar Court. Figure 1.2 - Project Study Area and Context - illustrates the Study Area Boundaries and the location of the Project within the City. Please refer to the Office Expansion Buildout Infrastructure Impact Study for analysis within the Office Expansion Study Area.

FIGURE 1.1 PROJECT LOCATION



FIGURE 1.2 PROJECT STUDY AREA AND CONTEXT



The housing expansion study area includes a mixed-use community with a wide range of residential, retail, and office. Existing utility infrastructure requiring upgrades to serve the

proposed increase in allowable housing potential within the adopted LSAP (i.e. the addition of 3,612 net new units within the LSAP) will be identified in this study.

1.2 Lawrence Station

1.2.1 Existing Conditions and Land Use

The LSAP area is approximately 252.09 acres. The study area includes portions of the Lawrence Caltrain station as well as existing commercial, industrial, and residential properties. Existing conditions and Land Uses within the LSAP include several development projects under construction, including new office buildings, mixed-use residential and retail, and self-storage.

1.2.2 Adopted LSAP Conditions

In December 2016, the Sunnyvale City Council approved the LSAP and its associated General Plan Amendment and Rezoning. The LSAP consisted of primarily residential redevelopment with office and research and development (R&D) developments interspersed. The adopted LSAP includes 2,323 residential units and 1,200,000 square feet (sf) of net new office/R&D development.

1.2.3 Proposed Conditions

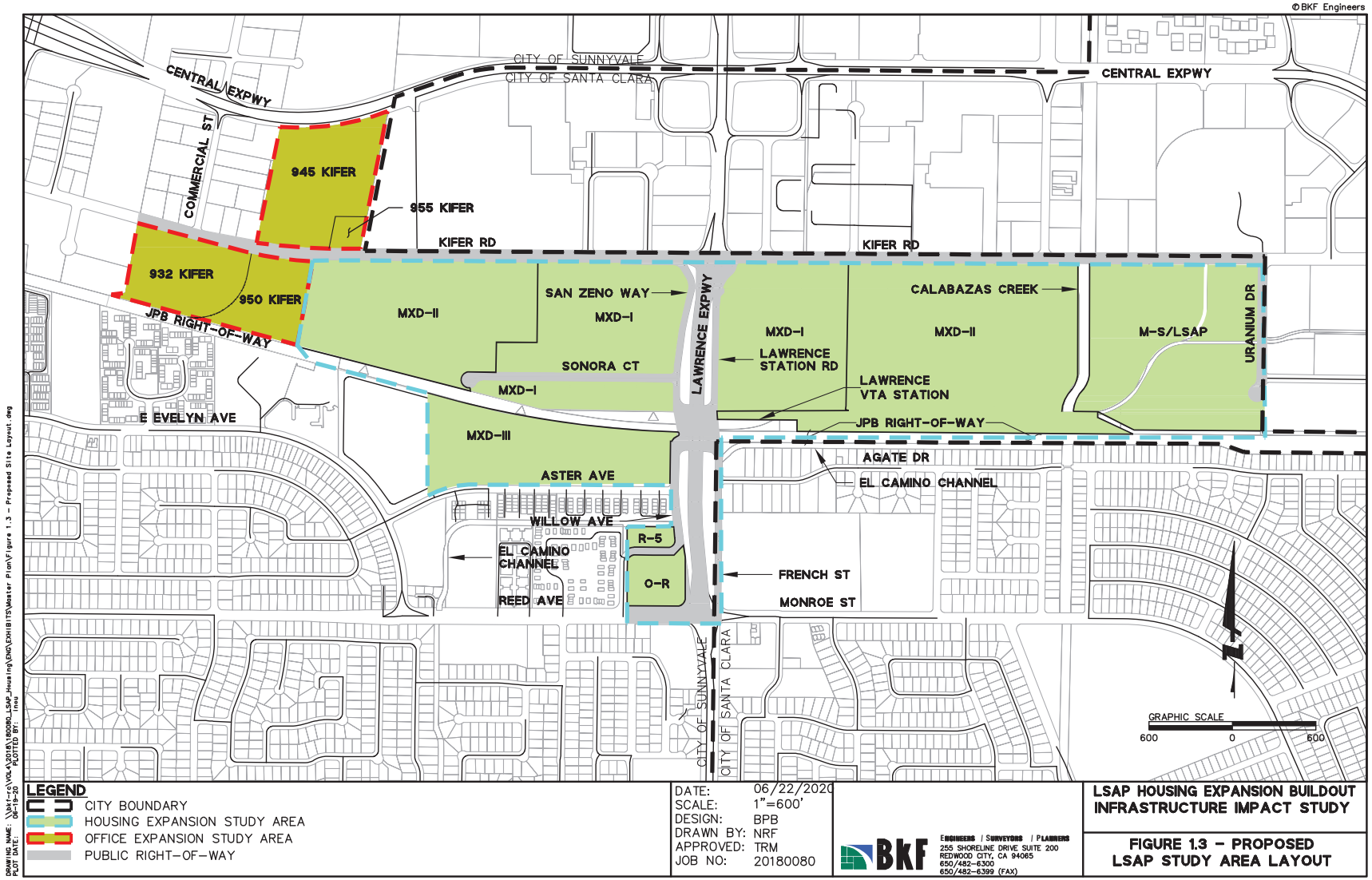
At the time of the City's LSAP adoption (December 2016), the Sunnyvale City Council directed staff to return with a plan to study additional housing opportunities within the LSAP area. There are no planned increases to office/R&D development potential. The City Council subsequently selected a preferred land use alternative on June 26, 2018, which studies an increase in the residential density allowance for both MXD-I (Flexible Mixed-Use I) and MXD-II (Flexible Mixed-Use II) zoned areas, and expands the area where housing may be considered to the M-S/LSAP (Industrial and Service, LSAP Combining District) and O-R (Office/Retail) zoning districts.

Residential development capacity under the adopted LSAP allows for a maximum of 2,323 net new dwelling units under the plan's 'Estimated Likely Development Scenario'. A total of 1,261 net new housing units have been approved by the City since the LSAP was adopted in December 2016; therefore, a balance of 1,062 net new housing units currently remains for buildout within the adopted LSAP. With implementation of the proposed LSAP Update, the addition of 3,612 net new units would be allowable within the plan area. In addition, the maximum density allowance (with incentives) for MXD-I and MXD-II zoned areas within the LSAP would increase from 68 dwelling units per acre (du/ac) to 100 du/ac. The project would also expand where new housing may be considered to the M-S/LSAP zoning district with a maximum density allowance (with incentives) of 100 du/ac and O-R zoning district with a maximum density allowance (with incentives) of 54 du/ac. The housing expansion study area for the LSAP update is shown in Figure 1.3 – Proposed LSAP Study Area Layout.

1.3 Project Datum

All elevations referenced herein are based on the following:

- Vertical datum used in the City of Sunnyvale's Utility and GIS Maps
- Record drawings provided by the City for Aster Avenue and Willow Avenue
- Manhole survey data provided by the City for Lawrence Expressway


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CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
955 KIFER
KIFER RD
KIFER RD
932 KIFER
950 KIFER
JPB RIGHT-OF-WAY
MXD-II
SAN ZENO WAY
MXD-I
SONORA CT
MXD-I
LAWRENCE EXPWY
MXD-I
LAWRENCE STATION RD
LAWRENCE VTA STATION
MXD-II
CALABAZAS CREEK
M-S/LSAP
URANIUM DR
JPB RIGHT-OF-WAY
E EVELYN AVE
MXD-III
ASTER AVE
AGATE DR
EL CAMINO CHANNEL
WILLOW AVE
R-5
EL CAMINO CHANNEL
O-R
FRENCH ST
REED AVE
MONROE ST
CITY OF SUNNYVALE
CITY OF SANTA CLARA
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
PUBLIC RIGHT-OF-WAY
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE IMPACT STUDY
FIGURE 1.3 – PROPOSED LSAP STUDY AREA LAYOUT
DRAWING NAME: \\bkf-cifs\VOL4\2015\180080_LSAP_Housing\DWG\EXHIBITS\Master Plan\Figure 1.3 – Proposed Site Layout.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau

SECTION 2: POTABLE WATER SYSTEM

2.1 Potable Water System Design Criteria

The design criteria used for the development of the potable water model is based upon established industry operations standards and regulatory agency requirements. The potable water system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. Since the City of Sunnyvale does not have written standards for water generation, this report will use Redwood City's Design Standards to estimate project water demands based on correspondence between the City and BKF. The one exception is that this analysis will calculate residential demand using 55 gallons per day per capita based on correspondence between BKF and the City of Sunnyvale. The intent of this study is to identify which existing City water mains will need to be upgraded in order to provide adequate water supply to the LSAP. All existing water mains are located within the City Right-of-Way except for an existing 12-inch main running between Kifer Road and Sonora Court located in a public utility easement.

The design criteria are dependent on the demand scenario. Table 2.1 – Potable Water System Demand and Peaking Factor presents the potable water system demand and peaking factor for the demand scenario. Assumed peaking factors for max day demand and peak hour demand scenarios are based on correspondence between BKF and the City of Sunnyvale.

Table 2.1
Potable Water System Demand and Peaking Factor

Parameter	Value
Average Day Demand (ADD)	1,319,228 gpd
Fire Flow Demand (FF)	4,500 gpm
Maximum Day Demand (MDD)	MDD = 2.0 ADD
Peak Hour Demand (PHD)	PHD = 3.0 ADD

Notes:
1. Fire flow demand based on an assumed R-2 Occupancy type building and construction Type III-A, assuming 25% fire flow reduction for sprinkling.
2. gpd = gallons per day
3. gpm = gallons per minute

Table 2.2 – Potable Water System Design Criteria presents the potable water system design criteria.

Table 2.2
Potable Water System Design Criteria

Parameter	Value
Pipe size	Pipe diameters of 8, 10, 12, and 16 inches shall be used for all distribution and feeder mains.
Pipe Material	For water mains 12-inches and smaller shall be C900 DR14 PVC pipe or AWWA C-151/A21.51 ductile iron pipe (DIP). Water mains larger than 12-inches shall be C905 DR14 PVC or AWWA C-151/A21.51 DIP.
Hazen Williams C-value for recommended pipes	140 for DIP, 150 for PVC
Maximum static pressure	120 psi
Maximum velocity during PHD	7 fps
Maximum velocity during MDD+FF	15 fps
Minimum system pressure during MDD+FF	20 psi

Notes:
fps = feet per second
psi = pounds per square inch

2.2 Potable Water System Layout

Potable water is supplied to the LSAP by the City of Sunnyvale through an existing 12-inch diameter cast iron pipe (CIP) in Lawrence Expressway from the north and a 12-inch diameter asbestos-concrete pipe from the south. Additionally, there is an existing 12-inch diameter CIP in Kifer Road. Aster Avenue and Reed Avenue both contain existing 10-inch diameter CIPs. Existing potable water system layout is shown on Figure 2.1 – Existing Potable Water System.

2.3 Upgraded Potable Water System

2.3.1 Proposed Water Demand Factors

The potable water demand factors used for the Project's various land uses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD). The total estimated water demands for the Project land uses are shown on Table 2.4 – Total Buildout Potable Water Demand Summary (ADD). Water demands are derived from Redwood City's Design Standards with the exception of indoor water demands. Per capita demands for indoor residential demand was determined based on input from the City of Sunnyvale.

Table 2.3
LSAP Potable Water Demand Factors (ADD)

Land Use	Indoor Potable Water Demand Factors (ADD)	Outdoor Potable Water Demand Factors (ADD)	Total Water Demand (ADD)
Residential[1]	121 gpd/unit	37.4 gpd/unit	158.4 gpd/unit
Office/R&D	0.13 gpd/sf	0.072 gpd/sf	0.202 gpd/sf
Industrial	0.21 gpd/sf	0 gpd/sf	0.21 gpd/sf
Restaurant	30 gpd/seat	0 gpd/seat	30 gpd/seat
Storage Facility	0.003 gpd/sf	0 gpd/sf	0.003 gpd/sf

Notes:
1. Indoor potable water demand based on 55 gpd/person * 2.2 persons/unit. Outdoor potable water demand based on 17 gpd * 2.2 persons/unit. 55 gpd/person was determined after a phone conversation between BKF and Eric Evans with the City of Sunnyvale.
2. sf = square feet

2.3.2 Model Results Discussion

The existing potable water system is sufficient to supply the potable water demands as well as provide fire flow to the study area. Under the scenario of max day demand and fire flow, the water model analysis determined that the flow demand would be at its highest of any scenario at 4,820 gpm as seen in Appendix C-3 – Model Demand Scenario 3: Max Day Demand + Fire Flow. However, the existing potable water system is able to provide a flow between 5,000 and 6,000 gpm, which sufficiently meets the max day and fire flow demands. The impact of the proposed LSAP indicates that no improvements are required for the City's potable water system.

2.4 Potable Water System Model Water Demands

2.4.1 Sources of Land Use Water Demand Data

Potable water demand factors for the model analyses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and were applied to the project program to develop the project potable water demand total. Table 2.4 – Total Buildout Potable Water Demand Summary (ADD) provides water demands by land use including proposed sites associated with the LSAP and existing parcels expected to remain within the LSAP area.

See Appendix E – Potable Water System Demand Calculations, for model demand calculations on a block by block basis. Total project development will not exceed the demands presented in Table 2.4 – Total Buildout Potable Water Demand Summary.

2.4.2 Average Day Demand (ADD)

The demand factors are presented in Table 2.3 – LSAP Project Potable Water Demand Factors (ADD). The demand summary for the overall LSAP Housing Expansion including proposed sites associated with the LSAP and existing parcels to remain is presented in Table 2.4 – Total Buildout Potable Water Demand Summary (ADD). Table 2.5 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) reflects the average day demand for the Office Expansion Study.

Table 2.4
Total Buildout Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Residential	5,935	Units	158.4	940,104
Office/R&D	1,212,374	sf	0.202	244,900
Industrial	614,598	sf	0.21	129,065
Restaurant[1,2]	156	seat	30	4,680
Storage Facility	159,637	sf	0.003	532
			Total	1,319,281

Notes:
1. Existing restaurant located at 1210 Kifer Road is assumed to have 156 seats. This is based on the assumption that 50% of restaurant space (7,800 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:

$$(7{,}800\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 156\ seats$$

2. Restaurant is defined as employee amenity space.
3. The square footage numbers provided in this table present the project buildout numbers and the existing parcels expected to remain.

Table 2.5
Office Expansion Study LSAP Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Office/R&D	351,000	sf	0.202	70,902
Industrial	831,000	sf	0.21	174,510
Restaurant[1,3]	580	seat	30	17,400
			Total	262,812

Notes:
1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant space (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:

$$(29{,}000\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 580\ seats$$

2. Block by block water demand calculations shown in Appendix E.
3. Restaurant is defined as employee amenity space.

2.4.3 Maximum Day Demand

Maximum Day Demand (MDD) represents the maximum volume of water used in a 24-hour period for the entire year. A water system is typically evaluated under a maximum day plus fire flow demand condition as this condition allows the system to be stressed at a higher demand rate to ascertain if pipeline carrying capacities are adequate in a fire emergency. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 2 was applied to ADD.

2.4.4 Peak Hour Demand

Peak Hour Demand (PHD) represents the highest hourly demand for the entire system, and simulates the highest flow rate expected. To determine the PHD, a peaking factor was applied to increase the ADD. Peaking factors represent the increase above ADD and are a statistical concept typically obtained from historical data. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 3 was applied to ADD.

2.4.5 Fire Flow Demand

The fire flow (FF) demand is assumed to be 4,500 gallons per minute (gpm) based on correspondence between the City of Sunnyvale, Ascent Environmental, and BKF Engineers.

2.5 Potable Water System Model Boundary Conditions

The recommended potable water system is modeled based on calibrated boundary conditions and fire hydrant flow data received from the city completed for the LSAP Project. Since the LSAP Project is redeveloping existing lots, the recommended water model is analyzing existing City water mains and identifying which water mains will need to be upgraded in order to provide adequate water supply for the redevelopment.

2.6 Potable Water System Model Scenario

The LSAP water model was created in Bentley Water CAD V8i SELECT series 1. A series of model scenarios were created to reflect the range of demand usage patterns and confirm conformance to the Potable Water System Design Criteria outline in Table 2.2 – Potable Water System Design Criteria. Three model runs are prepared for the Housing Expansion Study Area and are shown in Table 2.6 – LSAP Project Model Runs – Housing Expansion Study.

Table 2.6
LSAP Project Model Runs – Housing Expansion Study

Run	Description
1	Static Pressures
2	Peak Hour Demand
3	Maximum Day Demand + Fire Flow

See Appendix C – LSAP Potable Water Model Reports for model run results.

2.7 Recommended Potable Water System Model Results

The existing potable water system, as shown in Appendix C – LSAP Potable Water Model Reports, is designed to meet the design criteria outlined in Table 2.2 – Potable Water System Design Criteria. Table 2.7 – Potable Water System Results for Housing Expansion Study summarizes the pressure and velocity results for the referenced model scenarios listed in Table 2.6 – LSAP Project Model Runs – Housing Expansion Study. Refer to Appendix C – LSAP Potable Water Model Reports for detailed results of model scenarios.

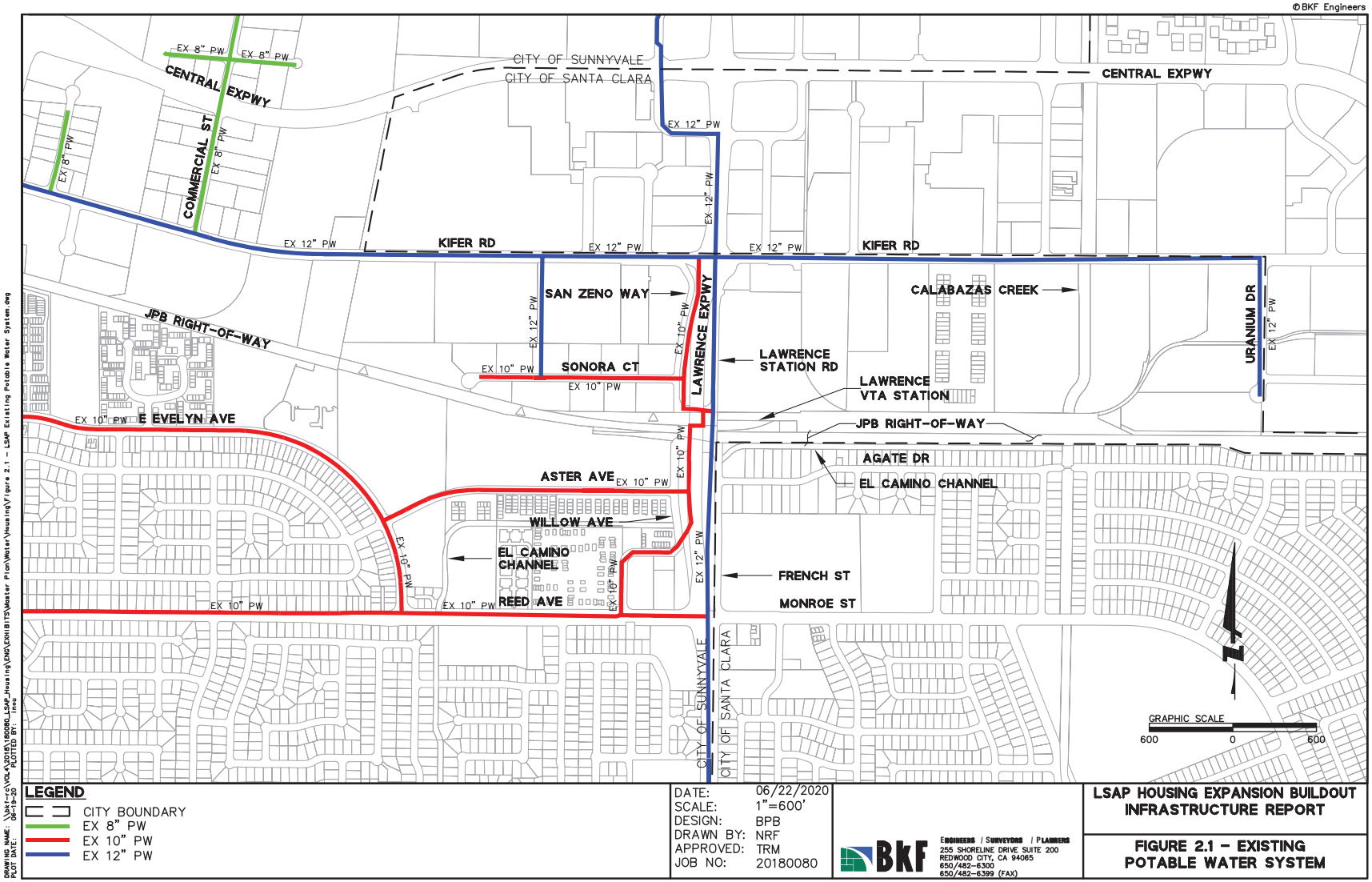
Table 2.7
Potable Water System Results for Housing Expansion Study

Parameter	Requirement	Minimum	Maximum
Static ADD Pressure (psi)	120 max	68	85
PHD Velocity (fps)	7 max	-	2.96
MDD+FF Pressure (calculated system lower limit at total flow available) (psi)	20 min	33	-
MDD+FF Velocity (fps)	15 max	-	< 15

Note:
MDD+FF pressure was 4,820 gpm, however the model was allowed to run with flows higher than 5,000 gpm, which resulted in it stopping at 15 fps.

2.8 Potable Water System Conclusion

Based on the results shown in Appendix C-2 – Model Demand Scenario: Peak Hour Demand and C-3 – Model Demand Scenario: Max Day Demand + Fire Flow, the existing potable water system is sufficient to meet proposed potable water and fire flow (FF) demands during average day demand (ADD), max day demand (MDD), and peak hour demand (PHD). No new upgrades to the potable water system were determined to be needed at this time. A water supply analysis will be prepared by Ascent Environmental.


©BKF Engineers
CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
COMMERCIAL ST
KIFER RD
JPB RIGHT-OF-WAY
SAN ZENO WAY
SONORA CT
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
CALABAZAS CREEK
URANIUM DR
E EVELYN AVE
ASTER AVE
WILLOW AVE
REED AVE
EL CAMINO CHANNEL
AGATE DR
FRENCH ST
MONROE ST
EX 8" PW
EX 10" PW
EX 12" PW
GRAPHIC SCALE
600 0 600
LEGEND
CITY BOUNDARY
EX 8" PW
EX 10" PW
EX 12" PW
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 2.1 – EXISTING POTABLE WATER SYSTEM
DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Water\Housing\Figure 2.1 – LSAP Existing Potable Water System.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

SECTION 3: SANITARY SEWER SYSTEM

3.1 Sanitary Sewer System Design Criteria

The design criteria used for the development of the sanitary sewer model is based upon established industry operations standards and regulatory agency requirements. The sanitary sewer system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water codes and standards unless otherwise permitted. At certain locations within the project area, City design guidelines were supplemented with manhole survey data and record drawings provided by the City. Sanitary sewer generation is assumed to be 95% of indoor potable water demands. This infrastructure study will identify which existing City sewer mains will need to be upgraded in order to support the anticipated sewer flows from the development within Housing Expansion Study Area. All existing sewer mains are located within the City right-of-way. The pipe material of existing sewer mains is vitrified clay pipe (VCP). The design criteria are dependent on the demand scenario. Table 3.1 – Sanitary Sewer System Design Criteria presents the sanitary sewer system design criteria based on the supplemental information received from the City.

Table 3.1
Sanitary Sewer System Design Criteria

Parameter	Value
Minimum pipe size	8-inch inside diameter
Pipe Material	PVC SDR-26 or better
Manning's coefficient, n, for recommended PVC pipes	0.01
Minimum Slope	0.5% (0.005 feet/feet) for sewer diameters 8-inches and smaller, 0.4% (0.004 feet/feet) for sewer diameters 10-inches and larger.
Maximum Slope	14.0% (0.14 feet/feet)
PWWF Maximum Pipe Flow Depth Ratio, *d/D*	0.5 for sewer diameters 10-inches and smaller, 0.75 for sewer diameters 12-inches and larger
Minimum Depth of Cover	5 feet below finished grade
Sewer Generation	95% of indoor potable water demand

Notes
ADWF = Average Dry Weather Flow
d/D = ratio of depth of flow (*d*) to the pipe inside diameter (*D*)
fps = feet per second
PWWF = Peak Wet Weather Flow

Four flow conditions were analyzed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

The ADWF is 95% of the indoor potable water demand. To account for existing flows entering the project area from other areas of the city, existing sewer flows collected from flow monitoring sites at Lawrence Road north of Warburton Avenue, Kifer Road west of Lawrence Expressway, and Aster Avenue west of Willow Avenue were incorporated into the sanitary sewer model analysis. Existing sewer flow data collected from the flow monitoring sites were received

from the City on February 6, 2020. According to the City of Sunnyvale's Sanitary Sewer Systems Design Standards, the PDWF peaking factor is dependent upon ADWF. We have assumed a Peak Dry Weather Flow (PDWF) peaking factor that varies between 2.5 and 3.5 which is based on individual parcel demands. PWWF is based on PDWF and a design inflow and infiltration rate based on a 10-year storm event that is 65% of the ADWF. Table 3.2 – Sanitary Sewer System Peaking Factor summarizes the peaking factor to achieve PWWF based on the supplemental information received from the City.

Table 3.2
Sanitary Sewer System Peaking Factor

Parameter	Value
Indoor Potable Water Demand	1,010,021 gpd
Average Dry Weather Flow (95% of Indoor Water Demand)	959,520 gpd
PDWF[1]	PDWF = (varies between 2.5 and 3.5) * ADWF
PWWF	PWWF = ADWF * (PDWF peaking factor + 0.65)

Notes:
PDWF peaking factor is dependent upon ADWF for each parcel.
PDWF = Peak Dry Weather Flow
PWWF = Peak Wet Weather Flow
ADWF = Average Dry Weather Flow

3.2 Sanitary Sewer Collection System

3.2.1 Existing Sanitary Sewer Collection System

The existing sanitary sewer collection system within the vicinity of the LSAP consists of sewer mains that vary in size between 6-inches to 27-inches and a single lift station on Kifer Road located at the crossing over Calabazas Creek. Pipe material of the existing sewer mains is VCP. The lift station consists of a wet well system.

The existing sanitary sewer system within the LSAP boundary consists of a single drainage area. Sanitary sewer flows generally drain by gravity and ultimately drain to the existing 27-inch sanitary sewer main in Lawrence Expressway. The City provided BKF with record drawings, sewer manhole survey data and construction documents for sanitary sewer mains in Lawrence Expressway, Willow Avenue, and Aster Avenue. A layout of the existing sanitary sewer system is shown on Figure 3.1 – Existing Sanitary Sewer System and existing sanitary sewer manholes are represented on Figure 3.2 – Existing Sanitary Sewer Manholes.

3.3 Recommended Sanitary Sewer System Layout

Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing and Figure 3.4 – Recommended Sanitary Sewer Model Pipe Labels shows the sanitary sewer system collection system with recommended sewer main upgrades required for the LSAP. Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing shows which existing sanitary sewer mains will require upgrades in order to handle the increased sanitary sewer demands from the proposed LSAP.

3.3.1 Kifer Road Lift Station

The analysis of the existing Kifer Lift Station involved reviewing the existing and proposed sanitary sewer ADWF flows into the lift station. The existing sanitary sewer flow during ADWF was determined to be 83 gpm as derived from the building square footages from the M-S/LSAP zone adjacent to Uranium Drive as shown on Figure 3.2 – Existing Sanitary Sewer Manholes. The proposed sanitary sewer ADWF flow into the lift station was determined to be 160 gpm based on the sewer analysis model used throughout this report. BKF provided the existing and proposed sewer flows to the city. The City reviewed the information provided and confirmed the existing Kifer Road Lift Station has enough capacity to serve the LSAP buildout condition.

3.4 Sanitary Sewer System Model Sewer Flows

3.4.1 Land Use Sewer Generation Data

The sanitary sewer flows used are based on the indoor potable water for each land use. Outdoor water demands are not included in sanitary sewer flows because outdoor drains connect to the storm drain system.

3.4.2 Average Dry Weather Flow

The sanitary sewer ADWF is intended to be representative of the average day sanitary sewer generation. The sanitary sewer ADWF is a function of the indoor water use ADD. Table 3.3 – Total Buildout Sanitary Sewer Demand Summary represents the indoor water use ADD and sanitary sewer demands generated for each land use shown in Table 2.4 – Total Buildout Potable Water Demand Summary (ADD) including proposed sites associated with the LSAP and existing parcels to remain. The sanitary sewer ADWF is based on 95% of the indoor potable water ADD. Total sewer demand use for each development is detailed in Appendix F - Sanitary Sewer Demand Calculations. Sewer generation (gpm) that was calculated for each parcel was applied to each sewer line in the street that was adjacent to that particular parcel. This allows an even distribution of sewer generated for a particular parcel to account for existing sanitary sewer lines in the street. Table 3.6 – Office Expansion Study LSAP Sanitary Sewer Demand Summary represents the indoor water use and sanitary sewer demands generated from the office expansion.

Table 3.3
Total Buildout Sanitary Sewer Demand Summary

Land Use[1]	Number	Unit	Indoor Domestic Water Demand (gpd)	Sanitary Sewer Demand (gpd)
Residential	5,935	sf	718,135	682,228
Office/R&D	1,212,374	sf	157,609	149,728
Industrial	614,598	sf	129,065	122,612
Restaurant[2]	156	seat	4,680	4,446
Storage Facility	159,637	sf	532	506
		Total	1,010,021	959,520

Notes:
1. Existing restaurant located at 1210 Kifer Road is assumed to have 156 seats. This is based on the assumption that 50% of restaurant space (7,800 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:
$$(7{,}800\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 156\ seats$$
2. Restaurant is defined as employee amenity space.
3. The square footage numbers provided in this table represent project buildout numbers including nonresidential buildings expected to remain.

3.4.3 Peak Dry Weather Flow (PDWF)

The sanitary sewer PDWF is the highest sanitary sewer generation during the day due to diurnal peaks associated with higher water usage in the morning and early evening hours. PDWF is determined by applying a peaking factor to ADWF. City of Sunnyvale has varying peaking factors for PDWF which is dependent upon ADWF for each parcel. Peaking factors for the LSAP vary between 2.5 and 3.5.

3.3.3 Peak Wet Weather Flow (PWWF)

The sanitary sewer PWWF incorporates infiltration and inflow rate at 65% of the ADWF. This rate is added to the PDWF peaking factor.

Inflow is surface water that enters the wastewater system from yards, roof drains, downspouts, storm drain cross connections, or through manhole covers due to overland flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow

flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow typically occurs during heavy storm events or prolonged periods of precipitation.

Infiltration is groundwater that enters sewer facilities such as pipelines, laterals, and manholes through holes, breaks, joint/connection failures, and other openings. Infiltration is directly correlated to the total amount of piping and appurtenances in the ground. Infiltration quantities vary due to seasonal variation in the groundwater levels influenced by storm events, surface and soil conditions, condition of sanitary sewer systems, and type of pipe joints. The highest infiltration flows are typically observed following significant storm events and during the winter or peak precipitation months, when groundwater levels are high.

3.5 Sanitary Sewer Flow Distribution

Each parcel's total sanitary sewer generation was determined by reviewing the planned parcel land use and applying applicable land use sanitary sewer generation. The parcel land use summary is included in Appendix F – Sanitary Sewer System Demand Calculations for reference. Sanitary sewer flows from the proposed LSAP Office Expansion (i.e. ISI project) was included in the model results due to the LSAP Office Expansion located within the LSAP Housing Expansion Buildout Infrastructure on Kifer Road. Refer to the Lawrence Station Area Plan Office Expansion Buildout Infrastructure Impact Study for a detailed analysis with the expanded office use.

Each parcel's total sanitary sewer flow was divided equally amongst the sanitary sewer manholes bordering the parcel as shown in Figures 3.2 – Existing Sanitary Sewer Manholes and 3.4 – Recommended Sanitary Sewer Model Pipe Labels. The parcel flow entering a manhole represents a sanitary sewer lateral point of connection.

3.6 Hydraulic Grade Line Considerations

The analysis of the sanitary sewer system is assumed to be a free outfall condition.

3.7 Sanitary Sewer Boundary Conditions

In addition to the flow monitoring survey data provided by the City, the recommended sanitary sewer system is modeled based on boundary conditions taken from Technical Memorandum 7 attached to the City of Sunnyvale's 2015 Wastewater Collection System Master Plan. Since the LSAP Project is redeveloping existing lots, the proposed sewer model is analyzing existing City sewer mains and identifying the sewer mains that will need to be upgraded in order to abide by supplemental information provided by the City.

3.8 Model Scenario Results and Analysis

The LSAP sanitary sewer model was created using a Bentley StormCAD V8i SELECT series 5.

The following sanitary sewer model flow conditions were developed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

Sanitary sewer model inside diameters were based on JM Eagle PVC Pipe Size for SDR 26 (160 psi). Installation of the sewer system should be based on the modeling of the product.

3.8.1 Pipe Diameter

The recommended sanitary sewer pipe sizes are shown on Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing. The recommended sanitary sewer system consists of 12-inch to 30-inch diameter pipes. Exhibits show nominal pipe diameters. The sewer systems were modelled with the inside pipe diameters. Pipe upgrades for portions of the sanitary sewer system were based on the d/D exceeding the allowable depth of flow of 0.50 for pipe sizes 10-inches and smaller, and 0.75 for pipe sizes greater than 12-inches per the supplemental information the City provided.

3.8.2 Flow Velocity

The flow velocities through the pipes were calculated using the Manning's equation. The Manning's equation calculates the flow velocities using the pipe's roughness coefficient, the hydraulic radius, and the slope of the pipe.

While most of the existing sewer mains are able to provide 2 fps during PWWF conditions, this was not achievable for all existing sewer mains. For sewer mains that flowed under 2 fps during PWWF conditions, these sewer mains are flowing at less than half pipe capacity. Therefore, these existing sewer mains will not be upgraded as it has sufficient capacity for future sewer demands and will achieve minimum 2 fps flow velocity requirements when flowing half-full. The existing sewer mains are upsized if found to be flowing greater than the d/D at PWWF requirements (0.5 or 0.75).

3.8.2.1 Average Dry Weather Flow (ADWF)

Figure 3.5 – Average Dry Weather Flow Pipe Velocity illustrates the ADWF pipe velocities for the sanitary sewer system. The sanitary sewer system ADWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The results of the analysis show LSAP ADWF velocities ranging from approximately 0.61 fps to 7.36 fps in the City's existing sewer system. ADWF velocities in the recommended City sewer system range from approximately 0.84 fps to 7.28 fps.

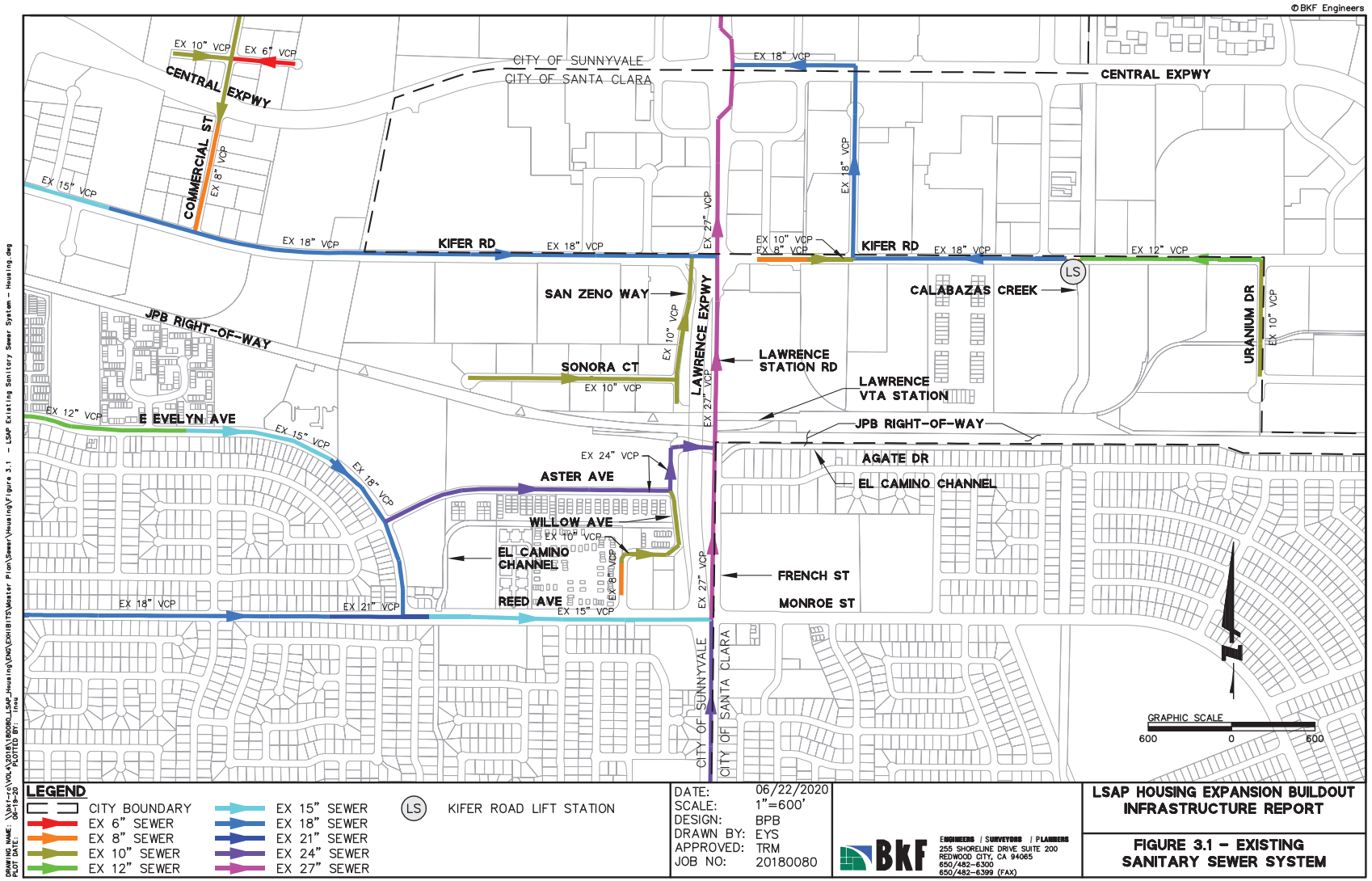
3.8.2.2 Peak Wet Weather Flow (PWWF)

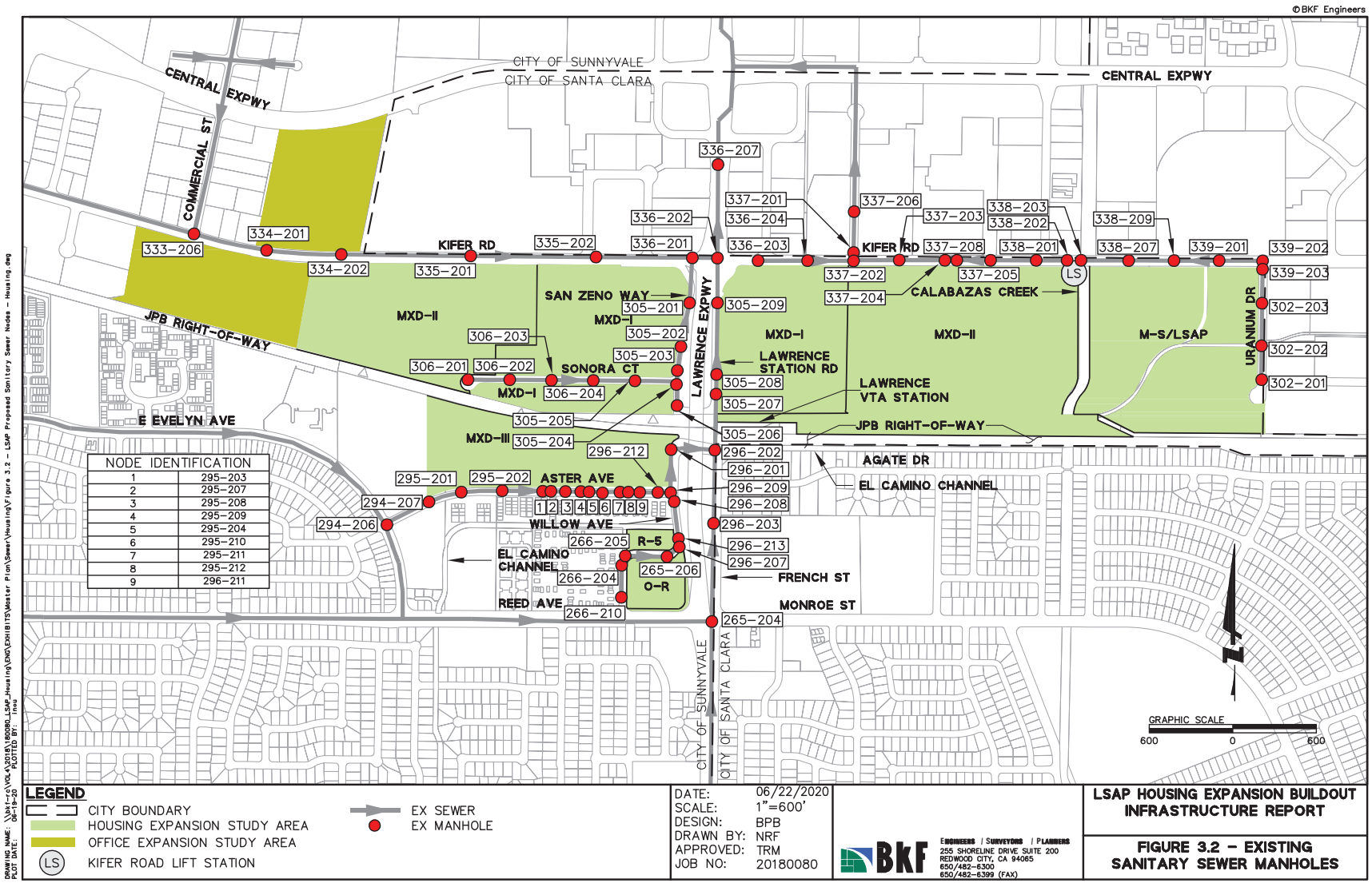
Figure 3.6 – Peak Wet Weather Flow Pipe Velocity illustrates the PWWF pipe velocities for the sanitary sewer system. The sanitary sewer system PWWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The results of the analysis show LSAP PWWF velocities ranging from approximately 0.25 fps to 11.04 fps in the City's existing sewer system. PWWF velocities in the recommended City sewer system range from approximately 1.27 fps to 10.94 fps.

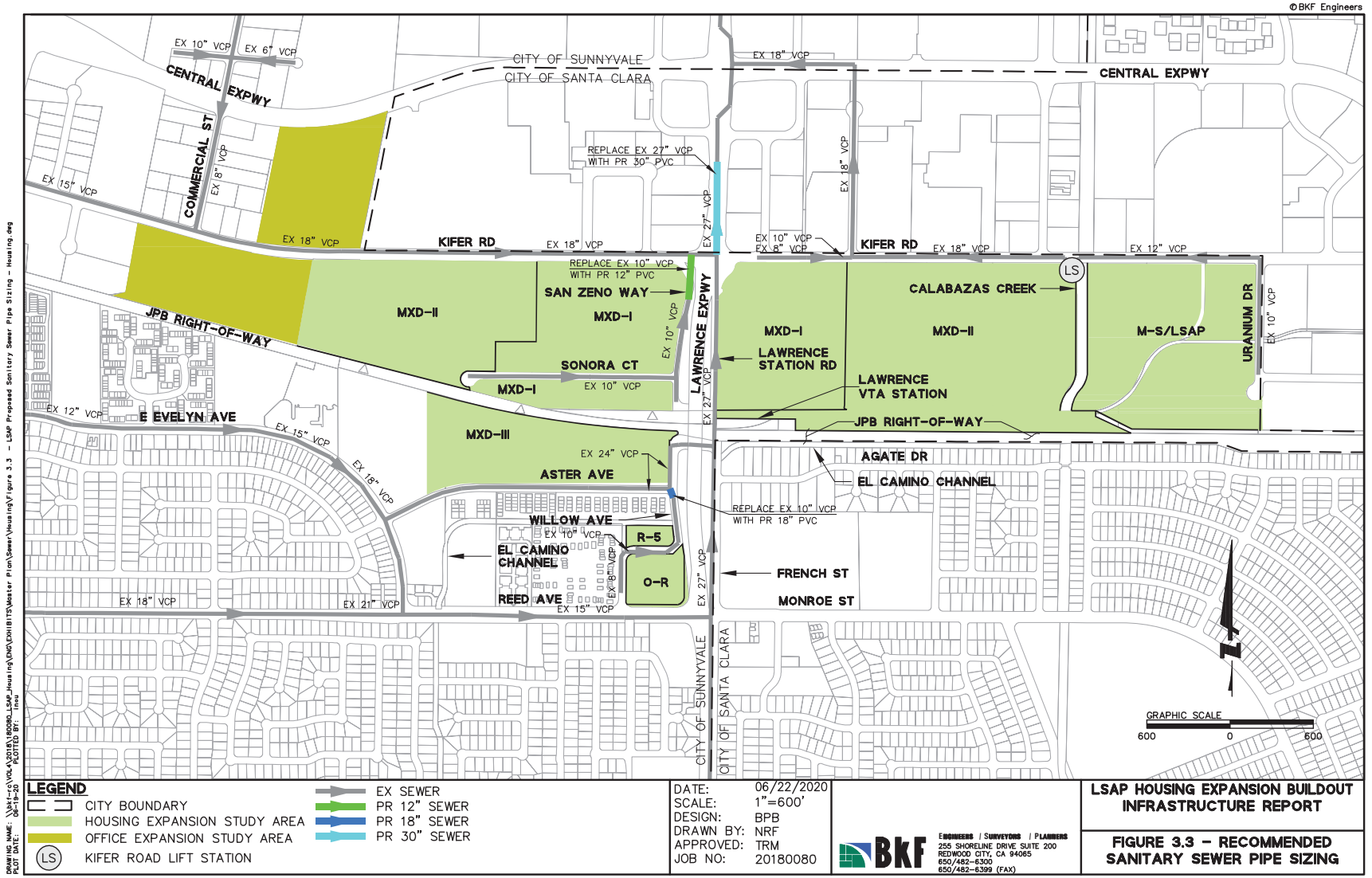
3.9 Sanitary Sewer System Conclusion

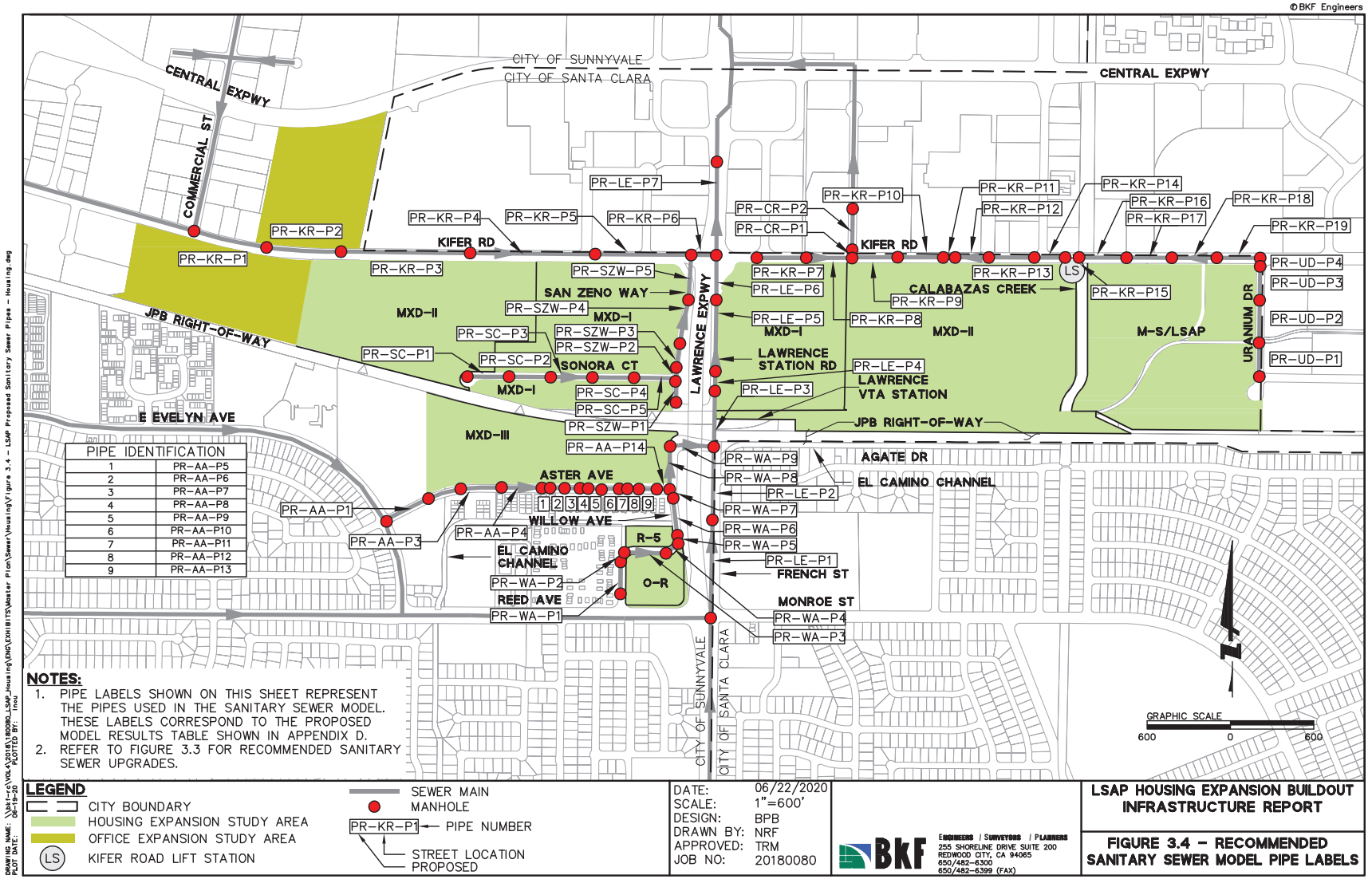
The existing Sanitary Sewer system had three pipes that did not meet design criteria based on the supplemental information provided by the City for maximum pipe flow depth (*d/D*). These pipes were the following:

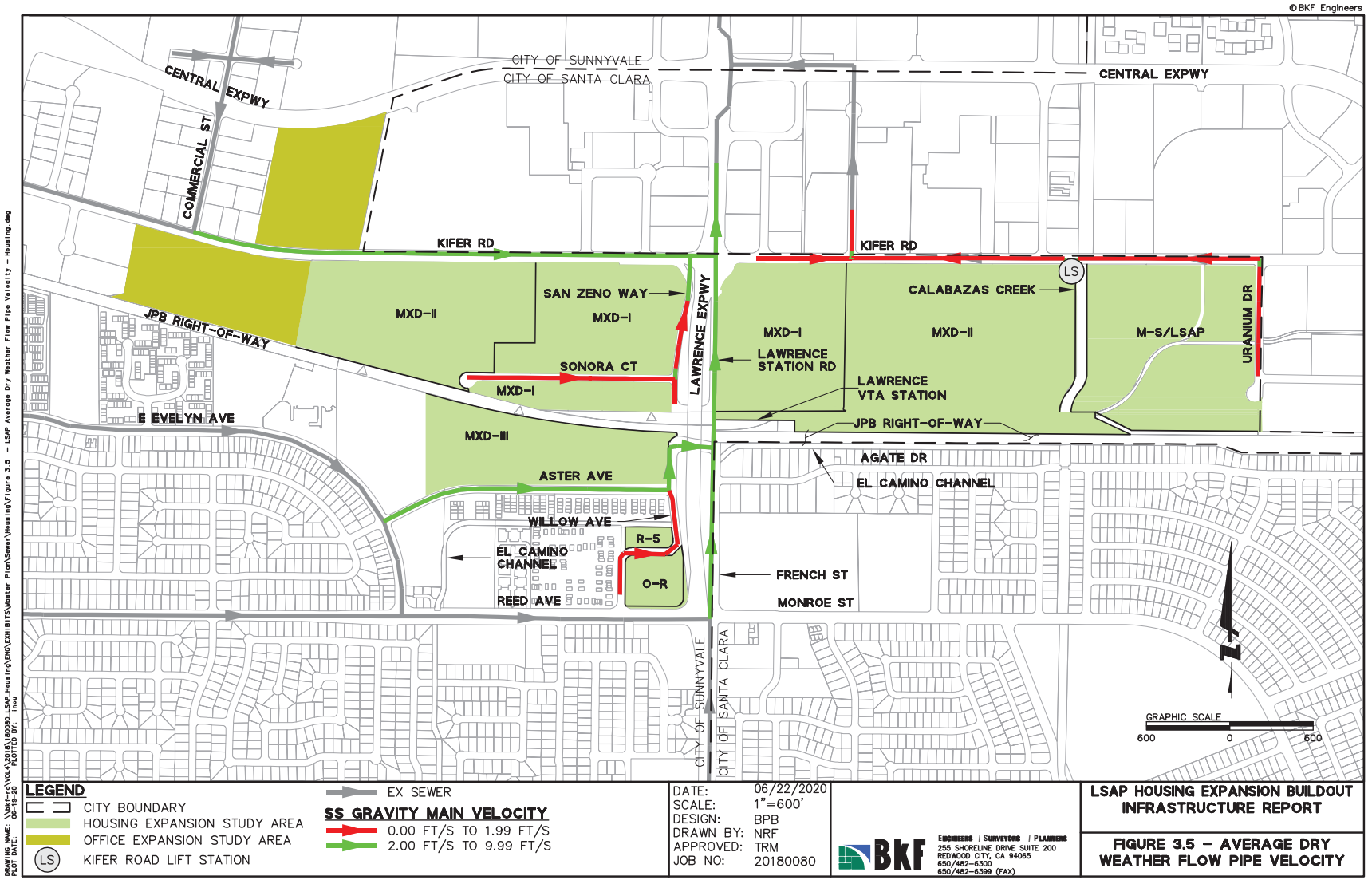
- Existing 10-inch VCP sewer main located in San Zeno Way connecting into Kifer Road between manholes 305-201 and 336-201 has an existing pipe flow depth of 0.53 during PWWF conditions as seen in Appendix D – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 10-inches and smaller is 0.5. BKF recommends upsizing to 12-inch PVC sewer main to provide sufficient capacity.
- Existing 10-inch VCP sewer main located at the intersection of Willow Avenue and Aster Avenue between manholes 296-208 and 296-209 has an existing pipe flow depth of 1.06 during PWWF conditions as seen in Appendix D – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 10-inches and smaller is 0.5. BKF recommends upsizing to a 18-inch PVC sewer main to provide sufficient capacity.
- Existing 27-inch VCP sewer main is in Santa Clara, but the City of Sunnyvale has jurisdiction over the pipe segment. It is located in Lawrence Expressway north of Kifer Road between manholes 336-202 and 336-207. It has an existing pipe flow depth of 0.80 during PWWF conditions as seen in Appendix A – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 12-inches and larger is 0.75. BKF recommends upsizing the existing 27-inch VCP to a 30-inch PVC sewer main to provide sufficient capacity.

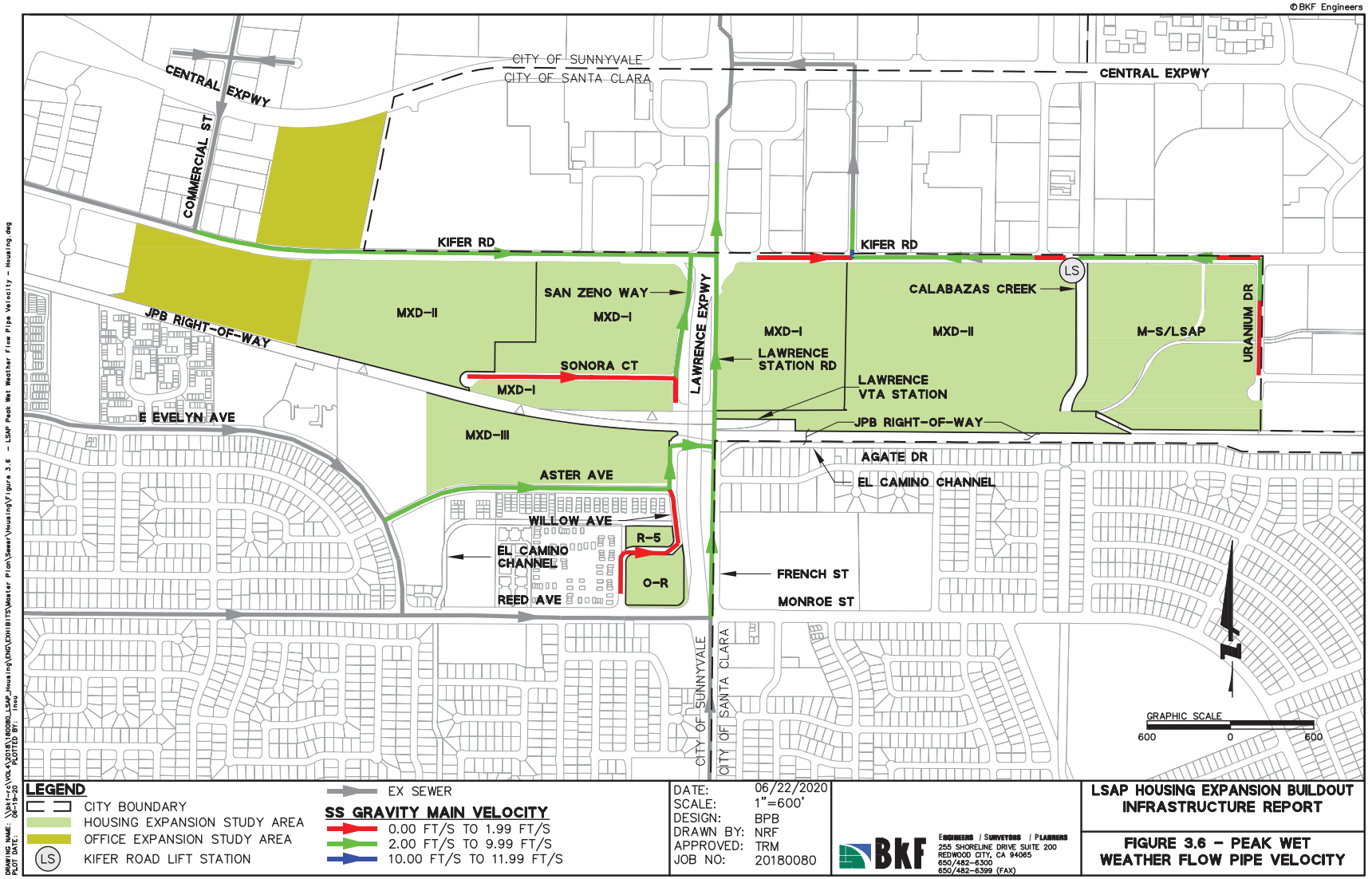

©BKF Engineers
CENTRAL EXPWY
CITY OF SUNNYVALE
CITY OF SANTA CLARA
COMMERCIAL ST
EX 10" VCP
EX 6" VCP
EX 8" VCP
EX 15" VCP
EX 18" VCP
KIFER RD
EX 27" VCP
EX 10" VCP
EX 8" VCP
EX 12" VCP
LS
CALABAZAS CREEK
URANIUM DR
SAN ZENO WAY
JPB RIGHT-OF-WAY
SONORA CT
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
E EVELYN AVE
EX 24" VCP
ASTER AVE
AGATE DR
EL CAMINO CHANNEL
WILLOW AVE
EX 21" VCP
REED AVE
FRENCH ST
MONROE ST
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
EX 6" SEWER
EX 8" SEWER
EX 10" SEWER
EX 12" SEWER
EX 15" SEWER
EX 18" SEWER
EX 21" SEWER
EX 24" SEWER
EX 27" SEWER
KIFER ROAD LIFT STATION
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: EYS
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 3.1 – EXISTING SANITARY SEWER SYSTEM
DRAWING NAME: \\bkf-rc\VOL-A\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.1 – LSAP Existing Sanitary Sewer System – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau


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CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
COMMERCIAL ST
KIFER RD
SAN ZENO WAY
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
SONORA CT
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
E EVELYN AVE
ASTER AVE
WILLOW AVE
EL CAMINO CHANNEL
AGATE DR
FRENCH ST
MONROE ST
REED AVE
MXD-I
MXD-II
MXD-III
R-5
O-R
M-S/LSAP
LS
333-206
334-201
334-202
335-201
335-202
336-201
336-202
336-203
336-204
336-207
337-201
337-202
337-203
337-204
337-205
337-206
337-208
338-201
338-202
338-203
338-207
338-209
339-201
339-202
339-203
302-201
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302-203
305-201
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305-203
305-204
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306-201
306-202
306-203
306-204
294-206
294-207
295-201
295-202
296-201
296-202
296-203
296-204
296-205
296-206
296-207
296-208
296-209
296-210
296-211
296-212
296-213
265-204
265-206
266-204
266-205
266-210
1 2 3 4 5 6 7 8 9
NODE IDENTIFICATION
1 295-203
2 295-207
3 295-208
4 295-209
5 295-204
6 295-210
7 295-211
8 295-212
9 296-211
GRAPHIC SCALE
600 0 600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
KIFER ROAD LIFT STATION
EX SEWER
EX MANHOLE
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
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FIGURE 3.2 – EXISTING SANITARY SEWER MANHOLES
DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.2 – LSAP Proposed Sanitary Sewer Nodes – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou


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CENTRAL EXPWY
CITY OF SUNNYVALE
CITY OF SANTA CLARA
COMMERCIAL ST
KIFER RD
SAN ZENO WAY
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
SONORA CT
E EVELYN AVE
ASTER AVE
WILLOW AVE
REED AVE
EL CAMINO CHANNEL
AGATE DR
FRENCH ST
MONROE ST
MXD-I
MXD-II
MXD-III
M-S/LSAP
R-5
O-R
LS
REPLACE EX 27" VCP WITH PR 30" PVC
REPLACE EX 10" VCP WITH PR 12" PVC
REPLACE EX 10" VCP WITH PR 18" PVC
EX 10" VCP
EX 6" VCP
EX 8" VCP
EX 15" VCP
EX 18" VCP
EX 27" VCP
EX 12" VCP
EX 24" VCP
EX 21" VCP
GRAPHIC SCALE
600 0 600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
KIFER ROAD LIFT STATION
EX SEWER
PR 12" SEWER
PR 18" SEWER
PR 30" SEWER
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
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FIGURE 3.3 – RECOMMENDED SANITARY SEWER PIPE SIZING


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CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
COMMERCIAL ST
KIFER RD
LAWRENCE EXPWY
SAN ZENO WAY
SONORA CT
LAWRENCE STATION RD
LAWRENCE VTA STATION
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
E EVELYN AVE
ASTER AVE
WILLOW AVE
REED AVE
EL CAMINO CHANNEL
AGATE DR
FRENCH ST
MONROE ST
MXD-I
MXD-II
MXD-III
M-S/LSAP
R-5
O-R
LS
PR-KR-P1
PR-KR-P2
PR-KR-P3
PR-KR-P4
PR-KR-P5
PR-KR-P6
PR-KR-P7
PR-KR-P8
PR-KR-P9
PR-KR-P10
PR-KR-P11
PR-KR-P12
PR-KR-P13
PR-KR-P14
PR-KR-P15
PR-KR-P16
PR-KR-P17
PR-KR-P18
PR-KR-P19
PR-LE-P1
PR-LE-P2
PR-LE-P3
PR-LE-P4
PR-LE-P5
PR-LE-P6
PR-LE-P7
PR-CR-P1
PR-CR-P2
PR-SZW-P1
PR-SZW-P2
PR-SZW-P3
PR-SZW-P4
PR-SZW-P5
PR-SC-P1
PR-SC-P2
PR-SC-P3
PR-SC-P4
PR-SC-P5
PR-AA-P1
PR-AA-P3
PR-AA-P4
PR-AA-P14
PR-WA-P1
PR-WA-P2
PR-WA-P3
PR-WA-P4
PR-WA-P5
PR-WA-P6
PR-WA-P7
PR-WA-P8
PR-WA-P9
PR-UD-P1
PR-UD-P2
PR-UD-P3
PR-UD-P4
1 2 3 4 5 6 7 8 9
PIPE IDENTIFICATION
1 PR-AA-P5
2 PR-AA-P6
3 PR-AA-P7
4 PR-AA-P8
5 PR-AA-P9
6 PR-AA-P10
7 PR-AA-P11
8 PR-AA-P12
9 PR-AA-P13
NOTES:
1. PIPE LABELS SHOWN ON THIS SHEET REPRESENT THE PIPES USED IN THE SANITARY SEWER MODEL. THESE LABELS CORRESPOND TO THE PROPOSED MODEL RESULTS TABLE SHOWN IN APPENDIX D.
2. REFER TO FIGURE 3.3 FOR RECOMMENDED SANITARY SEWER UPGRADES.
GRAPHIC SCALE
600 0 600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
KIFER ROAD LIFT STATION
SEWER MAIN
MANHOLE
PR-KR-P1 PIPE NUMBER
STREET LOCATION PROPOSED
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
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REDWOOD CITY, CA 94065
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FIGURE 3.4 – RECOMMENDED SANITARY SEWER MODEL PIPE LABELS
DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.4 - LSAP Proposed Sanitary Sewer Pipes - Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou


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CENTRAL EXPWY
CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
COMMERCIAL ST
KIFER RD
KIFER RD
LS
SAN ZENO WAY
MXD-II
MXD-I
LAWRENCE EXPWY
CALABAZAS CREEK
MXD-I
MXD-II
M-S/LSAP
URANIUM DR
JPB RIGHT-OF-WAY
LAWRENCE STATION RD
SONORA CT
MXD-I
LAWRENCE VTA STATION
E EVELYN AVE
MXD-III
JPB RIGHT-OF-WAY
AGATE DR
EL CAMINO CHANNEL
ASTER AVE
WILLOW AVE
R-5
EL CAMINO CHANNEL
O-R
FRENCH ST
REED AVE
MONROE ST
CITY OF SUNNYVALE
CITY OF SANTA CLARA
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
KIFER ROAD LIFT STATION
EX SEWER
SS GRAVITY MAIN VELOCITY
0.00 FT/S TO 1.99 FT/S
2.00 FT/S TO 9.99 FT/S
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
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255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
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FIGURE 3.5 – AVERAGE DRY WEATHER FLOW PIPE VELOCITY


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CENTRAL EXPWY
COMMERCIAL ST
CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
KIFER RD
KIFER RD
LS
CALABAZAS CREEK
URANIUM DR
SAN ZENO WAY
MXD-II
MXD-I
JPB RIGHT-OF-WAY
LAWRENCE EXPWY
MXD-I
MXD-II
M-S/LSAP
LAWRENCE STATION RD
LAWRENCE VTA STATION
SONORA CT
MXD-I
E EVELYN AVE
MXD-III
JPB RIGHT-OF-WAY
AGATE DR
EL CAMINO CHANNEL
ASTER AVE
WILLOW AVE
R-5
EL CAMINO CHANNEL
O-R
FRENCH ST
MONROE ST
REED AVE
CITY OF SUNNYVALE
CITY OF SANTA CLARA
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
KIFER ROAD LIFT STATION
EX SEWER
SS GRAVITY MAIN VELOCITY
0.00 FT/S TO 1.99 FT/S
2.00 FT/S TO 9.99 FT/S
10.00 FT/S TO 11.99 FT/S
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 3.6 – PEAK WET WEATHER FLOW PIPE VELOCITY
DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.6 – LSAP Peak Wet Weather Flow Pipe Velocity – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

SECTION 4: CONSTRUCTION COSTS

4.1 Sanitary Sewer System Construction Costs

The associated construction costs to complete the recommended pipe upsizing upgrades are based off of the cost estimates prepared by Schaaf & Wheeler for the Downtown Specific Study prepared in September 2019. The anticipated construction cost based on linear footage has been prepared in Table 4.1 – Anticipated Construction Cost. The unit cost provided includes the costs associated with mobilization, demobilization, traffic control, shoring, trenching, manholes, laterals, bypass pumping, offhaul and disposal.

Table 4.1
Anticipated Construction Cost

Pipe Diameter	Recommended Costs ($/LF)[2]
12" PVC pipe	$700
18" PVC pipe	$900
30" PVC pipe[1]	$2000

Note:
1. The 30" PVC pipe recommended unit cost has been adjusted to account increased costs for construction work required on Lawrence Expressway including sewer bypass pumping, expressway traffic control, and pavement thickness.
2. Unit cost values are derived from 2019 Downtown Specific Plan Amendments Utility Impact Study.

Total project construction was estimated by factoring expected additional costs related to construction contingency, design, inspection, miscellaneous costs, and city administration. These additional project costs have been provided in Table 4.2 – Additional Project Costs shown below.

Table 4.2
Additional Project Costs

Project Item	Percentage of Total Cost
Construction Contingency	25%
Design	20%
Inspection	10%
Miscellaneous Costs	10%
City Administration	5%

The sewer analysis model finds that a total of 671 linear feet of 27-inch VCP sewer pipe in Lawrence Expressway must be upsized to a 30-inch PVC sewer pipe, which creates an estimated cost of $1,342,000. With additional costs, the total cost for upsizing sewer pipe in Lawrence Expressway amounts to $2,214,300. The model concludes that a total of 324 linear feet of 10-inch VCP sewer pipe in San Zeno Way must be upsized to a 12-inch PVC sewer pipe, which creates an estimated cost of $226,800. With additional costs, the total cost for upsizing the sewer pipe in San Zeno Way amounts to $374, 220. For Willow Avenue, a total of 69 linear feet of 10-inch VCP sewer pipe must be upsized to 18-inch PVC sewer pipe, which creates an estimated cost of $62,100. With additional costs, the total cost for upsizing the sewer pipe in Willow Avenue amounts to $102,465. The total cost associated with the recommended sewer upgrades for the LSAP Housing Expansion is $2,690,985. A detailed breakdown of the project's cost estimate can be seen in Appendix G – Cost Estimate for City Sanitary Sewer System Upgrades.

SECTION 5: STORM DRAIN SYSTEM

5.1 Existing Storm Drain Layout

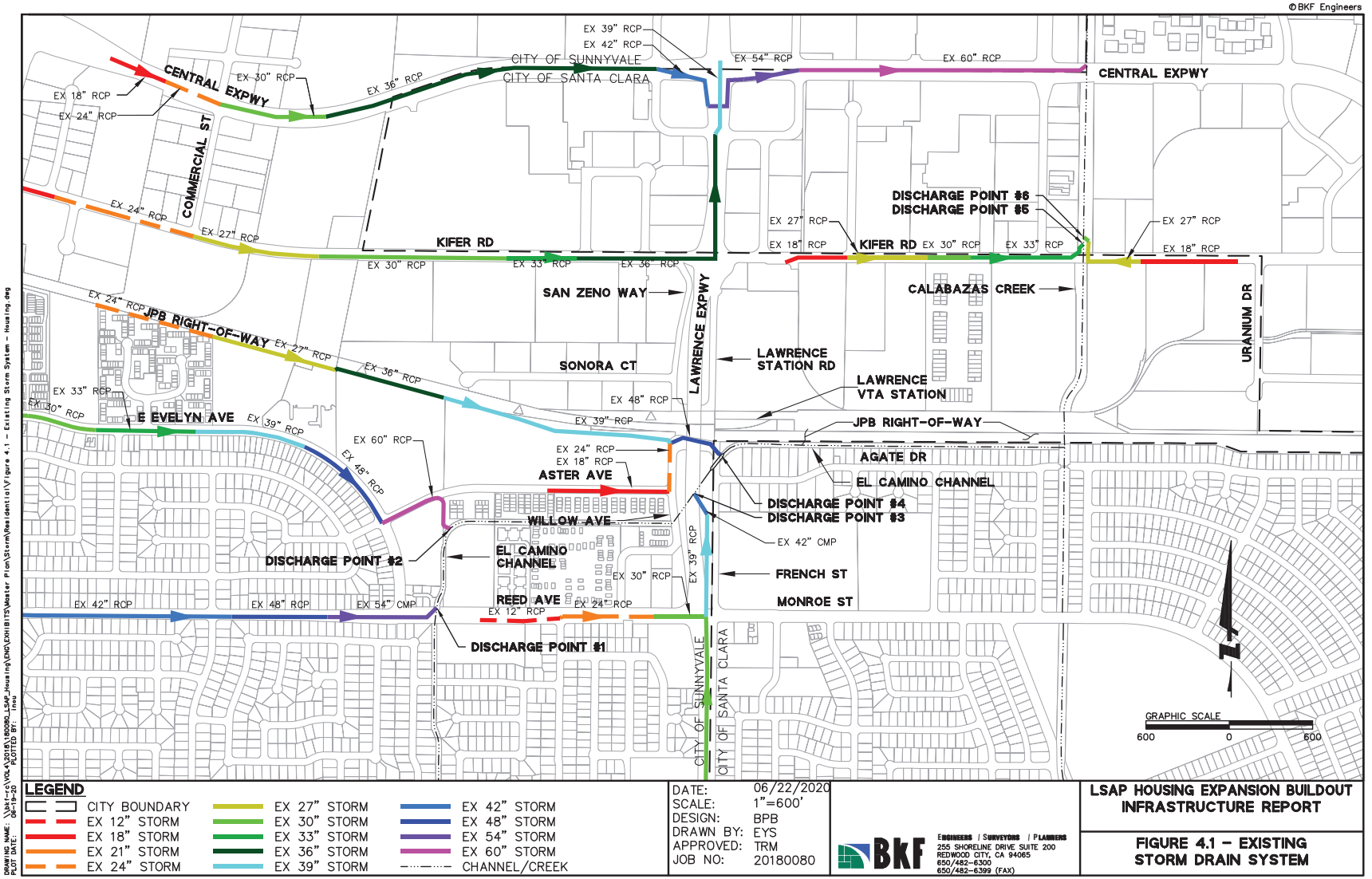
The existing storm drain for LSAP is shown on Figure 4.1 – Existing Storm Drain System. Existing storm drain mains are maintained by the City of Sunnyvale. The LSAP area is currently served by existing storm drain mains that vary in size between 12-inches to 60-inches. Within the vicinity of the LSAP, there are four points where the existing storm drain system discharges into a City flood easement (El Camino Channel) listed below.

- Discharge point #1 located near Reed Avenue and East Evelyn Avenue
- Discharge point #2 located at Aster Avenue east of East Evelyn Avenue
- Discharge point #3 located at French Street south of Agate Drive
- Discharge point #4 located at the intersection of French Street and Willow Avenue.

There are also two points where the existing storm drain system discharges into Calabazas Creek at Kifer Road coming from the West and East (Discharge points #5 and #6 respectively). Discharge points are shown in Figure 4.1 – Existing Storm Drain System.

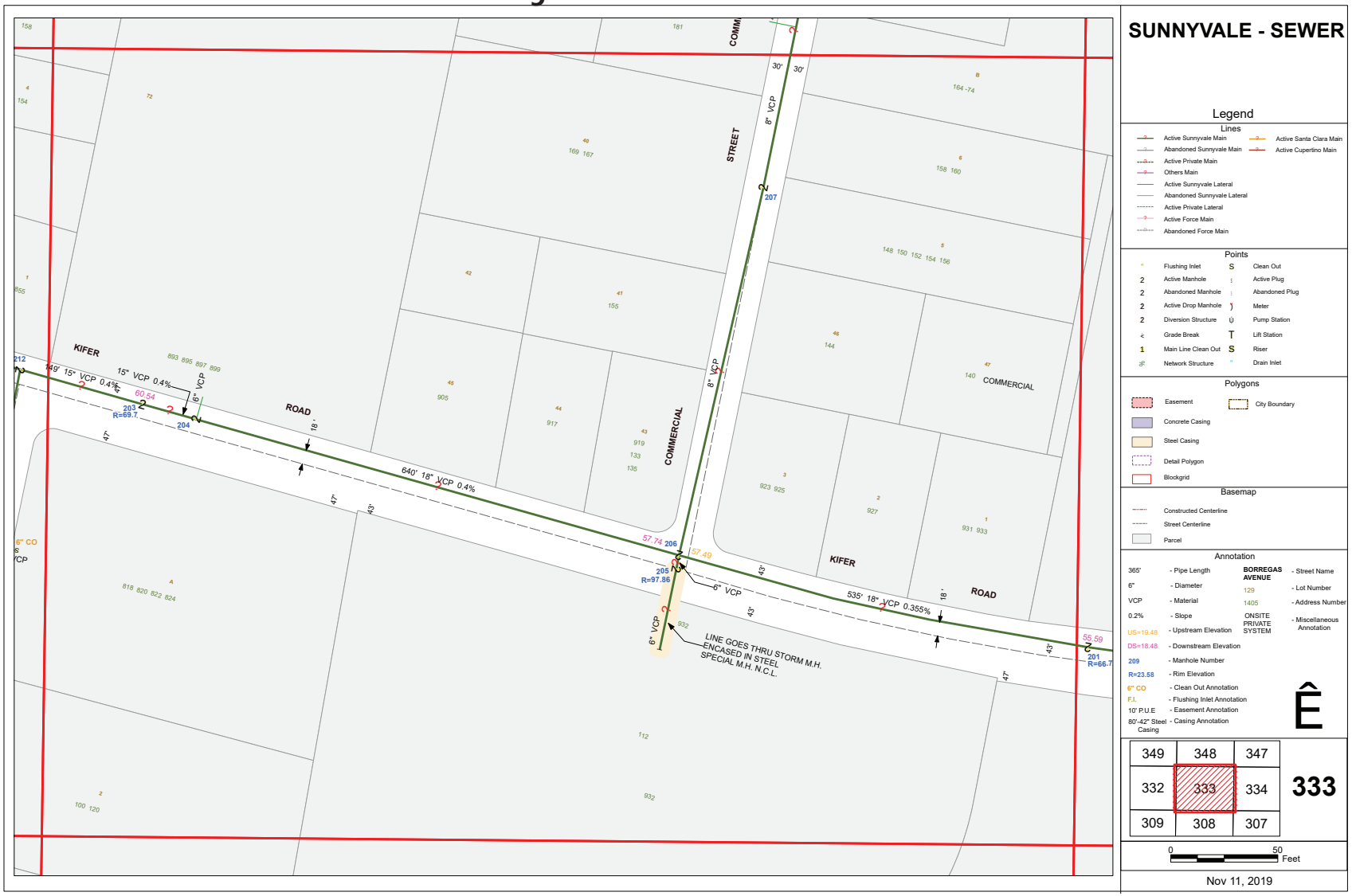
5.2 Storm Drain System Conclusion

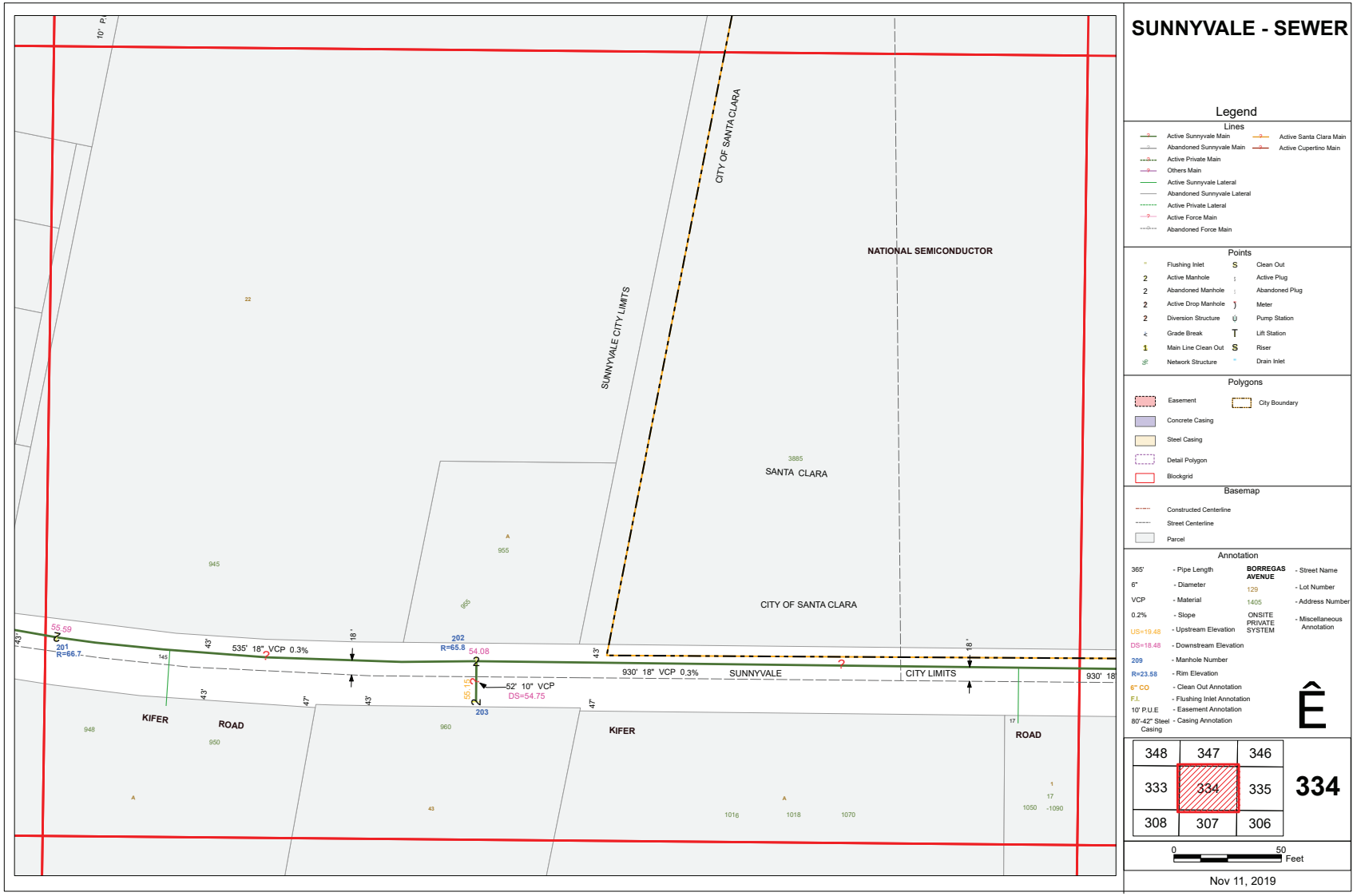
While the project does not have pervious/impervious areas of the existing developments, it is assumed that the pervious areas in the existing development are below 20% pervious. The existing LSAP site, using Google Earth aerial images, show significant impervious surfaces throughout the project area consisting primarily of existing buildings and surface parking for each lot. While the project does not have a pervious/impervious area breakdown for the proposed development, the City of Sunnyvale's Municipal Code requires a minimum of 20% landscaping for each development parcel. It is also assumed that stormwater flows from the proposed developments within the LSAP will be designed to infiltrate within their own development site. Therefore, the proposed Housing Expansion Study Area project assumes no increase in stormwater runoff to the existing storm drain system.

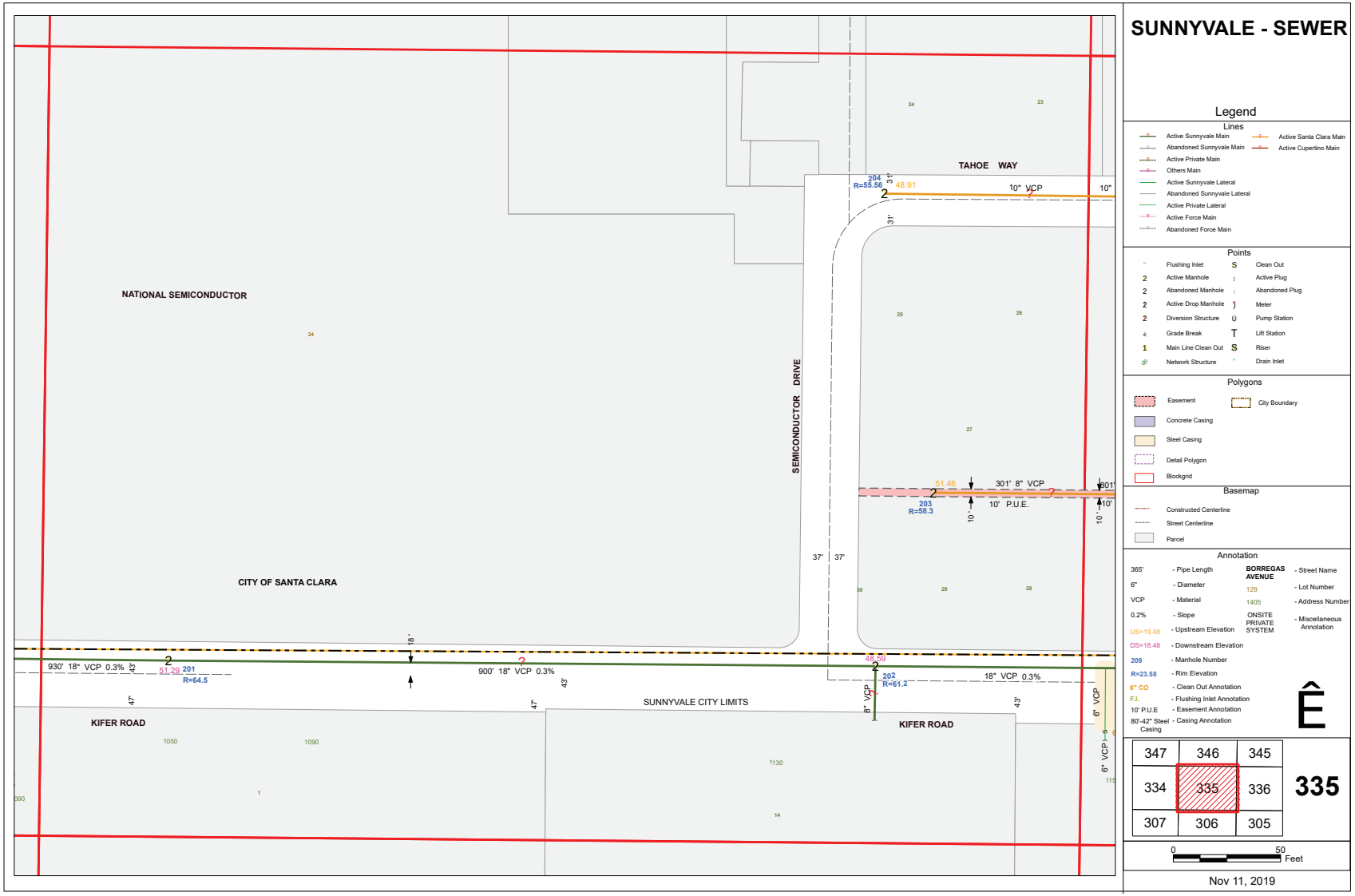

©BKF Engineers
CENTRAL EXPWY
EX 18" RCP
EX 24" RCP
COMMERCIAL ST
EX 30" RCP
EX 36" RCP
CITY OF SUNNYVALE
CITY OF SANTA CLARA
EX 39" RCP
EX 42" RCP
EX 54" RCP
EX 60" RCP
CENTRAL EXPWY
KIFER RD
EX 24" RCP
EX 27" RCP
EX 30" RCP
EX 33" RCP
EX 36" RCP
SAN ZENO WAY
LAWRENCE EXPWY
DISCHARGE POINT #6
DISCHARGE POINT #5
EX 27" RCP
EX 18" RCP
KIFER RD
EX 30" RCP
EX 33" RCP
EX 27" RCP
EX 18" RCP
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
EX 24" RCP
EX 27" RCP
EX 36" RCP
SONORA CT
LAWRENCE STATION RD
LAWRENCE VTA STATION
EX 48" RCP
EX 39" RCP
JPB RIGHT-OF-WAY
EX 33" RCP
EX 30" RCP
E EVELYN AVE
EX 39" RCP
EX 60" RCP
EX 48" RCP
EX 24" RCP
EX 18" RCP
ASTER AVE
AGATE DR
EL CAMINO CHANNEL
DISCHARGE POINT #4
DISCHARGE POINT #3
WILLOW AVE
EX 42" CMP
DISCHARGE POINT #2
EL CAMINO CHANNEL
EX 30" RCP
EX 39" RCP
FRENCH ST
MONROE ST
EX 42" RCP
EX 48" RCP
EX 54" CMP
REED AVE
EX 12" RCP
EX 24" RCP
DISCHARGE POINT #1
CITY OF SUNNYVALE
CITY OF SANTA CLARA
N
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
EX 12" STORM
EX 18" STORM
EX 21" STORM
EX 24" STORM
EX 27" STORM
EX 30" STORM
EX 33" STORM
EX 36" STORM
EX 39" STORM
EX 42" STORM
EX 48" STORM
EX 54" STORM
EX 60" STORM
CHANNEL/CREEK
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: EYS
APPROVED: TRM
JOB NO: 20180080
BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 4.1 – EXISTING STORM DRAIN SYSTEM

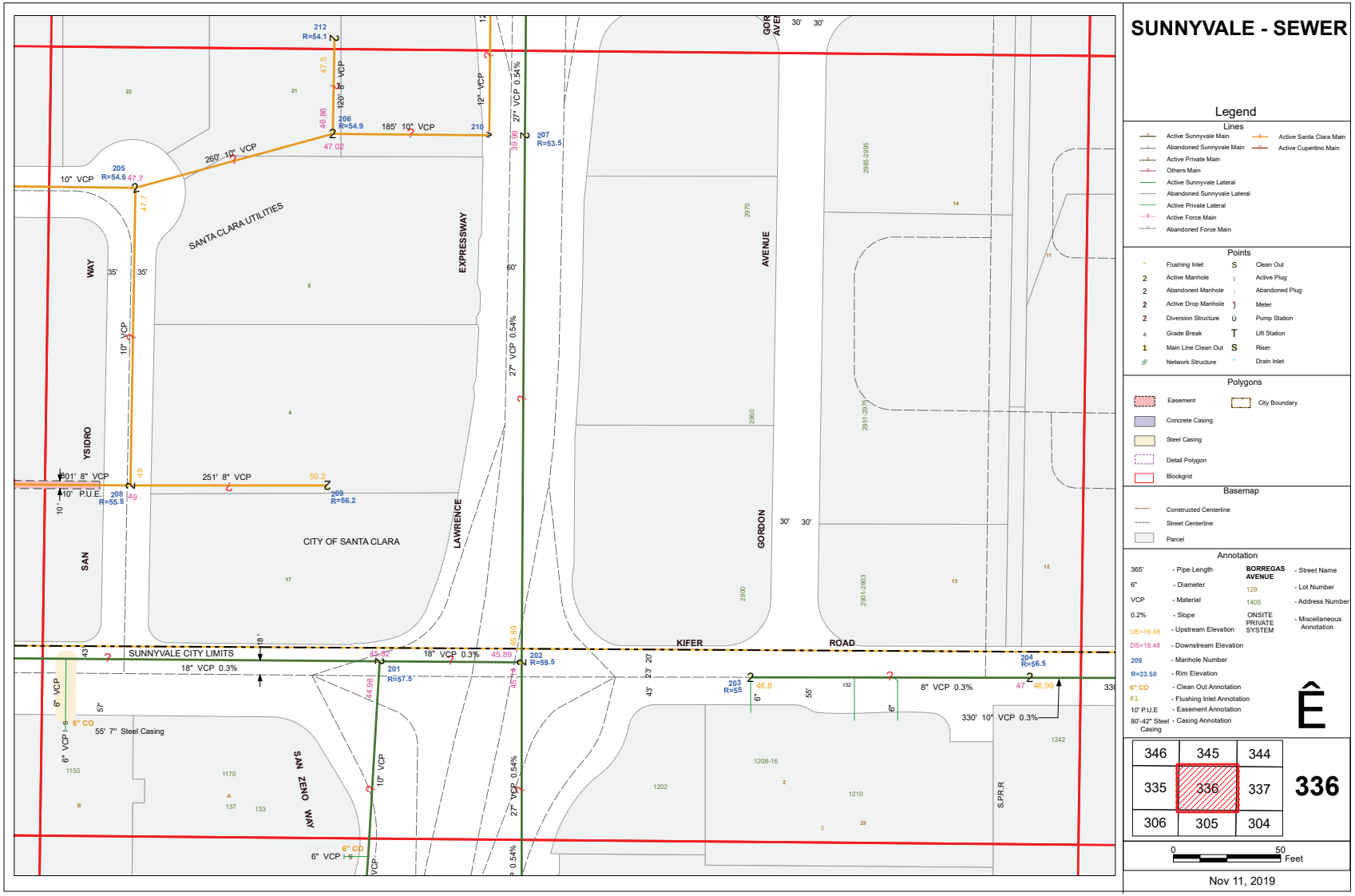
APPENDIX A

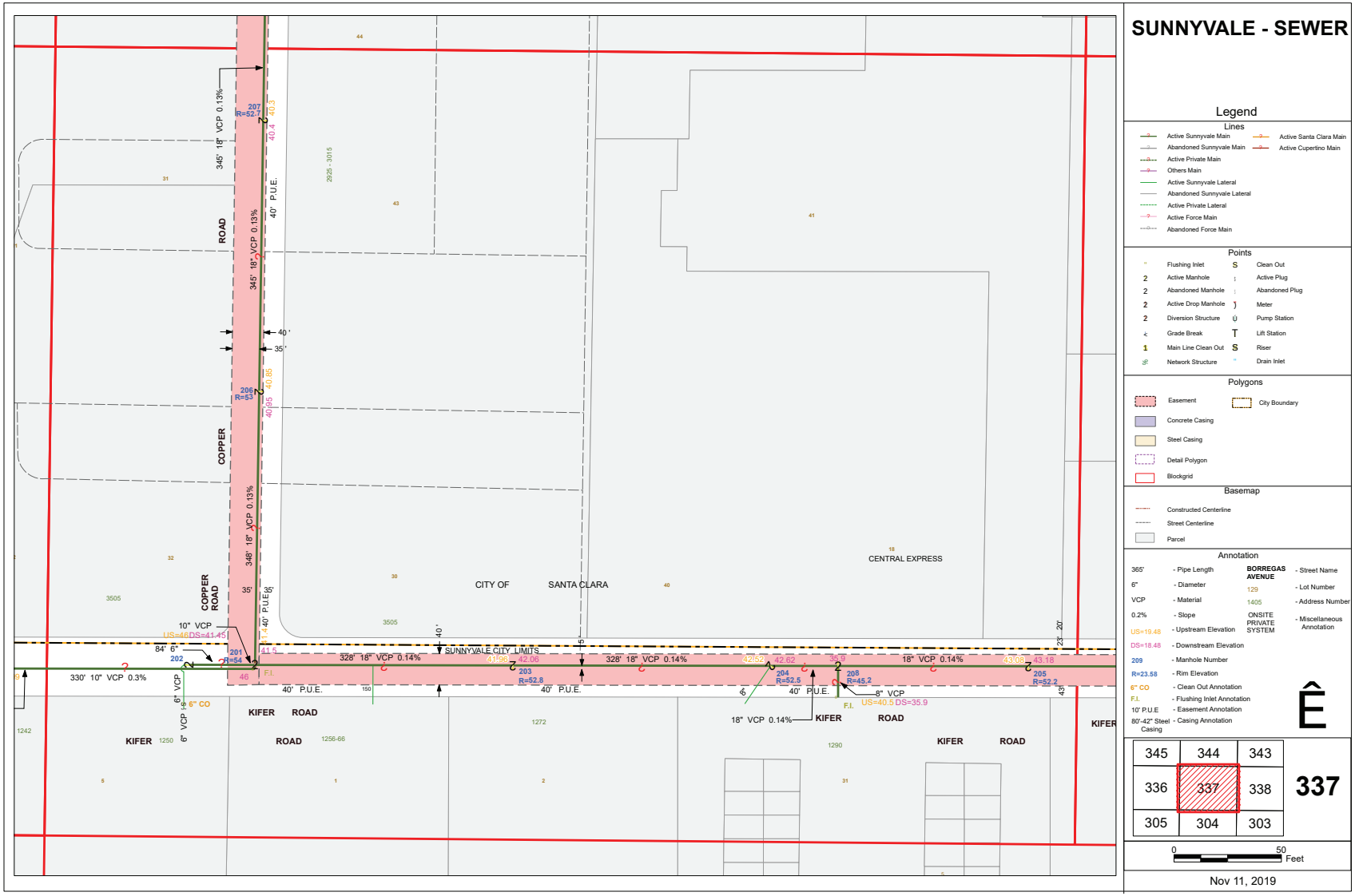
Block Book Pages for Lawrence Station Area Plan



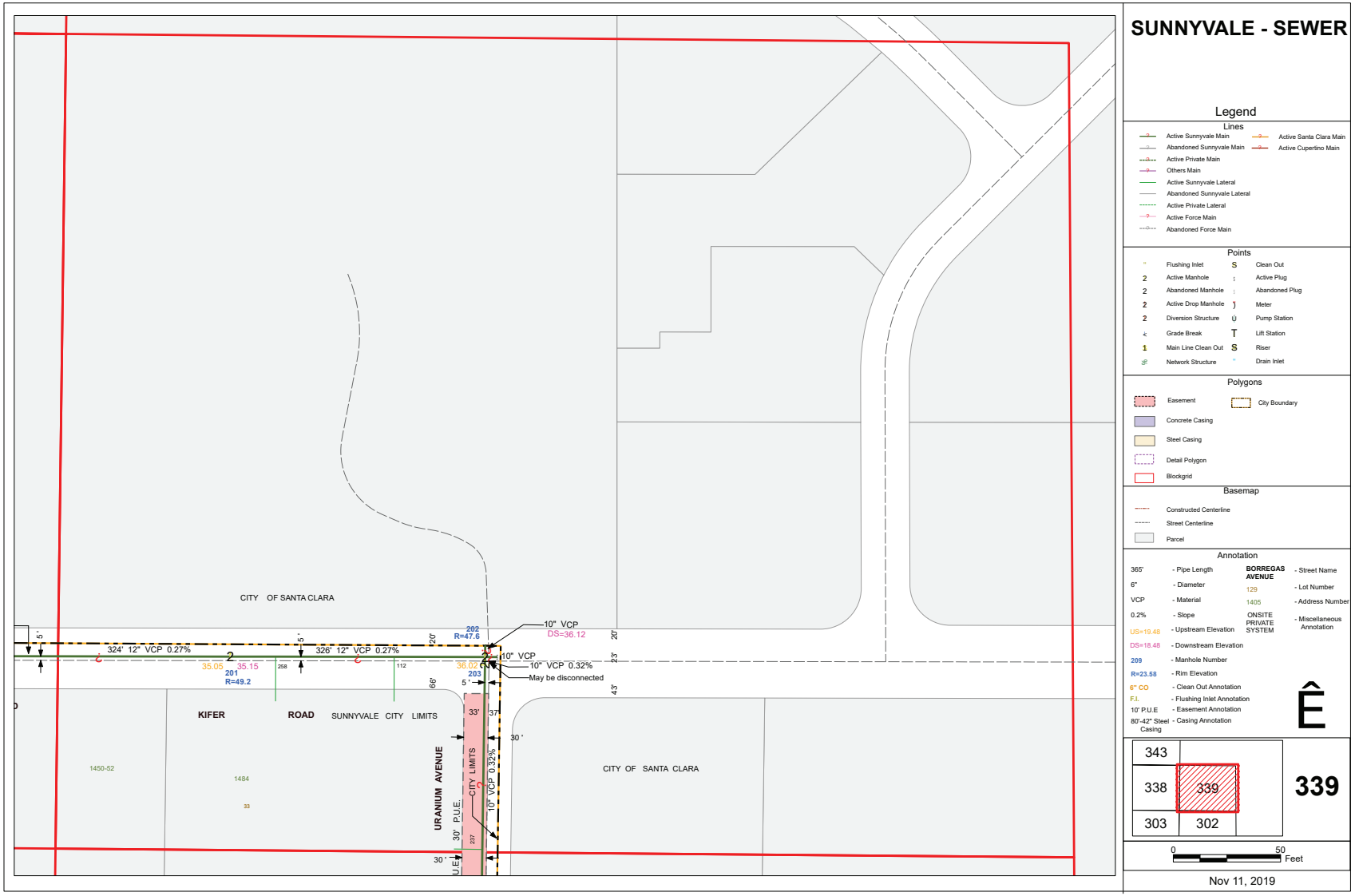

SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
348
347
346
333
334
335
308
307
306
334
0
50
Feet
Nov 11, 2019
NATIONAL SEMICONDUCTOR
SUNNYVALE CITY LIMITS
CITY OF SANTA CLARA
SANTA CLARA
CITY OF SANTA CLARA
535' 18" VCP 0.3%
930' 18" VCP 0.3%
SUNNYVALE
CITY LIMITS
52' 10" VCP
DS=54.75
KIFER
ROAD
KIFER
ROAD

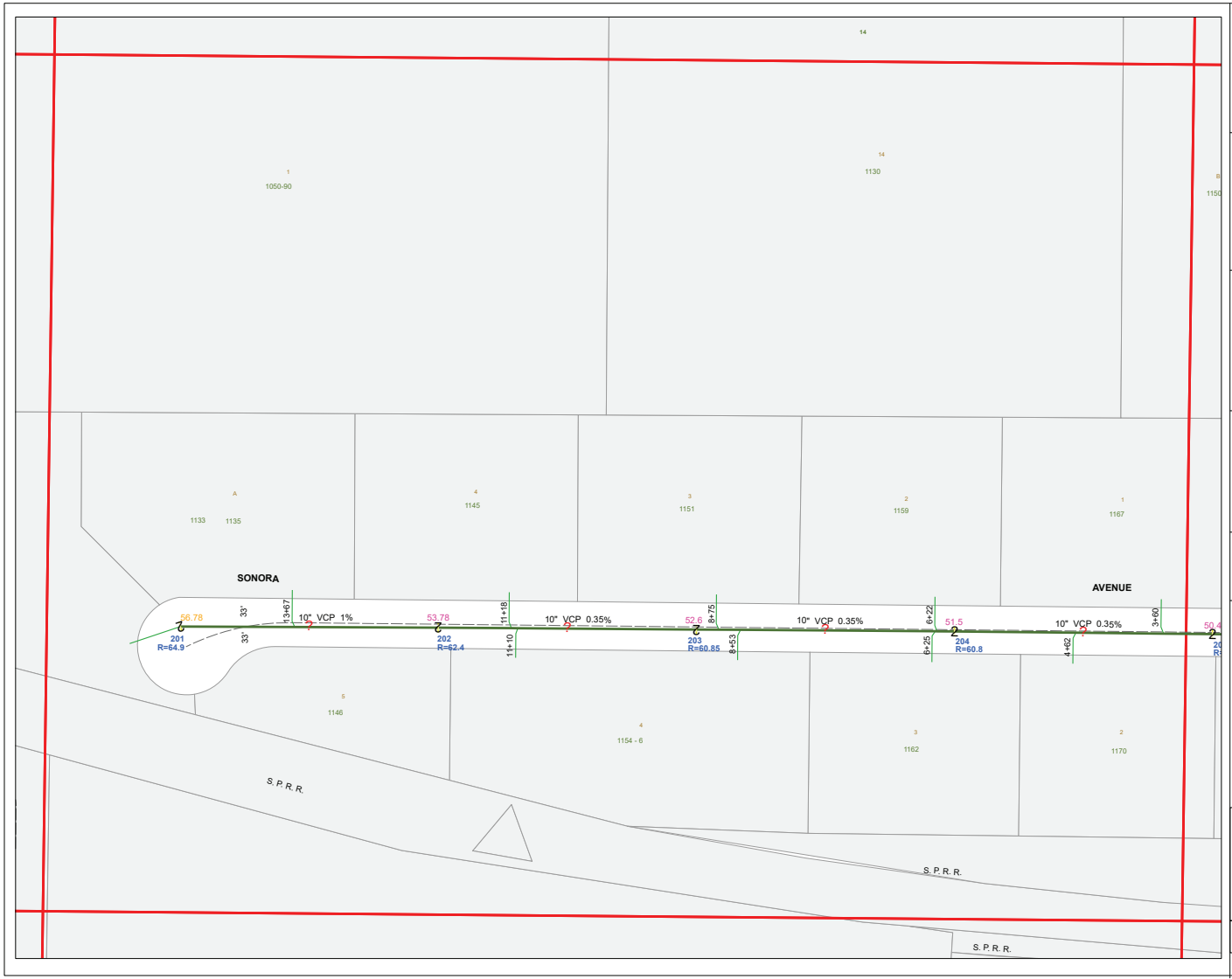

SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
347
346
345
334
335
336
307
306
305
335
0
50
Feet
Nov 11, 2019
NATIONAL SEMICONDUCTOR
CITY OF SANTA CLARA
SEMICONDUCTOR DRIVE
TAHOE WAY
KIFER ROAD
KIFER ROAD
SUNNYVALE CITY LIMITS
930' 18" VCP 0.3%
900' 18" VCP 0.3%
18" VCP 0.3%
301' 8" VCP
10' P.U.E.
10" VCP
6" VCP
8" VCP
204 R=55.56
201 R=64.5
202 R=61.2
203 R=58.3
48.91
51.29
48.59
51.46


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
346
345
344
335
336
337
306
305
304
336
0
50
Feet
Nov 11, 2019
SANTA CLARA UTILITIES
EXPRESSWAY
CITY OF SANTA CLARA
SUNNYVALE CITY LIMITS
KIFER
ROAD
GORDON
AVENUE
LAWRENCE
YSIDRO
WAY
SAN
SAN ZENO WAY
S.P.R.R
212 R=54.1
206 R=54.9
205 R=54.6
207 R=53.5
208 R=55.8
209 R=56.2
201 R=57.5
202 R=59.5
203 R=55
204 R=56.5
210
185' 10" VCP
260' 10" VCP
10" VCP
201' 8" VCP
251' 8" VCP
10' P.U.E.
18" VCP 0.3%
27" VCP 0.54%
8" VCP 0.3%
330' 10" VCP 0.3%
6" VCP
12" VCP
120' 8" VCP
55' 7" Steel Casing
6" CO


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
345 344 343
336 337 338
305 304 303
337
0 50 Feet
Nov 11, 2019
ROAD
COPPER
COPPER ROAD
CITY OF SANTA CLARA
CENTRAL EXPRESS
SUNNYVALE CITY LIMITS
KIFER ROAD
345' 18" VCP 0.13%
345' 18" VCP 0.13%
348' 18" VCP 0.13%
330' 10" VCP 0.3%
328' 18" VCP 0.14%
328' 18" VCP 0.14%
18" VCP 0.14%
18" VCP 0.14%
10" VCP
8" VCP
6" VCP
40' P.U.E.
35'
40'
207 R=52.7
206 R=53
201 R=54
202
203 R=52.8
204 R=52.5
205 R=52.2
208 R=45.2
209


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
344
343
337
338
339
304
303
302
338
0
50
Feet
Nov 11, 2019
S.C.C. FLOOD CONTROL
S.P.R.R.
CITY OF SANTA CLARA
SEE DETAIL A IN NEXT PAGE
KIFER ROAD
328' 18" VCP 0.14%
266' 18" VCP 0.14%
387' 12" VCP 0.27%
324' 12" VCP 0.27%
6" VCP
40' P.U.E.
SUNNYVALE CITY LIMITS
CALABAZAS CREEK


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
343
338
339
303
302
339
0
50
Feet
Nov 11, 2019
CITY OF SANTA CLARA
324' 12" VCP 0.27%
326' 12" VCP 0.27%
202
R=47.6
201
R=49.2
203
10" VCP
DS=36.12
10" VCP
10" VCP 0.32%
May be disconnected
KIFER
ROAD
SUNNYVALE CITY LIMITS
URANIUM AVENUE
30' P.U.E.
CITY LIMITS
10" VCP 0.32%
CITY OF SANTA CLARA
1450-52
1484
66'
33'
37'
30'
20'
23'
43'



SUNNYVALE - SEWER

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid
- City Boundary

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

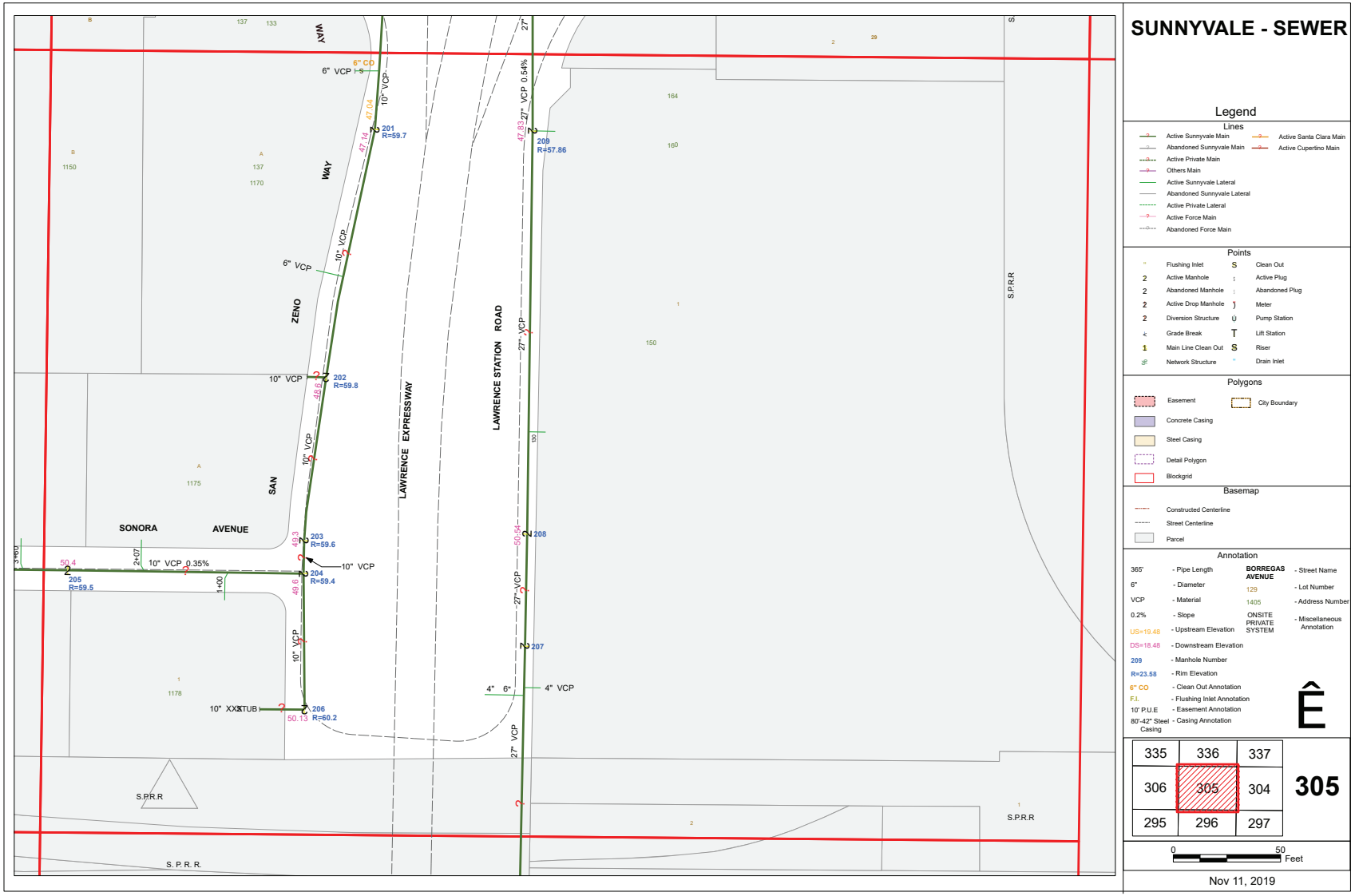
365'	- Pipe Length
6"	- Diameter
VCP	- Material
0.2%	- Slope
US=19.48	- Upstream Elevation
DS=18.48	- Downstream Elevation
209	- Manhole Number
R=23.58	- Rim Elevation
6" CO	- Clean Out Annotation
F.I.	- Flushing Inlet Annotation
10' P.U.E	- Easement Annotation
80'-42" Steel Casing	- Casing Annotation
BORREGAS AVENUE	- Street Name
129	- Lot Number
1405	- Address Number
ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation

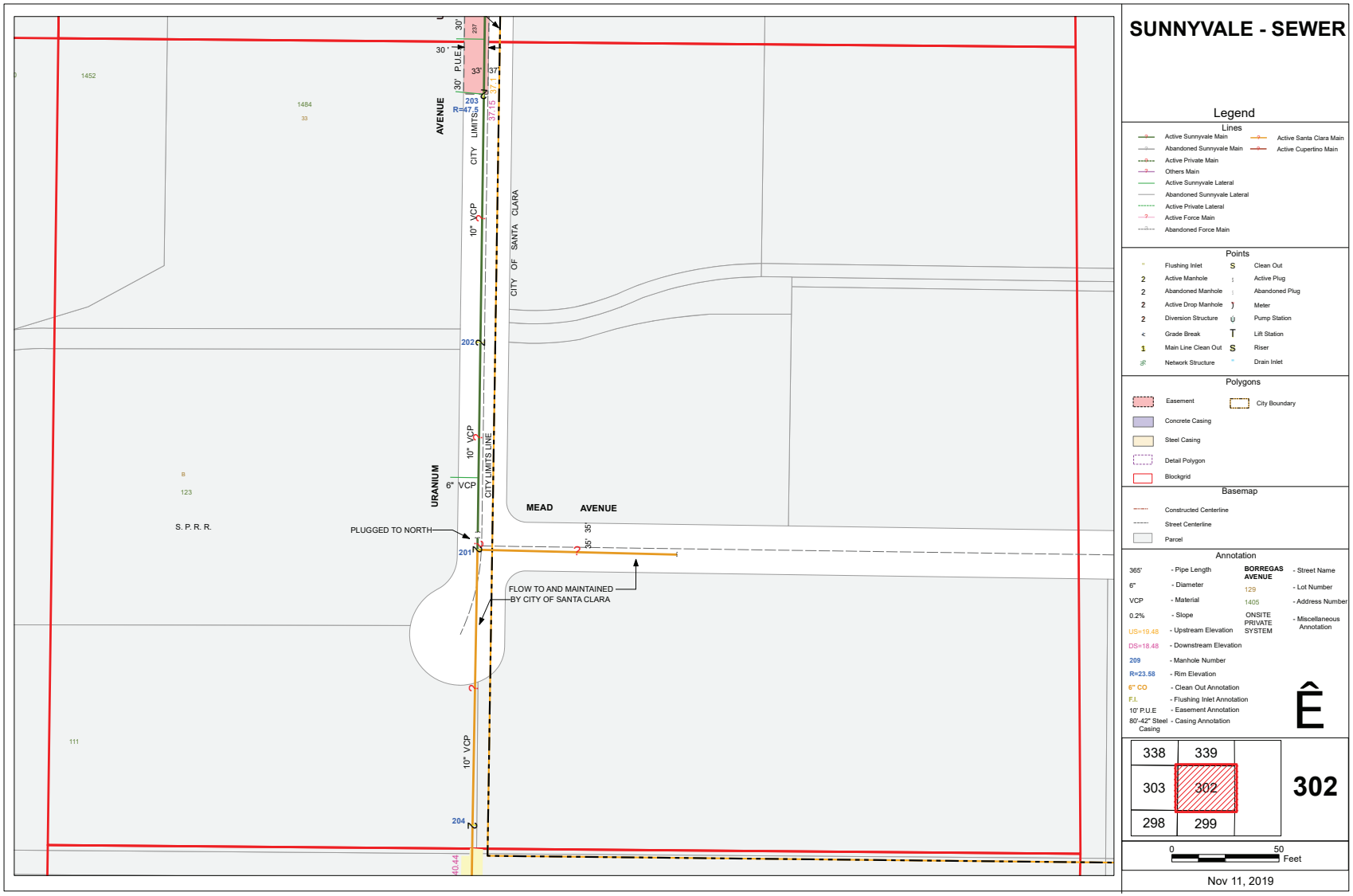
334	335	336
307	306	305
294	295	296

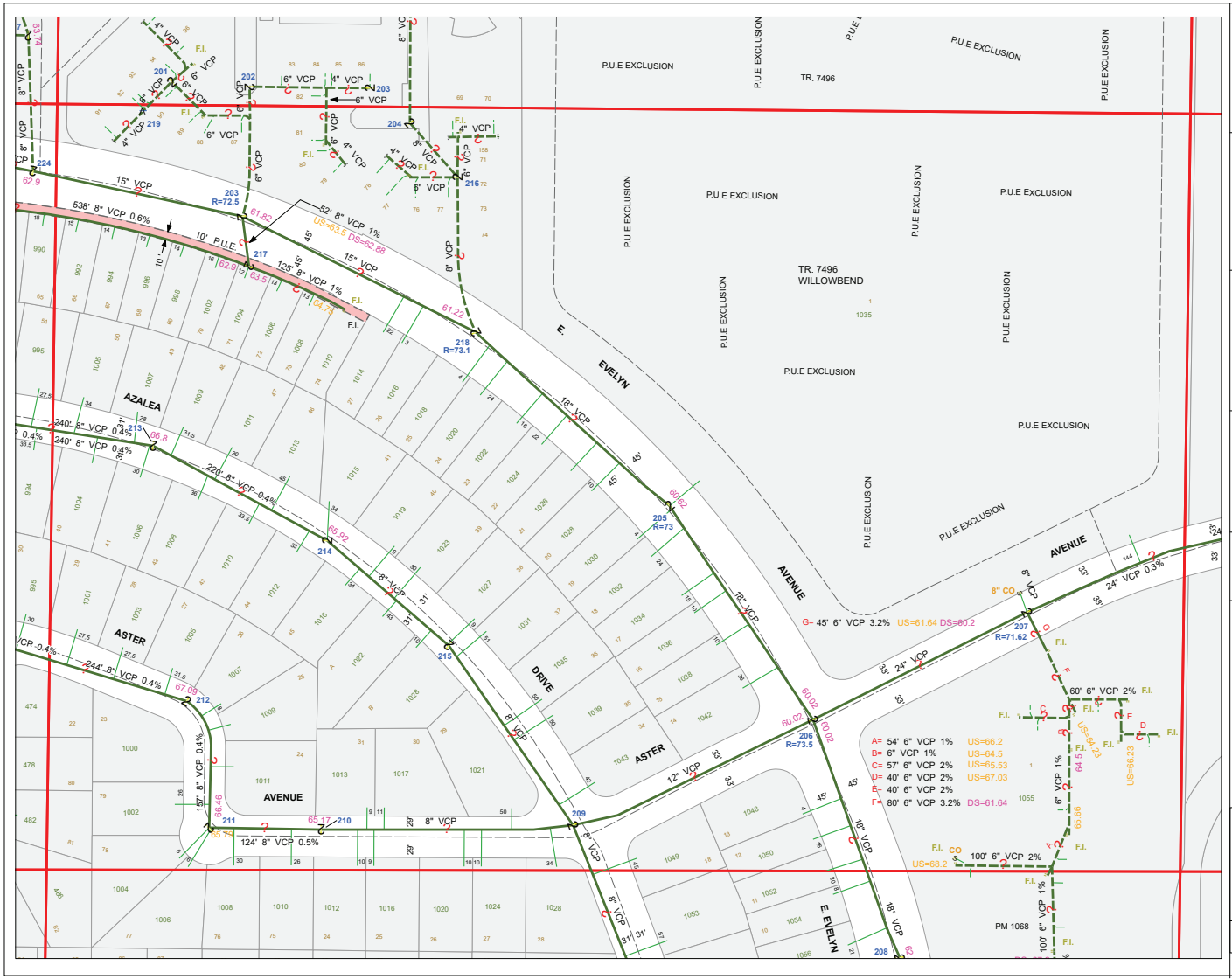
306

0 50 Feet

Nov 11, 2019


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
335
336
337
306
305
304
295
296
297
305
0
50
Feet
Nov 11, 2019
WAY
ZENO
SAN
SONORA
AVENUE
LAWRENCE EXPRESSWAY
LAWRENCE STATION ROAD
S.P.R.R
S. P. R. R.
6" CO
6" VCP
10" VCP
27" VCP 0.54%
27" VCP
6" VCP
10" VCP 0.35%
10" XXSTUB
4" VCP
201 R=59.7
202 R=59.8
203 R=59.6
204 R=59.4
205 R=59.5
206 R=60.2
207
208
209 R=57.86


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
338
339
303
302
298
299
302
0
50
Feet
Nov 11, 2019
AVENUE
CITY LIMITS
CITY OF SANTA CLARA
URANIUM
CITY LIMITS LINE
MEAD AVENUE
S. P. R. R.
PLUGGED TO NORTH
FLOW TO AND MAINTAINED BY CITY OF SANTA CLARA
10" VCP
6" VCP
30' P.U.E
202
203
201
204



SUNNYVALE - SEWER

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

	Flushing Inlet	S	Clean Out
2	Active Manhole		Active Plug
2	Abandoned Manhole		Abandoned Plug
2	Active Drop Manhole		Meter
2	Diversion Structure		Pump Station
	Grade Break	T	Lift Station
1	Main Line Clean Out	S	Riser
	Network Structure		Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

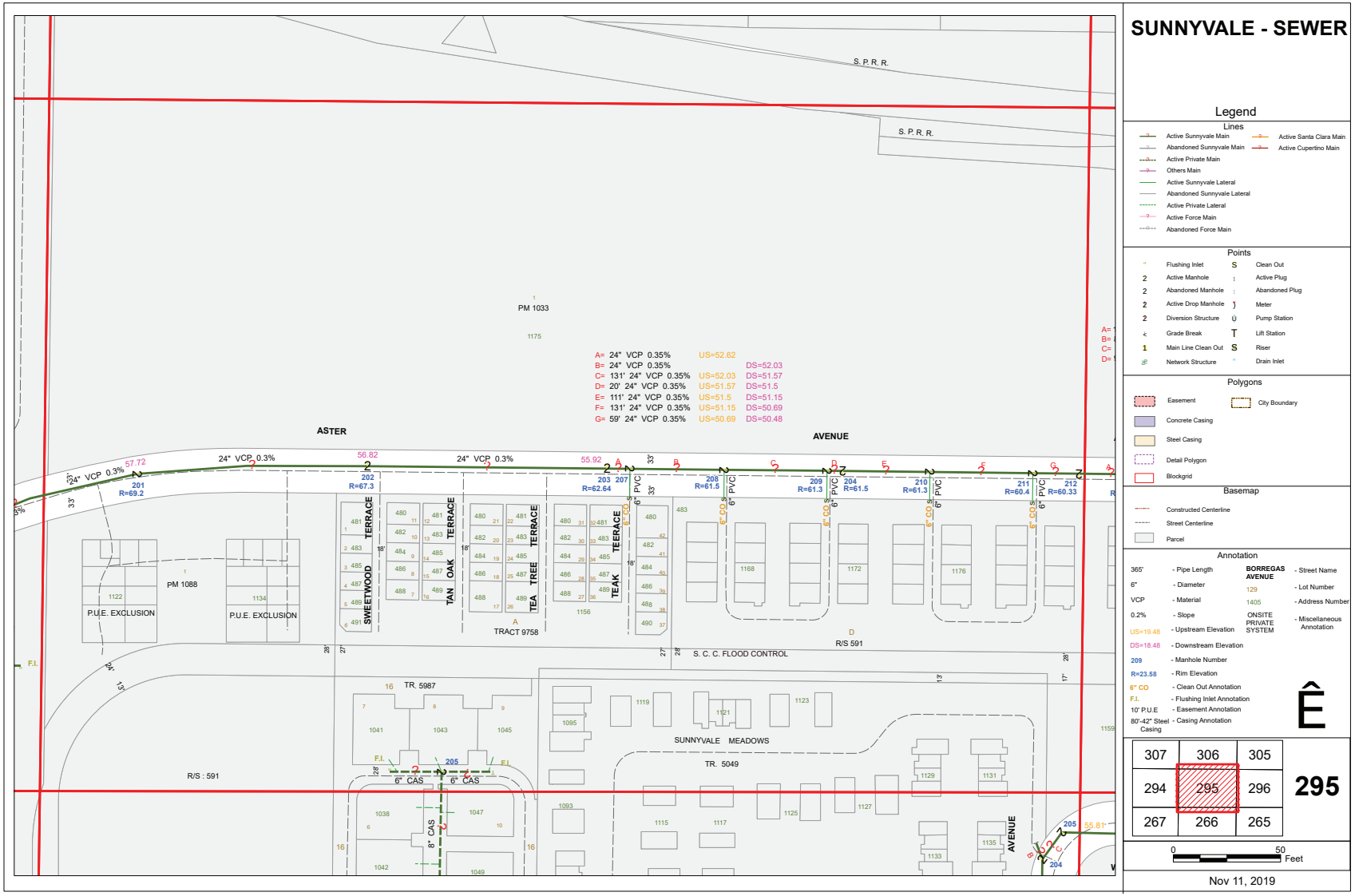
365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

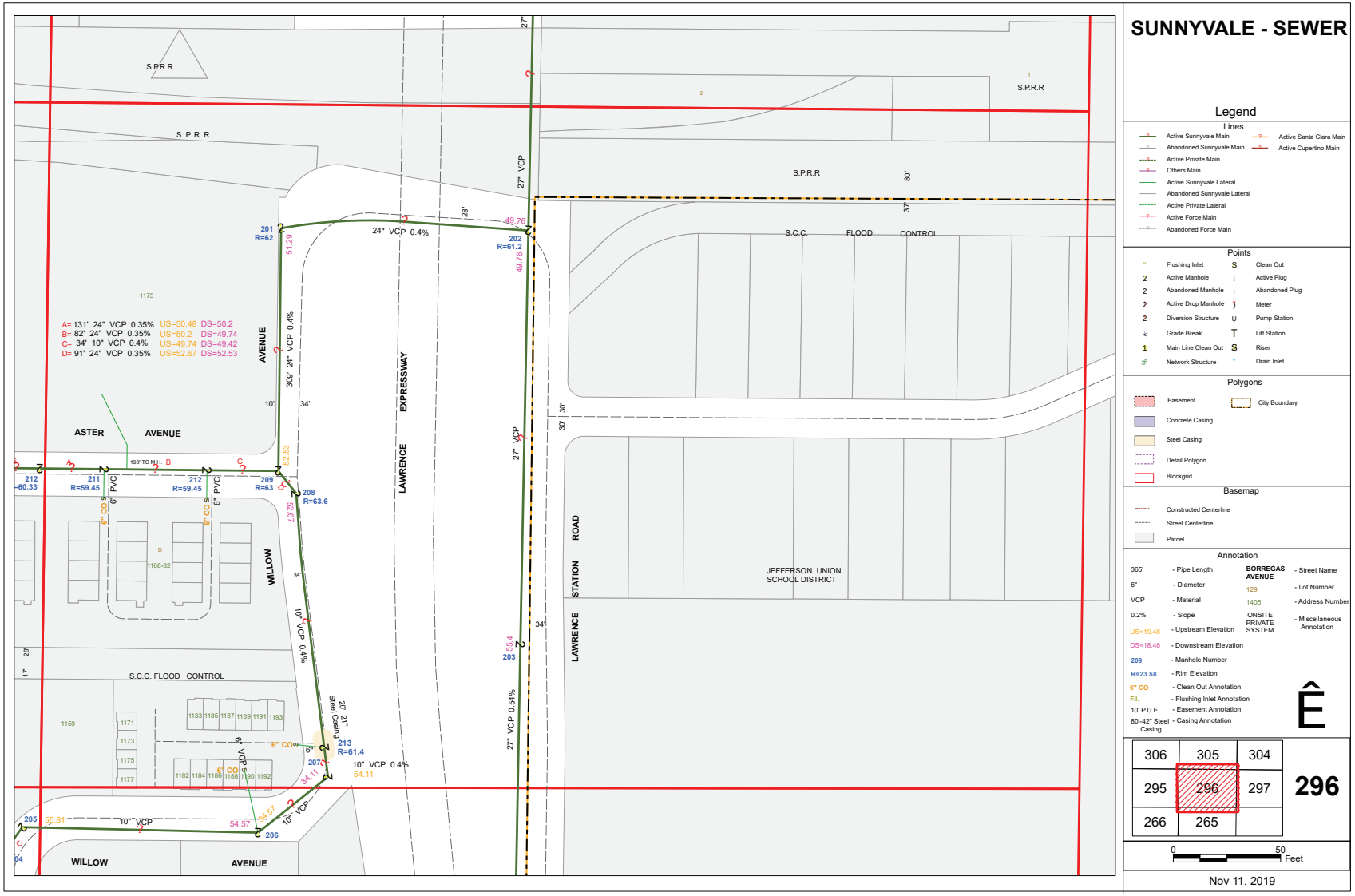
308	307	306
293	294	295
268	267	266

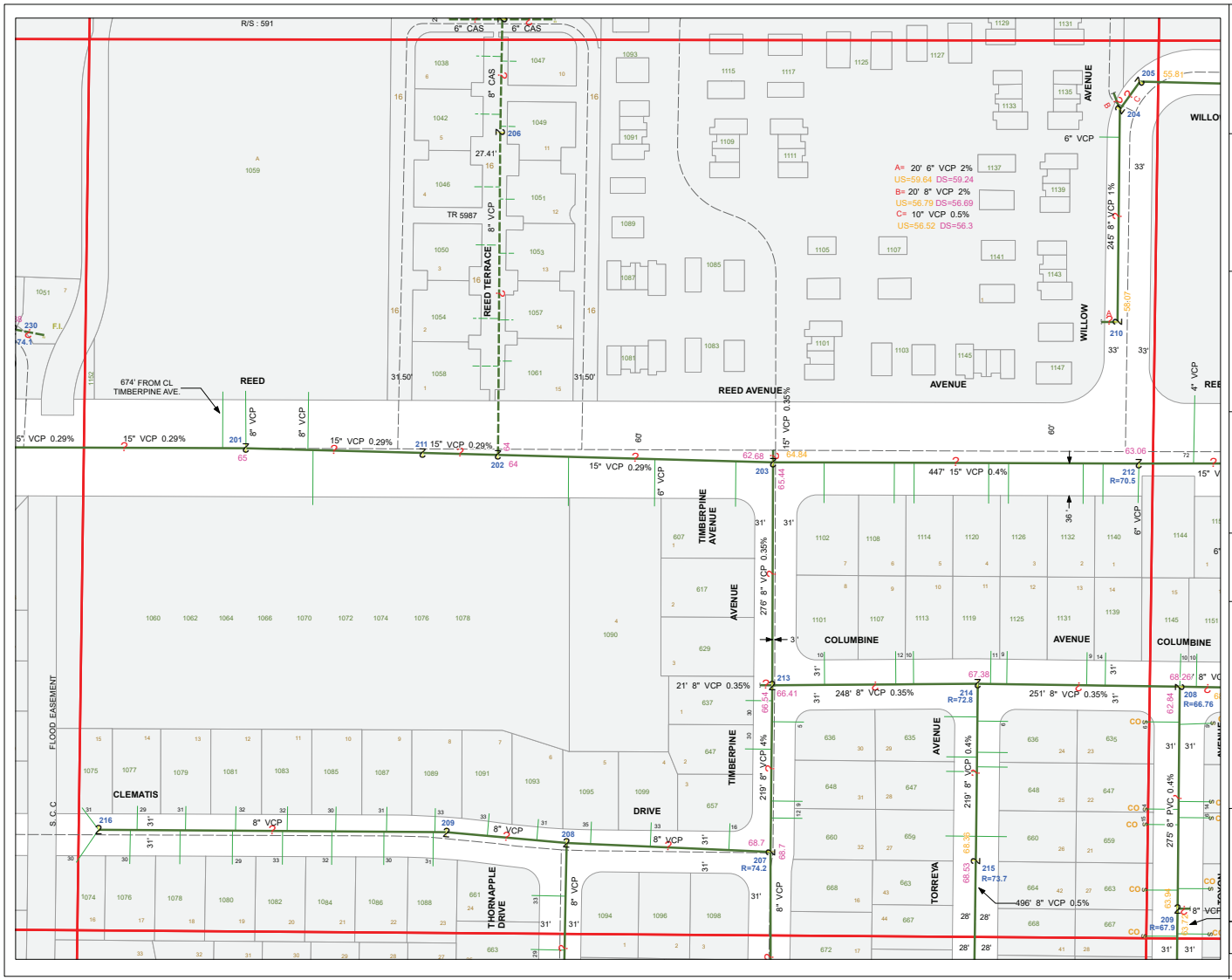
294

0 50 Feet

Nov 11, 2019


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
A= 24" VCP 0.35% US=52.62
B= 24" VCP 0.35% DS=52.03
C= 131' 24" VCP 0.35% US=52.03 DS=51.57
D= 20' 24" VCP 0.35% US=51.57 DS=51.5
E= 111' 24" VCP 0.35% US=51.5 DS=51.15
F= 131' 24" VCP 0.35% US=51.15 DS=50.69
G= 59' 24" VCP 0.35% US=50.69 DS=50.48
ASTER AVENUE
S. P. R. R.
PM 1033
PM 1088
TRACT 9758
TR. 5987
TR. 5049
SUNNYVALE MEADOWS
S. C. C. FLOOD CONTROL
R/S 591
R/S : 591
P.U.E. EXCLUSION
SWEETWOOD
TAN OAK
TEA TREE
TEAK
TERRACE
307 306 305
294 295 296
267 266 265
295
0 50 Feet
Nov 11, 2019


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
306
305
304
295
296
297
266
265
296
0
50
Feet
Nov 11, 2019
S.P.R.R
S. P. R. R.
S.P.R.R
S.P.R.R
S.C.C. FLOOD CONTROL
S.C.C. FLOOD CONTROL
JEFFERSON UNION SCHOOL DISTRICT
ASTER AVENUE
WILLOW AVENUE
LAWRENCE EXPRESSWAY
LAWRENCE STATION ROAD
27" VCP
24" VCP 0.4%
309' 24" VCP 0.4%
10" VCP 0.4%
10" VCP
27" VCP 0.54%
A= 131' 24" VCP 0.35% US=50.48 DS=50.2
B= 82' 24" VCP 0.35% US=50.2 DS=49.74
C= 34' 10" VCP 0.4% US=49.74 DS=49.42
D= 91' 24" VCP 0.35% US=52.67 DS=52.53
193' TO M.H. B
201 R=62
202 R=61.2
203
204
205
206
207
208 R=63.6
209 R=63
211 R=59.45
212 R=59.45
212 =60.33
213 R=61.4
20" 21" Steel Casing
6" PVC
6" CO
10' P.U.E
80'
37'
28'
30'
34'
17'
10'



SUNNYVALE - SEWER

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

"	Flushing Inlet	S	Clean Out
2	Active Manhole	;	Active Plug
2	Abandoned Manhole	;	Abandoned Plug
2	Active Drop Manhole	)	Meter
2	Diversion Structure	ψ	Pump Station
<	Grade Break	T	Lift Station
1	Main Line Clean Out	S	Riser
⁰⁄₀	Network Structure	"	Drain Inlet

Polygons

- Easement
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid
- City Boundary

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

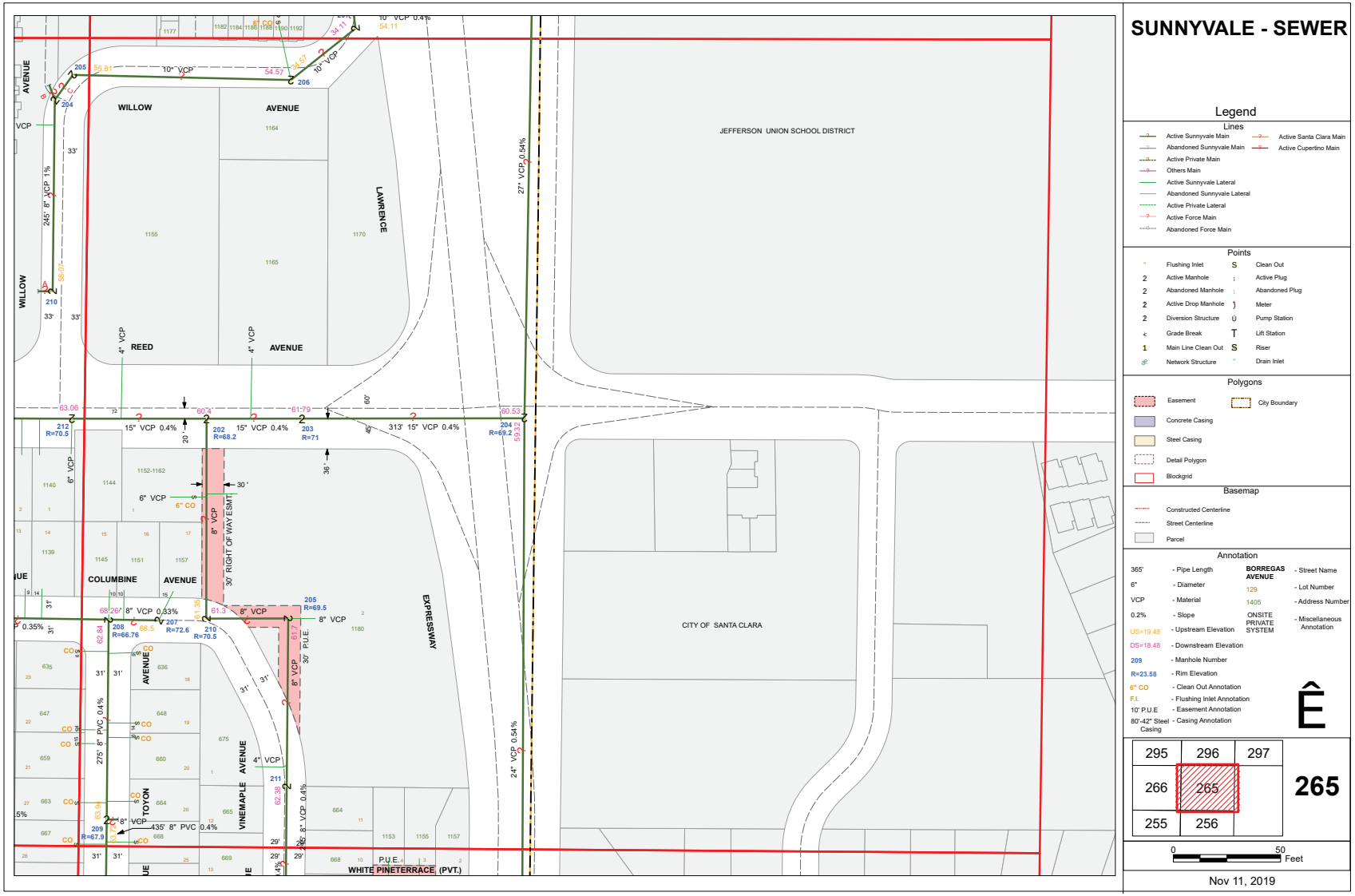
365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

294	295	296
267	266	265
254	255	256

266

0 50 Feet

Nov 11, 2019


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
295
296
297
266
265
255
256
265
0
50
Feet
Nov 11, 2019
WILLOW AVENUE
REED AVENUE
LAWRENCE
COLUMBINE AVENUE
TOYON AVENUE
VINEMAPLE AVENUE
EXPRESSWAY
JEFFERSON UNION SCHOOL DISTRICT
CITY OF SANTA CLARA
WHITE PINE TERRACE (PVT.)

APPENDIX B

LSAP Parcels with Development Assumptions

Appendix B
Lawrence Station Area Plan
LSAP Parcels with Devleopment Assumptions
Received from George Schroeder of the City of Sunnyvale on March 16, 2019

Residential development cap under the adopted LSAP (net new dwelling units)	**2,323**		
Net new housing units approved by the City since LSAP adoption in 2016	**1261**	**Addition of net new units proposed within the adopted LSAP**	**Total net new housing unit cap proposed with implementation of LSAP update**
Balance of net new housing units that currently remain for buildout within the adopted LSAP	**1,062**	**3,612**	**5,935**

Existing — Parcels highlighted in green will be analyzed as the existing condition.
Proposed — Parcels highlighted in blue will be analyzed as the proposed condition.

Parcels not expected to redevelop to residential or change (Caltrain properties also excluded)

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District
20549008	960	Kifer	Rd	214,751	4.93	MXD-2
20550001	1016-1020	Kifer	Rd	344,734	7.91	MXD-2
20550036	1050-1090	Kifer	Rd	426,364	9.79	MXD-1
20550029	1127	Sonora	Ct	175,982	4.04	MXD-2
20550004	1120-1130	Kifer	Rd	348,698	8.01	MXD-1
21627018	1202	Kifer	Rd	21,621	0.50	MXD-1
21627053	1210	Kifer	Rd	69,696	1.60	MXD-1
21627052	150	Lawrence Station	Rd	561,052	12.88	MXD-1
21627059	106	Lawrence Station	Rd	321,037	7.37	MXD-2
Various	1286-1298	Kifer	Rd	501,498	11.51	MXD-2
Various	1171-1193	Buttercup	Tr	32,800	0.75	R5
21301034	1155	Aster	Av	708,198	16.26	MXD-3
21301032	"	"		7,841	0.18	MXD-3
21301033	"	"		21,344	0.49	MXD-3

East of Calbazas Creek - 50% of these sites developed at 100 du/ac

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Existing or Approved Land Use	Existing SF (Nonres)	Estimated Units for Proposed LSAP
21627023	1484	Kifer	Rd	207,781	4.77	MS/LSAP	Industrial	128,628	382
21627068	1382-1388	Kifer	Rd	155,191	3.56	MS/LSAP	Office	88,222	338
21627069	1400	Kifer	Rd	276,231	6.34	MS/LSAP	Industrial	76,905	634
21627033				30,492	0.70	MS/LSAP	N/A, Rail Spur	N/A	0
21627035				43,124	0.99	MS/LSAP	N/A. Rail Spur	N/A	0
21627044	1450	Kifer	Rd	234,353	5.38	MS/LSAP	Office	78,000	0
21627045	123	Uranium	Dr	250,470	5.75	MS/LSAP	Industrial	105,000	0
21627047	111	Uranium	Dr	252,212	5.79	MS/LSAP	Industrial	126,788	328
21627048				16,117	0.37	MS/LSAP	N/A, Rail Spur	N/A	0
						Total of all sites			
						50% of total			

Lawrence/Reed/Willow - developed at 54 du/ac

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Existing or Approved Land Use	Existing SF (Nonres)	Estimated Units for Proposed LSAP	Estimated Retail under Proposed LSAP (SF)
21301001	1170	Willow	Av	10,550	0.24	OR	Commercial	19,145	13	1000
21301002	1165	Reed	Av	41,700	0.96	OR	Commercial	16,750	52	2000
21301003	1155	Reed	Av	67,082	1.54	OR	Commercial	11,448	83	2000
21301004	1164	Willow	Av	14,849	0.34	OR	Commercial	6,500	18	2000
					Total of all sites				**166**	**7,000**

Kifer/Sonora - developed at 100 du/ac

						Adopted LSAP DEC 2016					
APN	**Addr #**	**Street**	**St. Type**	**Lot Sq. Ft.**	**Lot Acres**	**Existing Max @ 68 du/ac**	**Delta**	**Existing or Approved Land Use**	**Existing SF (Nonres)**	**Estimated Units for Proposed LSAP**	**Estimated Retail under Proposed LSAP (SF)**
20550013	1178	Sonora	Ct	54,886	1.26	86	40	Industrial	19,440	126	1000
20550014	1170	Sonora	Ct	47,480	1.09	74	35	Industrial	14,850	109	N/A
20550015	1162	Sonora	Ct	51,401	1.18	80	38	Industrial	19,463	0	N/A
20550016	1154	Sonora	Ct	82,328	1.89	129	60	Industrial	41,062	168	N/A
20550017	1146	Sonora	Ct	32,670	0.75	51	24	Industrial	11,055	0	N/A
20550019	1175	Sonora	Ct	57,064	1.31	89	42	Industrial	19,098	111	N/A
20550022	1151	Sonora	Ct	55,757	1.28	87	41	Industrial	19,512	0	N/A
20550024	1171	Sonora	Ct	56,628	1.30	88	42	Industrial	19,512	130	N/A
20550025	1159	Sonora	Ct	49,658	1.14	78	36	Industrial	16,830	0	N/A
20550026	1145	Sonora	Ct	54,450	1.25	85	40	Industrial	19,990	0	N/A
20550028	1135	Sonora	Ct	64,033	1.47	100	47	Industrial	24,000	125	N/A
20550034	1150	Kifer	Rd	114,127	2.62	178	84	Office	46,849	262	2500
20550035	1170	Kifer	Rd	139,392	3.20	218	102	Office	57,649	320	2500
21627037	1360	Kifer	Rd	635,105	14.58	991	467	Industrial	286,800	1458	N/A
21627042	1256	Kifer	Rd	182,516	4.19	285	134	Industrial	61,758	0	N/A
21627043	1272	Kifer	Rd	426,452	9.79	666	313	Industrial	147,842	0	N/A
21627067	1242	Kifer	Rd	297,384	6.83	464	218	Office	152,758	0	N/A
					Total of all sites	**3,749**	**1,764**			**2,810**	**6,000**

R-5 Site - no change, 16 units allowed

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Estimated Units for Proposed LSAP
21301023	1159	Willow	Av	20708	0.48	R5	16

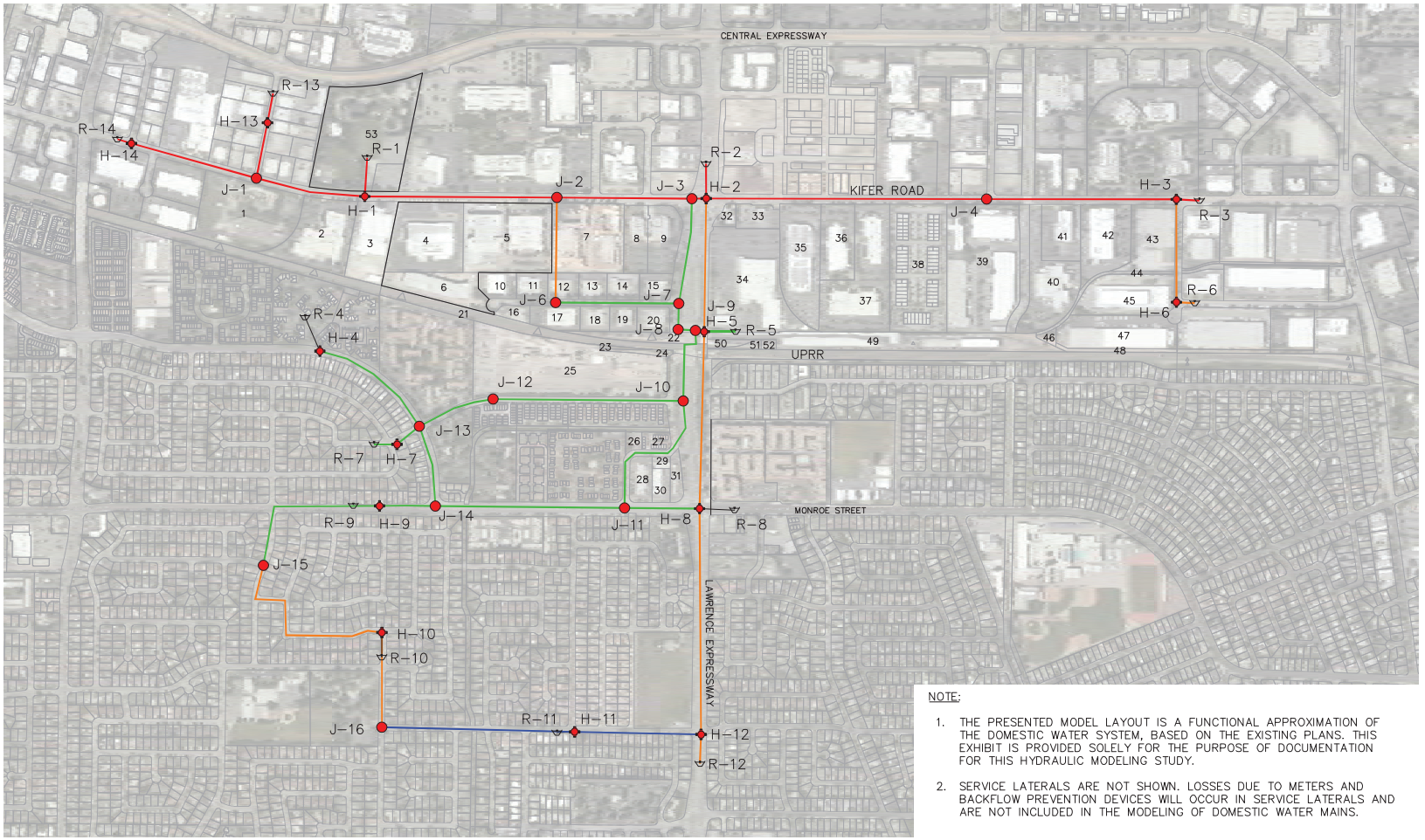
Railroad Properties

APN	Lot Sq. Ft.	Lot Acres
21627058	10,019	0.23
21627056	23,522	0.54
21627057	13,939	0.32
20550038	N/A	N/A
20550039	N/A	N/A
20550040	N/A	N/A
20550043	532,739	12.23
20550032	111,514	2.56

Note:
1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.

APPENDIX C

LSAP Potable Water Model Reports



NOTE:

1. THE PRESENTED MODEL LAYOUT IS A FUNCTIONAL APPROXIMATION OF THE DOMESTIC WATER SYSTEM, BASED ON THE EXISTING PLANS. THIS EXHIBIT IS PROVIDED SOLELY FOR THE PURPOSE OF DOCUMENTATION FOR THIS HYDRAULIC MODELING STUDY.
2. SERVICE LATERALS ARE NOT SHOWN. LOSSES DUE TO METERS AND BACKFLOW PREVENTION DEVICES WILL OCCUR IN SERVICE LATERALS AND ARE NOT INCLUDED IN THE MODELING OF DOMESTIC WATER MAINS.

EXHIBIT 1. WaterCAD Model Layout
Lawrence Station Area Plan
Housing Study Project
SCALE 1" = 800'
BKF No. 20180080-10

GRAPHIC SCALE
800 0 800 1600

LEGEND
- MODEL NODE
- MODEL RESERVOIR
- J-00 NODE ID
- H-00 HYDRANT ID
- HYDRANT LOCATION
- 12" CAST IRON PIPE (EXISTING)
- 12" DUCTILE IRON PIPE (EXISTING)
- 10" DUCTILE IRON PIPE (EXISTING)
- 8" DUCTILE IRON PIPE (EXISTING)

BKF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

APPENDIX C-1

Model Demand Scenario 1: Static

Node Report

Node ID	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
J-1	63.00	240.00	77
J-2	60.00	240.00	78
J-3	57.00	240.00	79
J-4	49.24	240.00	83
J-6	61.00	240.00	77
J-7	61.00	240.00	77
J-8	61.00	240.00	77
J-9	61.00	240.00	77
J-10	65.00	240.00	76
J-11	68.00	240.00	74
J-12	69.95	240.00	74
J-13	72.00	240.00	73
J-14	77.00	240.00	71
J-15	83.00	240.00	68
J-16	83.00	240.00	68
H-1	63.00	240.00	77
H-2	57.00	240.00	79
H-3	44.00	240.00	85
H-4	72.00	240.00	73
H-5	61.00	240.00	77
H-6	50.00	240.00	82
H-7	72.00	240.00	73
H-8	68.00	240.00	74
H-9	77.00	240.00	71
H-10	83.00	240.00	68
H-11	82.00	240.00	68
H-12	77.00	240.00	71
H-13	63.00	240.00	77
H-14	67.00	240.00	75

APPENDIX C-2

Model Demand Scenario 2: Peak Hour Demand

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ PHD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	500	1,000	76	1.73	TRUE
J-2	500	1,000	77	1.32	TRUE
J-3	500	1,000	79	1.87	TRUE
J-4	500	1,000	80	1.57	TRUE
J-6	500	1,000	76	1.80	TRUE
J-7	500	1,000	77	2.03	TRUE
J-8	500	1,000	77	2.66	TRUE
J-9	500	1,000	77	0.80	TRUE
J-10	500	1,000	75	1.86	TRUE
J-11	500	1,000	74	1.87	TRUE
J-12	500	1,000	72	2.55	TRUE
J-13	500	1,000	72	1.85	TRUE
J-14	500	1,000	70	1.84	TRUE
J-15	500	1,000	67	1.69	TRUE
J-16	500	1,000	66	2.96	TRUE
H-1	500	1,000	77	0.18	TRUE
H-2	500	1,000	79	0.42	TRUE
H-3	500	1,000	85	0.06	TRUE
H-4	500	1,000	73	0.14	TRUE
H-5	500	1,000	77	0.29	TRUE
H-6	500	1,000	82	0.26	TRUE
H-7	500	1,000	73	0.38	TRUE
H-8	500	1,000	74	0.30	TRUE
H-9	500	1,000	71	0.08	TRUE
H-10	500	1,000	68	0.15	TRUE
H-11	500	1,000	68	0.36	TRUE
H-12	500	1,000	71	0.06	TRUE
H-13	500	1,000	77	0.29	TRUE
H-14	500	1,000	75	0.10	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX C-3

Model Demand Scenario 3: Max Day Demand + Fire Flow

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ MDD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	4,820	6,000	73	10.40	TRUE
J-2	4,820	6,000	61	7.93	TRUE
J-3	4,820	6,000	74	11.25	TRUE
J-4	4,820	5,788	38	9.09	TRUE
J-6	4,820	6,000	56	10.78	TRUE
J-7	4,820	6,000	68	12.17	TRUE
J-8	4,820	5,648	70	15.00	TRUE
J-9	4,820	6,000	74	4.80	TRUE
J-10	4,820	6,000	62	11.16	TRUE
J-11	4,820	6,000	63	11.23	TRUE
J-12	4,820	5,881	49	15.00	TRUE
J-13	4,820	6,000	68	11.10	TRUE
J-14	4,820	6,000	62	11.02	TRUE
J-15	4,820	6,000	47	10.12	TRUE
J-16	4,820	5,065	33	15.00	TRUE
H-1	4,820	6,000	76	1.06	TRUE
H-2	4,820	6,000	78	2.50	TRUE
H-3	4,820	6,000	85	0.33	TRUE
H-4	4,820	6,000	72	0.87	TRUE
H-5	4,820	6,000	77	1.75	TRUE
H-6	4,820	6,000	82	1.56	TRUE
H-7	4,820	6,000	72	2.30	TRUE
H-8	4,820	6,000	74	1.80	TRUE
H-9	4,820	6,000	70	0.45	TRUE
H-10	4,820	6,000	68	0.90	TRUE
H-11	4,820	6,000	67	2.15	TRUE
H-12	4,820	6,000	70	0.33	TRUE
H-13	4,820	6,000	76	1.77	TRUE
H-14	4,820	6,000	75	0.59	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX D

LSAP Sewer Model Reports

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-AA-P1	294-206	294-207	**1173.61**	6027.72	24	278.00	0.004	0.013	59.36	58.38	73.50	71.62	59.96	58.98	13.54	12.14	3.31	**0.30**
EX-AA-P2	294-207	295-201	**1173.61**	6002.76	24	320.40	0.003	0.013	58.38	57.26	71.62	69.20	58.98	57.86	12.64	11.24	3.30	**0.30**
EX-AA-P3	295-201	295-202	**1173.61**	5982.64	24	293.80	0.003	0.013	57.26	56.24	69.20	67.30	57.86	56.85	11.34	9.94	3.29	**0.30**
EX-AA-P4	295-202	295-203	**1203.25**	6012.36	24	305.10	0.004	0.013	56.24	55.17	67.30	62.64	56.85	55.78	10.45	9.06	3.33	**0.31**
EX-AA-P5	295-203	295-207	**1203.25**	5946.41	24	29.20	0.003	0.013	55.17	55.07	62.64	62.42	55.78	55.68	6.86	5.47	3.30	**0.31**
EX-AA-P6	295-207	295-208	**1203.25**	6011.31	24	119.80	0.004	0.013	55.07	54.65	62.42	61.50	55.68	55.26	6.74	5.35	3.33	**0.31**
EX-AA-P7	295-208	295-209	**1203.25**	6015.10	24	131.10	0.004	0.013	54.65	54.19	61.50	61.30	55.26	54.79	6.24	4.85	3.33	**0.31**
EX-AA-P8	295-209	295-204	**1203.25**	6076.51	24	19.50	0.004	0.013	54.19	54.12	61.30	61.50	54.79	54.73	6.51	5.11	3.36	**0.30**
EX-AA-P9	295-204	295-210	**1203.25**	6012.78	24	111.20	0.004	0.013	54.12	53.73	61.50	61.30	54.73	54.34	6.77	5.38	3.33	**0.31**
EX-AA-P10	295-210	295-211	**1203.25**	6020.16	24	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.34	53.87	6.96	5.57	3.33	**0.31**
EX-AA-P11	295-211	295-212	**1203.25**	6063.28	24	58.90	0.004	0.013	53.27	53.06	60.40	60.33	53.87	53.67	6.53	5.13	3.35	**0.30**
EX-AA-P12	295-212	296-211	**1203.25**	5948.20	24	81.60	0.003	0.013	53.06	52.78	60.33	59.45	53.67	53.39	6.66	5.27	3.30	**0.31**
EX-AA-P13	296-211	296-212	**1232.89**	6020.30	24	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.39	52.93	6.06	4.67	3.36	**0.31**
EX-AA-P14	296-212	296-209	**1232.89**	6030.04	24	90.70	0.004	0.013	52.32	52.00	59.45	63.00	52.93	52.58	6.52	5.13	3.36	**0.31**
EX-CR-P1	337-202	337-201	**24.75**	8049.63	10	5.00	0.670	0.013	44.81	41.45	54.00	54.00	44.91	41.89	9.09	8.36	7.36	**0.12**
EX-CR-P2	337-201	337-206 (EX)	**338.45**	1786.38	18	348.20	0.001	0.013	41.45	40.95	54.00	53.00	41.89	41.27	12.11	11.05	1.73	**0.29**
EX-KR-P1	333-206	334-201	**336.11**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
EX-KR-P2	334-201	334-202	**492.82**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
EX-KR-P3	334-202	335-201	**519.37**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
EX-KR-P4	335-201	335-202	**571.01**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.61	**0.32**
EX-KR-P5	335-202	336-201	**634.28**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
EX-KR-P6	336-201	336-202	**733.54**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.90	11.20	10.18	5.67	**0.32**
EX-KR-P7	336-203	336-204	**3.09**	296.15	8	335.40	0.003	0.013	46.80	45.80	55.00	56.50	46.85	45.90	8.15	7.53	0.61	**0.08**
EX-KR-P8	336-204	337-202	**16.19**	538.35	10	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.90	44.91	10.60	9.87	0.98	**0.12**
EX-KR-P9	337-203	337-201	**313.70**	1858.32	18	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.38	41.89	10.42	9.34	1.74	**0.28**
EX-KR-P10	337-204	337-203	**293.22**	1764.29	18	328.50	0.001	0.013	42.52	42.06	52.50	52.80	42.93	42.38	9.57	8.48	1.65	**0.27**
EX-KR-P11	337-208	337-204	**276.10**	1963.22	18	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.15	42.93	9.25	8.13	1.75	**0.25**
EX-KR-P12	337-205	337-208	**276.10**	1686.94	18	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.49	43.15	8.71	7.62	1.57	**0.27**
EX-KR-P13	338-201	337-205	**276.10**	1765.25	18	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.04	43.49	7.46	6.36	1.62	**0.27**
EX-KR-P14	338-202	338-201	**159.71**	1758.45	18	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.42	44.04	6.58	5.39	1.38	**0.21**
EX-KR-P15	338-203	338-204 (EX)	**159.71**	5139.47	12	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.43	29.82	18.57	17.82	6.61	**0.25**
EX-KR-P16	338-207	338-203	**159.71**	783.86	12	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.42	32.43	16.38	15.69	1.75	**0.31**
EX-KR-P17	338-209	338-207	**82.12**	828.07	12	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.29	33.42	15.31	14.52	1.50	**0.21**
EX-KR-P18	339-201	338-209	**71.31**	828.61	12	324.00	0.003	0.013	35.05	34.18	49.20	49.60	35.25	34.34	13.95	13.15	1.44	**0.20**
EX-KR-P19	339-202	339-201	**56.02**	825.85	12	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.20	35.29	11.40	10.58	1.34	**0.18**
EX-LE-P1	265-204	296-203	**1539.58**	10356.75	27	706.10	0.006	0.013	56.12	52.20	67.83	69.82	56.75	52.79	11.08	9.46	4.16	**0.28**
EX-LE-P2	296-203	296-202	**1539.58**	10321.07	27	526.00	0.006	0.013	52.20	49.30	69.82	61.19	52.83	50.15	16.99	15.37	4.15	**0.28**
EX-LE-P3	296-202	305-207	**2787.60**	9722.92	27	400.60	0.005	0.013	49.30	47.34	61.19	60.50	50.15	48.16	11.04	9.64	4.70	**0.38**
EX-LE-P4	305-207	305-208	**2787.60**	10276.48	27	142.70	0.005	0.013	47.34	46.56	60.50	58.98	48.19	47.41	12.31	10.91	4.90	**0.38**
EX-LE-P5	305-208	305-209	**2793.45**	10397.94	27	512.90	0.006	0.013	46.56	43.69	58.98	56.98	47.41	44.54	11.57	10.17	4.94	**0.38**
EX-LE-P6	305-209	336-202	**2799.30**	10219.40	27	323.70	0.005	0.013	43.69	41.94	56.98	57.04	44.54	42.90	12.44	11.04	4.88	**0.38**
EX-LE-P7	336-202	336-207 (EX)	**3533.54**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	42.90	39.23	14.14	12.85	5.20	**0.43**
EX-SC-P1	306-201	306-202	**9.98**	982.14	10	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.84	53.87	8.06	7.29	1.30	**0.07**
EX-SC-P2	306-202	306-203	**14.28**	616.32	10	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.87	52.73	8.53	7.79	1.04	**0.11**
EX-SC-P3	306-203	306-204	**30.39**	595.79	10	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.73	51.64	8.12	7.42	1.28	**0.16**
EX-SC-P4	306-204	305-205	**35.42**	595.39	10	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.64	50.58	9.16	8.47	1.33	**0.17**
EX-SC-P5	305-205	305-204	**54.50**	507.31	10	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.58	49.77	8.92	8.27	1.35	**0.22**
EX-SZW-P1	305-206	305-204	**10.14**	544.00	10	173.20	0.003	0.013	50.13	49.60	60.20	59.40	50.21	49.77	9.99	9.24	0.86	**0.10**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-SZW-P2	305-204	305-203	**73.50**	832.77	10	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.77	49.50	9.63	8.97	2.10	**0.20**
EX-SZW-P3	305-203	305-202	**73.50**	568.08	10	209.70	0.003	0.013	49.30	48.60	59.60	59.80	49.50	48.79	10.10	9.47	1.60	**0.24**
EX-SZW-P4	305-202	305-201	**73.50**	663.21	10	321.00	0.005	0.013	48.60	47.14	59.80	59.70	48.79	47.31	11.01	10.37	1.79	**0.23**
EX-SZW-P5	305-201	336-201	**86.38**	602.90	10	324.50	0.004	0.013	47.04	45.82	59.70	57.50	47.25	46.30	12.45	11.83	1.75	**0.25**
EX-UD-P1	302-201	302-202	**26.18**	563.71	10	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.01	38.27	10.99	10.28	1.17	**0.14**
EX-UD-P2	302-202	302-203	**40.73**	553.58	10	306.10	0.003	0.013	38.12	37.15	49.00	47.50	38.27	37.28	10.73	10.05	1.32	**0.18**
EX-UD-P3	302-203	339-203	**56.02**	566.65	10	295.10	0.003	0.013	37.10	36.12	47.50	47.60	37.28	36.27	10.22	9.57	1.48	**0.22**
EX-UD-P4	339-203	339-202	**56.02**	972.06	10	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.27	36.20	11.33	10.65	2.16	**0.18**
EX-WA-P1	266-210	266-204	**6.80**	342.80	8	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.34	55.35	11.66	11.06	0.86	**0.11**
EX-WA-P2	266-204	266-205	**6.80**	627.96	10	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.35	55.11	11.65	10.88	0.84	**0.07**
EX-WA-P3	266-205	265-206	**8.08**	622.31	10	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.11	53.93	10.89	10.13	0.88	**0.08**
EX-WA-P4	265-206	296-207	**14.01**	617.62	10	114.10	0.004	0.013	53.84	53.39	65.00	62.50	53.93	53.48	11.07	10.33	1.04	**0.11**
EX-WA-P5	296-207	296-213	**15.13**	633.75	10	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.48	53.33	9.02	8.28	1.08	**0.11**
EX-WA-P6	296-213	296-208	**15.13**	620.62	10	326.40	0.004	0.013	53.24	51.94	61.40	63.60	53.33	52.40	8.07	7.33	1.07	**0.11**
EX-WA-P7	296-208	296-209	**15.13**	628.88	10	34.20	0.004	0.013	51.94	51.80	63.60	63.00	52.40	52.40	11.20	10.83	1.07	**0.55**
EX-WA-P8	296-209	296-201	**1248.02**	6427.38	24	309.40	0.004	0.013	51.80	50.56	63.00	62.00	52.40	51.16	10.60	9.20	3.53	**0.30**
EX-WA-P9	296-201	296-202	**1248.02**	6413.14	24	315.80	0.004	0.013	50.56	49.30	62.00	61.19	51.16	50.15	10.84	9.44	3.52	**0.30**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-AA-P1	294-206 (P)	294-207 (P)	**1173.61**	6028.52	24.00	278.00	0.004	0.013	59.36	58.38	73.50	71.62	59.96	58.98	13.54	12.14	3.31	**0.30**
PR-AA-P2	294-207 (P)	295-201 (P)	**1173.61**	6003.00	24.00	320.40	0.003	0.013	58.38	57.26	71.62	69.20	58.98	57.86	12.64	11.24	3.30	**0.30**
PR-AA-P3	295-201 (P)	295-202 (P)	**1173.61**	5982.68	24.00	293.80	0.003	0.013	57.26	56.24	69.20	67.30	57.86	56.85	11.34	9.94	3.29	**0.30**
PR-AA-P4	295-202 (P)	295-203 (P)	**1203.25**	6012.41	24.00	305.10	0.004	0.013	56.24	55.17	67.30	62.64	56.85	55.78	10.45	9.06	3.33	**0.31**
PR-AA-P5	295-203 (P)	295-207 (P)	**1203.25**	5946.35	24.00	29.20	0.003	0.013	55.17	55.07	62.64	62.42	55.78	55.68	6.86	5.47	3.30	**0.31**
PR-AA-P6	295-207 (P)	295-208 (P)	**1203.25**	6011.14	24.00	119.80	0.004	0.013	55.07	54.65	62.42	61.50	55.68	55.25	6.74	5.35	3.33	**0.31**
PR-AA-P7	295-208 (P)	295-209 (P)	**1203.25**	6079.61	24.00	131.10	0.004	0.013	54.65	54.18	61.50	61.30	55.25	54.80	6.25	4.85	3.36	**0.30**
PR-AA-P8	295-209 (P)	295-204 (P)	**1203.25**	5624.90	24.00	19.50	0.003	0.013	54.18	54.12	61.30	61.50	54.80	54.73	6.50	5.12	3.17	**0.31**
PR-AA-P9	295-204 (P)	295-210 (P)	**1203.25**	6012.26	24.00	111.20	0.004	0.013	54.12	53.73	61.50	61.30	54.73	54.34	6.77	5.38	3.33	**0.31**
PR-AA-P10	295-210 (P)	295-211 (P)	**1203.25**	6020.88	24.00	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.34	53.87	6.96	5.57	3.33	**0.31**
PR-AA-P11	295-211 (P)	295-212 (P)	**1203.25**	6062.16	24.00	58.90	0.004	0.013	53.27	53.06	60.40	60.33	53.87	53.67	6.53	5.13	3.35	**0.30**
PR-AA-P12	295-212 (P)	296-211 (P)	**1203.25**	5948.96	24.00	81.60	0.003	0.013	53.06	52.78	60.33	59.45	53.67	53.39	6.66	5.27	3.30	**0.31**
PR-AA-P13	296-211 (P)	296-212 (P)	**1232.89**	6020.86	24.00	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.39	52.93	6.06	4.67	3.36	**0.31**
PR-AA-P14	296-212 (P)	296-209 (P)	**1232.89**	6040.64	24.00	90.40	0.004	0.013	52.32	52.00	59.45	63.00	52.93	52.58	6.52	5.13	3.36	**0.31**
PR-CR-P1	337-202 (P)	337-201 (P)	**24.75**	7952.27	10.00	5.10	0.654	0.013	44.81	41.45	54.00	54.00	44.91	41.89	9.09	8.36	7.28	**0.12**
PR-CR-P2	337-201 (P)	337-206 (P)	**338.45**	1789.33	18.00	347.10	0.001	0.013	41.45	40.95	54.00	53.00	41.89	41.27	12.11	11.05	1.73	**0.29**
PR-KR-P1	333-206 (P)	334-201 (P)	**336.11**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
PR-KR-P2	334-201 (P)	334-202 (P)	**492.82**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
PR-KR-P3	334-202 (P)	335-201 (P)	**519.37**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
PR-KR-P4	335-201 (P)	335-202 (P)	**571.01**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.62	**0.32**
PR-KR-P5	335-202 (P)	336-201 (P)	**634.28**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
PR-KR-P6	336-201 (P)	336-202 (P)	**733.54**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.87	11.20	10.18	5.67	**0.32**
PR-KR-P7	336-203 (P)	336-204 (P)	**3.09**	529.77	8.00	335.40	0.010	0.013	49.00	45.80	55.00	56.50	49.04	45.90	5.96	5.33	0.92	**0.06**
PR-KR-P8	336-204 (P)	337-202 (P)	**16.19**	538.33	10.00	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.90	44.91	10.60	9.87	0.98	**0.12**
PR-KR-P9	337-203 (P)	337-201 (P)	**313.70**	1858.54	18.00	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.38	41.89	10.42	9.34	1.74	**0.28**
PR-KR-P10	337-204 (P)	337-203 (P)	**293.22**	1764.27	18.00	328.50	0.001	0.013	42.52	42.06	52.50	52.80	42.93	42.38	9.57	8.48	1.65	**0.27**
PR-KR-P11	337-208 (P)	337-204 (P)	**276.10**	1963.59	18.00	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.15	42.93	9.25	8.13	1.75	**0.25**
PR-KR-P12	337-205 (P)	337-208 (P)	**276.10**	1686.95	18.00	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.49	43.15	8.71	7.62	1.57	**0.27**
PR-KR-P13	338-201 (P)	337-205 (P)	**276.10**	1765.17	18.00	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.04	43.49	7.46	6.36	1.62	**0.27**
PR-KR-P14	338-202 (P)	338-201 (P)	**159.71**	1758.49	18.00	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.42	44.04	6.58	5.39	1.38	**0.21**
PR-KR-P15	338-203 (P)	Kifer Lift Station	**159.71**	5132.80	12.00	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.43	29.82	18.57	17.82	6.60	**0.25**
PR-KR-P16	338-207 (P)	338-203 (P)	**159.71**	783.86	12.00	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.42	32.43	16.38	15.69	1.75	**0.31**
PR-KR-P17	338-209 (P)	338-207 (P)	**82.12**	828.11	12.00	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.29	33.42	15.31	14.52	1.50	**0.21**
PR-KR-P18	339-201 (P)	338-209 (P)	**71.31**	827.69	12.00	324.70	0.003	0.013	35.05	34.18	49.20	49.60	35.25	34.34	13.95	13.15	1.44	**0.20**
PR-KR-P19	339-202 (P)	339-201 (P)	**56.02**	825.91	12.00	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.20	35.29	11.40	10.58	1.34	**0.18**
PR-LE-P1	265-204 (P)	296-203 (P)	**1539.58**	10360.63	27.00	705.50	0.006	0.013	56.12	52.20	67.83	69.82	56.75	52.79	11.08	9.46	4.17	**0.28**
PR-LE-P2	296-203 (P)	296-202 (P)	**1539.58**	10316.94	27.00	526.40	0.006	0.013	52.20	49.30	69.82	61.19	52.83	50.15	16.99	15.37	4.15	**0.28**
PR-LE-P3	296-202 (P)	305-207 (P)	**2787.60**	9715.82	27.00	401.10	0.005	0.013	49.30	47.34	61.19	60.50	50.15	48.16	11.04	9.64	4.70	**0.38**
PR-LE-P4	305-207 (P)	305-208 (P)	**2787.60**	10306.34	27.00	141.90	0.005	0.013	47.34	46.56	60.50	58.98	48.19	47.41	12.31	10.91	4.91	**0.38**
PR-LE-P5	305-208 (P)	305-209 (P)	**2793.45**	10400.80	27.00	512.60	0.006	0.013	46.56	43.69	58.98	56.98	47.41	44.54	11.57	10.17	4.94	**0.38**
PR-LE-P6	305-209 (P)	336-202 (P)	**2799.30**	10208.66	27.00	324.40	0.005	0.013	43.69	41.94	56.98	57.04	44.54	42.87	12.44	11.04	4.88	**0.38**
PR-LE-P7	336-202 (P)	336-207 (P)	**3533.54**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	42.87	39.08	14.17	12.58	6.24	**0.37**
PR-SC-P1	306-201 (P)	306-202 (P)	**9.98**	982.15	10.00	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.84	53.87	8.06	7.29	1.30	**0.07**
PR-SC-P2	306-202 (P)	306-203 (P)	**14.28**	616.25	10.00	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.87	52.73	8.53	7.79	1.04	**0.11**
PR-SC-P3	306-203 (P)	306-204 (P)	**30.39**	595.86	10.00	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.73	51.64	8.12	7.42	1.28	**0.16**
PR-SC-P4	306-204 (P)	305-205 (P)	**35.42**	595.40	10.00	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.64	50.58	9.16	8.47	1.33	**0.17**
PR-SC-P5	305-205 (P)	305-204 (P)	**54.50**	507.29	10.00	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.58	49.77	8.92	8.27	1.35	**0.22**
PR-SZW-P1	305-206 (P)	305-204 (P)	**10.14**	707.09	10.00	173.20	0.003	0.010	50.13	49.60	60.20	59.40	50.20	49.77	10.00	9.24	1.04	**0.08**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-SZW-P2	305-204 (P)	305-203 (P)	**73.50**	833.08	10.00	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.77	49.50	9.63	8.97	2.10	**0.20**
PR-SZW-P3	305-203 (P)	305-202 (P)	**73.50**	568.20	10.00	209.60	0.003	0.013	49.30	48.60	59.60	59.80	49.50	48.79	10.10	9.47	1.60	**0.24**
PR-SZW-P4	305-202 (P)	305-201 (P)	**73.50**	662.80	10.00	321.40	0.005	0.013	48.60	47.14	59.80	59.70	48.79	47.31	11.01	10.37	1.78	**0.23**
PR-SZW-P5	305-201 (P)	336-201 (P)	**86.38**	1148.49	11.54	324.50	0.004	0.010	47.04	45.82	59.70	57.50	47.22	46.30	12.48	11.70	2.07	**0.19**
PR-UD-P1	302-201 (P)	302-202 (P)	**26.18**	563.74	10.00	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.01	38.27	10.99	10.28	1.17	**0.14**
PR-UD-P2	302-202 (P)	302-203 (P)	**40.73**	567.61	10.00	306.10	0.003	0.013	38.12	37.10	49.00	47.50	38.27	37.28	10.73	10.05	1.35	**0.18**
PR-UD-P3	302-203 (P)	339-203 (P)	**56.02**	566.91	10.00	294.90	0.003	0.013	37.10	36.12	47.50	47.60	37.28	36.27	10.22	9.57	1.48	**0.22**
PR-UD-P4	339-203 (P)	339-202 (P)	**56.02**	975.12	10.00	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.27	36.20	11.33	10.65	2.16	**0.18**
PR-WA-P1	266-210 (P)	266-204 (P)	**6.80**	342.80	8.00	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.34	55.35	11.66	11.06	0.86	**0.11**
PR-WA-P2	266-204 (P)	266-205 (P)	**6.80**	628.19	10.00	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.35	55.11	11.65	10.88	0.84	**0.07**
PR-WA-P3	266-205 (P)	265-206 (P)	**8.08**	622.28	10.00	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.11	53.93	10.89	10.13	0.88	**0.08**
PR-WA-P4	265-206 (P)	296-207 (P)	**14.01**	617.62	10.00	114.10	0.004	0.013	53.84	53.39	65.00	62.50	53.93	53.48	11.07	10.33	1.04	**0.11**
PR-WA-P5	296-207 (P)	296-213 (P)	**15.13**	634.18	10.00	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.48	53.33	9.02	8.28	1.08	**0.11**
PR-WA-P6	296-213 (P)	296-208 (P)	**15.13**	620.91	10.00	326.10	0.004	0.013	53.24	51.94	61.40	63.60	53.33	52.40	8.07	7.33	1.07	**0.11**
PR-WA-P7	296-208 (P)	296-209 (P)	**15.13**	3466.83	17.20	34.30	0.004	0.010	51.94	51.80	63.60	63.00	52.40	52.40	11.20	10.23	1.19	**0.32**
PR-WA-P8	296-209 (P)	296-201 (P)	**1248.02**	6431.76	24.00	309.00	0.004	0.013	51.80	50.56	63.00	62.00	52.40	51.16	10.60	9.20	3.53	**0.30**
PR-WA-P9	296-201 (P)	296-202 (P)	**1248.02**	6424.85	24.00	314.70	0.004	0.013	50.56	49.30	62.00	61.19	51.16	50.15	10.84	9.44	3.53	**0.30**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-AA-P1	294-206	294-207	**3110.07**	6027.72	24	278.00	0.004	0.013	59.36	58.38	73.50	71.62	60.38	59.40	13.12	12.14	4.31	**0.51**
EX-AA-P2	294-207	295-201	**3110.07**	6002.76	24	320.40	0.003	0.013	58.38	57.26	71.62	69.20	59.40	58.28	12.22	11.24	4.30	**0.51**
EX-AA-P3	295-201	295-202	**3110.07**	5982.64	24	293.80	0.003	0.013	57.26	56.24	69.20	67.30	58.28	57.28	10.92	9.94	4.28	**0.51**
EX-AA-P4	295-202	295-203	**3203.44**	6012.36	24	305.10	0.004	0.013	56.24	55.17	67.30	62.64	57.28	56.21	10.02	9.06	4.33	**0.52**
EX-AA-P5	295-203	295-207	**3203.44**	5946.41	24	29.20	0.003	0.013	55.17	55.07	62.64	62.42	56.21	56.11	6.43	5.47	4.30	**0.52**
EX-AA-P6	295-207	295-208	**3203.44**	6011.31	24	119.80	0.004	0.013	55.07	54.65	62.42	61.50	56.11	55.69	6.31	5.35	4.33	**0.52**
EX-AA-P7	295-208	295-209	**3203.44**	6015.10	24	131.10	0.004	0.013	54.65	54.19	61.50	61.30	55.69	55.22	5.81	4.85	4.33	**0.52**
EX-AA-P8	295-209	295-204	**3203.44**	6076.51	24	19.50	0.004	0.013	54.19	54.12	61.30	61.50	55.22	55.16	6.08	5.11	4.37	**0.52**
EX-AA-P9	295-204	295-210	**3203.44**	6012.78	24	111.20	0.004	0.013	54.12	53.73	61.50	61.30	55.16	54.77	6.34	5.38	4.33	**0.52**
EX-AA-P10	295-210	295-211	**3203.44**	6020.16	24	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.77	54.30	6.53	5.57	4.34	**0.52**
EX-AA-P11	295-211	295-212	**3203.44**	6063.28	24	58.90	0.004	0.013	53.27	53.06	60.40	60.33	54.30	54.11	6.10	5.13	4.36	**0.51**
EX-AA-P12	295-212	296-211	**3203.44**	5948.20	24	81.60	0.003	0.013	53.06	52.78	60.33	59.45	54.11	53.84	6.22	5.27	4.30	**0.52**
EX-AA-P13	296-211	296-212	**3296.81**	6020.30	24	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.84	53.37	5.61	4.67	4.37	**0.53**
EX-AA-P14	296-212	296-209	**3296.81**	6030.04	24	90.70	0.004	0.013	52.32	52.00	59.45	63.00	53.37	52.96	6.08	5.13	4.37	**0.52**
EX-CR-P1	337-202	337-201	**94.00**	8049.63	10	5.00	0.670	0.013	44.81	41.45	54.00	54.00	45.01	42.32	8.99	8.36	11.04	**0.24**
EX-CR-P2	337-201	337-206 (EX)	**1147.19**	1786.38	18	348.20	0.001	0.013	41.45	40.95	54.00	53.00	42.32	41.56	11.68	11.05	2.39	**0.58**
EX-KR-P1	333-206	334-201	**957.91**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
EX-KR-P2	334-201	334-202	**1460.66**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
EX-KR-P3	334-202	335-201	**1557.58**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
EX-KR-P4	335-201	335-202	**1720.26**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
EX-KR-P5	335-202	336-201	**1940.67**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
EX-KR-P6	336-201	336-202	**2314.89**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.71	10.81	10.18	7.84	**0.58**
EX-KR-P7	336-203	336-204	**12.81**	296.15	8	335.40	0.003	0.013	46.80	45.80	55.00	56.50	46.89	45.99	8.11	7.53	0.94	**0.14**
EX-KR-P8	336-204	337-202	**60.63**	538.35	10	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.99	45.01	10.51	9.87	1.46	**0.23**
EX-KR-P9	337-203	337-201	**1053.19**	1858.32	18	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.77	42.32	10.03	9.34	2.42	**0.54**
EX-KR-P10	337-204	337-203	**978.43**	1764.29	18	328.50	0.001	0.013	42.52	42.06	52.50	52.80	43.31	42.77	9.19	8.48	2.28	**0.53**
EX-KR-P11	337-208	337-204	**915.93**	1963.22	18	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.48	43.31	8.92	8.13	2.43	**0.47**
EX-KR-P12	337-205	337-208	**915.93**	1686.94	18	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.86	43.48	8.34	7.62	2.17	**0.52**
EX-KR-P13	338-201	337-205	**915.93**	1765.25	18	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.40	43.86	7.10	6.36	2.25	**0.51**
EX-KR-P14	338-202	338-201	**549.31**	1758.45	18	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.69	44.40	6.31	5.39	1.96	**0.39**
EX-KR-P15	338-203	338-204 (EX)	**549.31**	5139.47	12	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.65	29.92	18.35	17.82	9.51	**0.47**
EX-KR-P16	338-207	338-203	**549.31**	783.86	12	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.73	32.65	16.07	15.69	2.41	**0.62**
EX-KR-P17	338-209	338-207	**285.50**	828.07	12	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.49	33.73	15.11	14.52	2.13	**0.41**
EX-KR-P18	339-201	338-209	**246.06**	828.61	12	324.00	0.003	0.013	35.05	34.18	49.20	49.60	35.42	34.49	13.78	13.15	2.05	**0.37**
EX-KR-P19	339-202	339-201	**194.09**	825.85	12	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.35	35.42	11.25	10.58	1.91	**0.33**
EX-LE-P1	265-204	296-203	**4079.89**	10356.75	27	706.10	0.006	0.013	56.12	52.20	67.83	69.82	57.16	53.18	10.67	9.46	5.46	**0.46**
EX-LE-P2	296-203	296-202	**4079.89**	10321.07	27	526.00	0.006	0.013	52.20	49.30	69.82	61.19	53.24	50.77	16.58	15.37	5.44	**0.46**
EX-LE-P3	296-202	305-207	**7437.78**	9722.92	27	400.60	0.005	0.013	49.30	47.34	61.19	60.50	50.77	48.76	10.42	9.64	6.00	**0.65**
EX-LE-P4	305-207	305-208	**7437.78**	10276.48	27	142.70	0.005	0.013	47.34	46.56	60.50	58.98	48.76	47.98	11.74	10.91	6.27	**0.63**
EX-LE-P5	305-208	305-209	**7459.14**	10397.94	27	512.90	0.006	0.013	46.56	43.69	58.98	56.98	47.98	45.12	11.00	10.17	6.34	**0.63**
EX-LE-P6	305-209	336-202	**7480.50**	10219.40	27	323.70	0.005	0.013	43.69	41.94	56.98	57.04	45.12	43.71	11.86	11.04	6.25	**0.64**
EX-LE-P7	336-202	336-207 (EX)	**9798.29**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	43.71	39.96	13.33	12.85	6.51	**0.79**
EX-SC-P1	306-201	306-202	**38.92**	982.14	10	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.91	53.95	7.99	7.29	1.95	**0.16**
EX-SC-P2	306-202	306-203	**56.77**	616.32	10	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.95	52.85	8.45	7.79	1.57	**0.20**
EX-SC-P3	306-203	306-204	**116.94**	595.79	10	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.85	51.77	8.00	7.42	1.89	**0.30**
EX-SC-P4	306-204	305-205	**137.81**	595.39	10	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.77	50.78	9.03	8.47	1.98	**0.32**
EX-SC-P5	305-205	305-204	**212.52**	507.31	10	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.78	49.95	8.72	8.27	1.98	**0.46**
EX-SZW-P1	305-206	305-204	**39.56**	544.00	10	173.20	0.003	0.013	50.13	49.60	60.20	59.40	50.28	49.95	9.92	9.24	1.29	**0.18**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-SZW-P2	305-204	305-203	**286.64**	832.77	10	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.95	49.72	9.45	8.97	3.08	**0.42**
EX-SZW-P3	305-203	305-202	**286.64**	568.08	10	209.70	0.003	0.013	49.30	48.60	59.60	59.80	49.72	48.98	9.88	9.47	2.33	**0.50**
EX-SZW-P4	305-202	305-201	**286.64**	663.21	10	321.00	0.005	0.013	48.60	47.14	59.80	59.70	48.98	47.49	10.82	10.37	2.61	**0.46**
EX-SZW-P5	305-201	336-201	**330.43**	602.90	10	324.50	0.004	0.013	47.04	45.82	59.70	57.50	47.48	46.69	12.22	11.83	2.52	**0.53**
EX-UD-P1	302-201	302-202	**89.02**	563.71	10	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.11	38.41	10.89	10.28	1.68	**0.26**
EX-UD-P2	302-202	302-203	**142.12**	553.58	10	306.10	0.003	0.013	38.12	37.15	49.00	47.50	38.41	37.44	10.59	10.05	1.89	**0.35**
EX-UD-P3	302-203	339-203	**194.09**	566.65	10	295.10	0.003	0.013	37.10	36.12	47.50	47.60	37.44	36.41	10.06	9.57	2.10	**0.41**
EX-UD-P4	339-203	339-202	**194.09**	972.06	10	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.41	36.35	11.19	10.65	3.10	**0.35**
EX-WA-P1	266-210	266-204	**26.51**	342.80	8	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.40	55.41	11.60	11.06	1.30	**0.19**
EX-WA-P2	266-204	266-205	**26.51**	627.96	10	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.41	55.17	11.59	10.88	1.27	**0.14**
EX-WA-P3	266-205	265-206	**31.81**	622.31	10	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.17	54.01	10.83	10.13	1.33	**0.16**
EX-WA-P4	265-206	296-207	**56.42**	617.62	10	114.10	0.004	0.013	53.84	53.39	65.00	62.50	54.01	53.56	10.99	10.33	1.57	**0.20**
EX-WA-P5	296-207	296-213	**61.08**	633.75	10	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.56	53.42	8.94	8.28	1.64	**0.20**
EX-WA-P6	296-213	296-208	**61.08**	620.62	10	326.40	0.004	0.013	53.24	51.94	61.40	63.60	53.42	52.83	7.98	7.33	1.61	**0.22**
EX-WA-P7	296-208	296-209	**61.08**	628.88	10	34.20	0.004	0.013	51.94	51.80	63.60	63.00	52.83	52.83	10.77	10.83	0.25	**1.07**
EX-WA-P8	296-209	296-201	**3357.89**	6427.38	24	309.40	0.004	0.013	51.80	50.56	63.00	62.00	52.83	51.59	10.17	9.20	4.61	**0.52**
EX-WA-P9	296-201	296-202	**3357.89**	6413.14	24	315.80	0.004	0.013	50.56	49.30	62.00	61.19	51.59	50.77	10.41	9.44	4.60	**0.52**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-AA-P1	294-206 (P)	294-207 (P)	**3110.07**	6028.52	24.00	278.00	0.004	0.013	59.36	58.38	73.50	71.62	60.38	59.40	13.12	12.14	4.31	**0.51**
PR-AA-P2	294-207 (P)	295-201 (P)	**3110.07**	6003.00	24.00	320.40	0.003	0.013	58.38	57.26	71.62	69.20	59.40	58.28	12.22	11.24	4.30	**0.51**
PR-AA-P3	295-201 (P)	295-202 (P)	**3110.07**	5982.68	24.00	293.80	0.003	0.013	57.26	56.24	69.20	67.30	58.28	57.28	10.92	9.94	4.28	**0.51**
PR-AA-P4	295-202 (P)	295-203 (P)	**3203.44**	6012.41	24.00	305.10	0.004	0.013	56.24	55.17	67.30	62.64	57.28	56.21	10.02	9.06	4.33	**0.52**
PR-AA-P5	295-203 (P)	295-207 (P)	**3203.44**	5946.35	24.00	29.20	0.003	0.013	55.17	55.07	62.64	62.42	56.21	56.11	6.43	5.47	4.30	**0.52**
PR-AA-P6	295-207 (P)	295-208 (P)	**3203.44**	6011.14	24.00	119.80	0.004	0.013	55.07	54.65	62.42	61.50	56.11	55.68	6.31	5.35	4.33	**0.52**
PR-AA-P7	295-208 (P)	295-209 (P)	**3203.44**	6079.61	24.00	131.10	0.004	0.013	54.65	54.18	61.50	61.30	55.68	55.24	5.82	4.85	4.37	**0.52**
PR-AA-P8	295-209 (P)	295-204 (P)	**3203.44**	5624.90	24.00	19.50	0.003	0.013	54.18	54.12	61.30	61.50	55.24	55.16	6.06	5.12	4.12	**0.53**
PR-AA-P9	295-204 (P)	295-210 (P)	**3203.44**	6012.26	24.00	111.20	0.004	0.013	54.12	53.73	61.50	61.30	55.16	54.77	6.34	5.38	4.33	**0.52**
PR-AA-P10	295-210 (P)	295-211 (P)	**3203.44**	6020.88	24.00	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.77	54.30	6.53	5.57	4.34	**0.52**
PR-AA-P11	295-211 (P)	295-212 (P)	**3203.44**	6062.16	24.00	58.90	0.004	0.013	53.27	53.06	60.40	60.33	54.30	54.11	6.10	5.13	4.36	**0.51**
PR-AA-P12	295-212 (P)	296-211 (P)	**3203.44**	5948.96	24.00	81.60	0.003	0.013	53.06	52.78	60.33	59.45	54.11	53.84	6.22	5.27	4.30	**0.52**
PR-AA-P13	296-211 (P)	296-212 (P)	**3296.81**	6020.86	24.00	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.84	53.37	5.61	4.67	4.37	**0.53**
PR-AA-P14	296-212 (P)	296-209 (P)	**3296.81**	6040.64	24.00	90.40	0.004	0.013	52.32	52.00	59.45	63.00	53.37	52.96	6.08	5.13	4.38	**0.52**
PR-CR-P1	337-202 (P)	337-201 (P)	**94.00**	7952.27	10.00	5.10	0.654	0.013	44.81	41.45	54.00	54.00	45.01	42.32	8.99	8.36	10.94	**0.24**
PR-CR-P2	337-201 (P)	337-206 (P)	**1147.19**	1789.33	18.00	347.10	0.001	0.013	41.45	40.95	54.00	53.00	42.32	41.56	11.68	11.05	2.39	**0.58**
PR-KR-P1	333-206 (P)	334-201 (P)	**957.91**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
PR-KR-P2	334-201 (P)	334-202 (P)	**1460.66**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
PR-KR-P3	334-202 (P)	335-201 (P)	**1557.58**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
PR-KR-P4	335-201 (P)	335-202 (P)	**1720.26**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
PR-KR-P5	335-202 (P)	336-201 (P)	**1940.67**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
PR-KR-P6	336-201 (P)	336-202 (P)	**2314.89**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.53	10.81	10.18	7.84	**0.58**
PR-KR-P7	336-203 (P)	336-204 (P)	**12.81**	529.77	8.00	335.40	0.010	0.013	49.00	45.80	55.00	56.50	49.08	45.99	5.92	5.33	1.42	**0.12**
PR-KR-P8	336-204 (P)	337-202 (P)	**60.63**	538.33	10.00	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.99	45.01	10.51	9.87	1.46	**0.23**
PR-KR-P9	337-203 (P)	337-201 (P)	**1053.19**	1858.54	18.00	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.77	42.32	10.03	9.34	2.42	**0.54**
PR-KR-P10	337-204 (P)	337-203 (P)	**978.43**	1764.27	18.00	328.50	0.001	0.013	42.52	42.06	52.50	52.80	43.31	42.77	9.19	8.48	2.28	**0.53**
PR-KR-P11	337-208 (P)	337-204 (P)	**915.93**	1963.59	18.00	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.48	43.31	8.92	8.13	2.43	**0.47**
PR-KR-P12	337-205 (P)	337-208 (P)	**915.93**	1686.95	18.00	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.86	43.48	8.34	7.62	2.17	**0.52**
PR-KR-P13	338-201 (P)	337-205 (P)	**915.93**	1765.17	18.00	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.40	43.86	7.10	6.36	2.25	**0.51**
PR-KR-P14	338-202 (P)	338-201 (P)	**549.31**	1758.49	18.00	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.69	44.40	6.31	5.39	1.96	**0.39**
PR-KR-P15	338-203 (P)	Kifer Lift Station	**549.31**	5132.80	12.00	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.65	29.92	18.35	17.82	9.50	**0.47**
PR-KR-P16	338-207 (P)	338-203 (P)	**549.31**	783.86	12.00	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.73	32.65	16.07	15.69	2.41	**0.62**
PR-KR-P17	338-209 (P)	338-207 (P)	**285.50**	828.11	12.00	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.49	33.73	15.11	14.52	2.13	**0.41**
PR-KR-P18	339-201 (P)	338-209 (P)	**246.06**	827.69	12.00	324.70	0.003	0.013	35.05	34.18	49.20	49.60	35.42	34.49	13.78	13.15	2.05	**0.37**
PR-KR-P19	339-202 (P)	339-201 (P)	**194.09**	825.91	12.00	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.35	35.42	11.25	10.58	1.91	**0.33**
PR-LE-P1	265-204 (P)	296-203 (P)	**4079.89**	10360.63	27.00	705.50	0.006	0.013	56.12	52.20	67.83	69.82	57.16	53.18	10.67	9.46	5.46	**0.46**
PR-LE-P2	296-203 (P)	296-202 (P)	**4079.89**	10316.94	27.00	526.40	0.006	0.013	52.20	49.30	69.82	61.19	53.24	50.77	16.58	15.37	5.44	**0.46**
PR-LE-P3	296-202 (P)	305-207 (P)	**7437.78**	9715.82	27.00	401.10	0.005	0.013	49.30	47.34	61.19	60.50	50.77	48.76	10.42	9.64	6.00	**0.65**
PR-LE-P4	305-207 (P)	305-208 (P)	**7437.78**	10306.34	27.00	141.90	0.005	0.013	47.34	46.56	60.50	58.98	48.76	47.98	11.74	10.91	6.29	**0.63**
PR-LE-P5	305-208 (P)	305-209 (P)	**7459.14**	10400.80	27.00	512.60	0.006	0.013	46.56	43.69	58.98	56.98	47.98	45.12	11.00	10.17	6.34	**0.63**
PR-LE-P6	305-209 (P)	336-202 (P)	**7480.50**	10208.66	27.00	324.40	0.005	0.013	43.69	41.94	56.98	57.04	45.12	43.53	11.86	11.04	6.25	**0.64**
PR-LE-P7	336-202 (P)	336-207 (P)	**9798.29**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	43.53	39.65	13.51	12.58	8.20	**0.63**
PR-SC-P1	306-201 (P)	306-202 (P)	**38.92**	982.15	10.00	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.91	53.95	7.99	7.29	1.95	**0.16**
PR-SC-P2	306-202 (P)	306-203 (P)	**56.77**	616.25	10.00	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.95	52.85	8.45	7.79	1.57	**0.20**
PR-SC-P3	306-203 (P)	306-204 (P)	**116.94**	595.86	10.00	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.85	51.77	8.00	7.42	1.89	**0.30**
PR-SC-P4	306-204 (P)	305-205 (P)	**137.81**	595.40	10.00	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.77	50.78	9.03	8.47	1.98	**0.32**
PR-SC-P5	305-205 (P)	305-204 (P)	**212.52**	507.29	10.00	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.78	49.95	8.72	8.27	1.98	**0.46**
PR-SZW-P1	305-206 (P)	305-204 (P)	**39.56**	707.09	10.00	173.20	0.003	0.010	50.13	49.60	60.20	59.40	50.26	49.95	9.94	9.24	1.56	**0.16**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-SZW-P2	305-204 (P)	305-203 (P)	**286.64**	833.08	10.00	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.95	49.72	9.45	8.97	3.09	**0.42**
PR-SZW-P3	305-203 (P)	305-202 (P)	**286.64**	568.20	10.00	209.60	0.003	0.013	49.30	48.60	59.60	59.80	49.72	48.98	9.88	9.47	2.33	**0.50**
PR-SZW-P4	305-202 (P)	305-201 (P)	**286.64**	662.80	10.00	321.40	0.005	0.013	48.60	47.14	59.80	59.70	48.98	47.49	10.82	10.37	2.61	**0.46**
PR-SZW-P5	305-201 (P)	336-201 (P)	**330.43**	1148.49	11.54	324.50	0.004	0.010	47.04	45.82	59.70	57.50	47.40	46.69	12.30	11.70	3.04	**0.37**
PR-UD-P1	302-201 (P)	302-202 (P)	**89.02**	563.74	10.00	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.11	38.40	10.89	10.28	1.68	**0.26**
PR-UD-P2	302-202 (P)	302-203 (P)	**142.12**	567.61	10.00	306.10	0.003	0.013	38.12	37.10	49.00	47.50	38.40	37.44	10.60	10.05	1.93	**0.34**
PR-UD-P3	302-203 (P)	339-203 (P)	**194.09**	566.91	10.00	294.90	0.003	0.013	37.10	36.12	47.50	47.60	37.44	36.41	10.06	9.57	2.10	**0.41**
PR-UD-P4	339-203 (P)	339-202 (P)	**194.09**	975.12	10.00	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.41	36.35	11.19	10.65	3.11	**0.35**
PR-WA-P1	266-210 (P)	266-204 (P)	**26.51**	342.80	8.00	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.40	55.41	11.60	11.06	1.30	**0.19**
PR-WA-P2	266-204 (P)	266-205 (P)	**26.51**	628.19	10.00	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.41	55.17	11.59	10.88	1.27	**0.14**
PR-WA-P3	266-205 (P)	265-206 (P)	**31.81**	622.28	10.00	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.17	54.01	10.83	10.13	1.33	**0.16**
PR-WA-P4	265-206 (P)	296-207 (P)	**56.42**	617.62	10.00	114.10	0.004	0.013	53.84	53.39	65.00	62.50	54.01	53.56	10.99	10.33	1.57	**0.20**
PR-WA-P5	296-207 (P)	296-213 (P)	**61.08**	634.18	10.00	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.56	53.42	8.94	8.28	1.64	**0.20**
PR-WA-P6	296-213 (P)	296-208 (P)	**61.08**	620.91	10.00	326.10	0.004	0.013	53.24	51.94	61.40	63.60	53.42	52.83	7.98	7.33	1.61	**0.22**
PR-WA-P7	296-208 (P)	296-209 (P)	**61.08**	3466.83	17.20	34.30	0.004	0.010	51.94	51.80	63.60	63.00	52.83	52.83	10.77	10.23	1.82	**0.62**
PR-WA-P8	296-209 (P)	296-201 (P)	**3357.89**	6431.76	24.00	309.00	0.004	0.013	51.80	50.56	63.00	62.00	52.83	51.59	10.17	9.20	4.61	**0.52**
PR-WA-P9	296-201 (P)	296-202 (P)	**3357.89**	6424.85	24.00	314.70	0.004	0.013	50.56	49.30	62.00	61.19	51.59	50.77	10.41	9.44	4.61	**0.52**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

APPENDIX E

Potable Water System Demand Calculations

LSAP Housing Expansion Study

Lot[3]	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
3	--	--	96,000	--	--	20,160	14.00
4	--	154,540	--	--	--	31,217	21.68
5	--	602,173	--	--	--	121,639	84.47
6	--	--	--	--	--	--	--
7	520	7,400	--	--	--	83,863	58.24
8	262	2,500	--	--	--	42,006	29.17
9	320	2,500	--	--	--	51,193	35.55
10	125	--	--	--	--	19,800	13.75
11	--	--	19,990	--	--	4,198	2.92
12	--	--	19,512	--	--	4,098	2.85
13	--	--	16,830	--	--	3,534	2.45
14	130	--	--	--	--	20,592	14.30
15	111	--	--	--	--	17,582	12.21
16	--	--	11,055	--	--	2,322	1.61
17	168	--	--	--	--	26,611	18.48
18	--	--	19,463	--	--	4,087	2.84
19	109	--	--	--	--	17,266	11.99
20	126	1,000	--	--	--	20,160	14.00
21	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--
25	741	1,500	--	--	--	117,677	81.72
26	16	--	--	--	--	2,534	1.76
27	16	--	--	--	--	--	--
28	83	2,000	--	--	--	13,551	9.41
29	18	2,000	--	--	--	3,255	2.26
30	52	2,000	--	--	--	8,641	6.00
31	13	1,000	--	--	--	2,261	1.57
32	--	8,156	--	--	--	1,648	1.14
33	--	--	--	7,800	--	4,680	3.25
34	--	136,438	--	--	--	27,560	19.14
35	--	152,758	--	--	--	30,857	21.43
36	--	--	61,758	--	--	12,969	9.01
37	--	--	147,842	--	--	31,047	21.56
38	--	136,409	39,148	--	--	35,776	24.84
39	1,458	--	--	--	--	230,947	160.38
40	634	--	--	--	--	100,426	69.74
41	338	--	--	--	--	53,539	37.18
42	--	--	78,000	--	--	16,380	11.38
43	383	--	--	--	--	60,667	42.13
44	--	--	--	--	--	--	--
45	--	--	105,000	--	--	22,050	15.31

Appendix E
Lawrence Station Area Plan
Potable Water System Demand Calculations

Lot[3]	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
46	--	--	--	--	--	--	--
47	328	--	--	--	--	51,955	36.08
48	--	--	--	--	--	--	--
49	--	--	--	--	159,637	532	0.37
50	--	--	--	--	--	--	--
51	--	--	--	--	--	--	--
52	--	--	--	--	--	--	--
Subtotal	5,935	1,212,374	614,598	7,800	159,637	1,319,281	916.17

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
1 & 2	--	351,000	--	13,000	--	78,702	54.65
53	--	--	831,000	16,000	--	184,110	127.85
Subtotal	--	351,000	831,000	29,000	--	262,812	182.51

Note:

1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.
2. Residential units within Lot 27 existed prior to the LSAP and have not been included within the total residential numbers.
3. Lots 11, 12, 13, 16, 18, 35, 36, 37, 42, and 45 are existing parcels within the LSAP area expected to remain.

Abbreviations:

Symbol	Description
GPD	gallons per day
GPM	gallons per minute
LPW	low pressure water
sf	square footage

APPENDIX F

Sanitary Sewer System Demand Calculations

Appendix F
Lawrence Station Area Plan
Sanitary Sewer System Demand Calculations

LSAP Housing Expansion Study

Lot[3]	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
3	--	--	96,000	--	--	19,152	13.30	39.90	48.55
4	--	154,540	--	--	--	19,086	13.25	39.76	48.38
5	--	602,173	--	--	--	74,368	51.64	129.11	162.68
6	--	--	--	--	--	--	--	--	--
7	520	7,400	--	--	--	60,688	42.14	115.90	143.29
8	262	2,500	--	--	--	30,426	21.13	63.39	77.12
9	320	2,500	--	--	--	37,093	25.76	70.84	87.58
10	125	--	--	--	--	14,369	9.98	32.43	38.92
11	--	--	19,990	--	--	3,988	2.77	9.69	11.49
12	--	--	19,512	--	--	3,893	2.70	9.46	11.22
13	--	--	16,830	--	--	3,358	2.33	8.16	9.68
14	130	--	--	--	--	14,944	10.38	33.73	40.47
15	111	--	--	--	--	12,759	8.86	28.80	34.56
16	--	--	11,055	--	--	2,205	1.53	5.36	6.36
17	168	--	--	--	--	19,312	13.41	40.23	48.95
18	--	--	19,463	--	--	3,883	2.70	9.44	11.19
19	109	--	--	--	--	12,530	8.70	28.28	33.93
20	126	1,000	--	--	--	14,607	10.14	32.97	39.56
21	--	--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--	--
25	741	1,500	--	--	--	85,363	59.28	148.20	186.73
26	16	--	--	--	--	1,839	1.28	4.47	5.30
27	16	--	--	--	--	--	--	--	--
28	83	2,000	--	--	--	9,788	6.80	22.09	26.51
29	18	2,000	--	--	--	2,316	1.61	5.63	6.67
30	52	2,000	--	--	--	6,224	4.32	15.13	17.94
31	13	1,000	--	--	--	1,618	1.12	3.93	4.66
32	--	8,156	--	--	--	1,007	0.70	2.45	2.90
33	--	--	--	7,800	--	4,446	3.09	10.81	12.81
34	--	136,438	--	--	--	16,850	11.70	35.10	42.71
35	--	152,758	--	--	--	18,866	13.10	39.30	47.82
36	--	--	61,758	--	--	12,321	8.56	27.81	33.37
37	--	--	147,842	--	--	29,494	20.48	61.45	74.76
38	--	136,409	39,148	--	--	24,657	17.12	51.37	62.50
39	1,458	--	--	--	--	167,597	116.39	290.97	366.62
40	634	--	--	--	--	72,878	50.61	139.18	172.07
41	338	--	--	--	--	38,853	26.98	74.20	91.74

Appendix F
Lawrence Station Area Plan
Sanitary Sewer System Demand Calculations

Lot[3]	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
42	--	--	78,000	--	--	15,561	10.81	32.42	39.44
43	383	--	--	--	--	44,026	30.57	84.08	103.95
44	--	--	--	--	--	--	--	--	--
45	--	--	105,000	--	--	20,948	14.55	43.64	53.10
46	--	--	--	--	--	--	--	--	--
47	328	--	--	--	--	37,704	26.18	72.00	89.02
48	--	--	--	--	--	--	--	--	--
49	--	--	--	--	159,637	506	0.35	1.23	1.46
50	--	--	--	--	--	--	--	--	--
51	--	--	--	--	--	--	--	--	--
52	--	--	--	--	--	--	--	--	--
Subtotal	5,935	1,212,374	614,598	7,800	159,637	959,520	666.33	1,862.89	2,296.00

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
1 & 2	--	351,000	--	13,000	--	50,759	35.25	96.93	119.85
53	--	--	831,000	16,000	--	174,905	121.46	303.65	382.60
Subtotal	--	351,000	831,000	29,000	--	225,663	156.71	400.59	502.45

Note:

1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.
2. Residential units within Lot 27 existed prior to the LSAP and have not been included within the total residential numbers.
3. Lots 11, 12, 13, 16, 18, 35, 36, 37, 42, and 45 are existing parcels within the LSAP area expected to remain.

Abbreviations:

Symbol	Description
GPD	gallons per day
GPM	gallons per minute
LPW	low pressure water
PDWF	peak dry weather flow
PWWF	peak wet weather flow
sf	square footage

APPENDIX G

Cost Estimate for City Sanitary Sewer System

BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, California 94065

APPENDIX G
ESTIMATE OF CONSTRUCTION
COSTS FOR CITY SANITARY SEWER UPGRADES

LAWRENCE EXPRESSWAY SANITARY SEWER IMPROVEMENTS					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST[5]	TOTAL COST
1	Replace existing 27" VCP main with proposed 30" PVC SS main	671	LF	$2,000.00	$1,342,000
				LAWRENCE EXPRESSWAY SUBTOTAL	**$1,342,000**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF LAWRENCE EXPRESSWAY SUBTOTAL)			
ITEM	DESCRIPTION	QUANTITY	TOTAL COST
1	Construction Fees	25%	$335,500
2	Design Fees	20%	$268,400
3	Inspection Fees	10%	$134,200
4	Miscellaneous Costs	5%	$67,100
5	City Administration Fees	5%	$67,100
		ADDITIONAL COSTS SUBTOTAL	**$872,300**
		LAWRENCE EXPRESSWAY TOTAL	**$2,214,300**

SAN ZENO WAY SANITARY SEWER IMPROVEMENTS					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Replace existing 10" VCP main with proposed 12" PVC SS main	324	LF	$700.00	$226,800
				SAN ZENO WAY SUBTOTAL	**$226,800**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF SAN ZENO WAY SUBTOTAL)			
ITEM	DESCRIPTION	QUANTITY	TOTAL COST
1	Construction Fees	25%	$56,700
2	Design Fees	20%	$45,360
3	Inspection Fees	10%	$22,680
4	Miscellaneous Costs	5%	$11,340
5	City Administration Fees	5%	$11,340
		ADDITIONAL COSTS SUBTOTAL	**$147,420**
		SAN ZENO WAY TOTAL	**$374,220**

WILLOW AVENUE SANITARY SEWER IMPROVEMENTS					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Replace existing 10" VCP main with proposed 18" PVC SS main	69	LF	$900.00	$62,100
				WILLOW AVENUE SUBTOTAL	**$62,100**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF WILLOW AVENUE SUBTOTAL)			
ITEM	DESCRIPTION	QUANTITY	TOTAL COST
1	Construction Fees	25%	$15,525
2	Design Fees	20%	$12,420
3	Inspection Fees	10%	$6,210
4	Miscellaneous Costs	5%	$3,105
5	City Administration Fees	5%	$3,105
		ADDITIONAL COSTS SUBTOTAL	**$40,365**
		WILLOW AVENUE TOTAL	**$102,465**

LSAP HOUSING TOTAL	**$2,690,985**

Abbreviations:

Symbol	Description
PVC	polyvinyl chloride
VCP	vitrified clay pipe

Notes:

1. For location of Sanitary Sewer improvements, refer to Figure 3.3 - LSAP Proposed Sanitary Sewer Pipe Sizing.
2. This cost estimate does not include the costs associated with the installation of intermediary manholes for segments of sanitary sewer main that violate City requirements for running length of sewer mains between manholes.
3. Unit cost values are derived from 2019 Downtown Specific Plan Amendments Utility Impact Study.
4. Unit cost for the sewer main upgrades includes cost for mobilization, demobilization, traffic control, shoring, trenching, manholes, laterals, bypass pumping, offhaul, and disposal.
5. Unit cost for sewer main upgrade within Lawrence Expressway has been adjusted to account higher anticipated costs for increased pavement thickness, expressway traffic control, bypass pumping, and tunneling in addition to the costs listed in Note 4.
6. This cost estimate is approximate and may not be representative of actual construction costs.

APPENDIX D | INTUITIVE CORPORATE CAMPUS INFRASTRUCTURE IMPACT STUDY

LAWRENCE STATION AREA PLAN

PROPOSED INTUITIVE SURGICAL CORPORATE CAMPUS PROJECT AT 932, 945, 950, AND 955 KIFER ROAD (OFFICE EXPANSION BUILDOUT) INFRASTRUCTURE IMPACT STUDY

June 22, 2020

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

255 Shoreline Drive, Suite 200
Redwood City, CA 94065
650.482.6300

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APPENDICES

Appendix A – Block Book Pages for Lawrence Station Area Plan

Appendix B – LSAP Parcels with Development Assumptions

Appendix C – LSAP Potable Water Model Reports

Appendix D – LSAP Sewer Model Reports

Appendix E – Potable Water System Demand Calculations

Appendix F – Sanitary Sewer System Demand Calculations

SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Project Overview

The proposed Lawrence Station Area Plan (LSAP) Amendment Project (Project) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California and is approximately 252.09 acres. For the purposes of the infrastructure studies, the LSAP Update project is divided into two study areas: the Housing Expansion Study Area and the Proposed Intuitive Surgical Corporate Campus Project at 932, 945, 950, and 955 Kifer Road (herein referred to as the Office Expansion) Study Area. This Infrastructure Study will address the Office Expansion Study Area which composes of two parcels south of Kifer Road and one parcel north of Kifer Road. The north parcel is bounded by Central Expressway to the north, Texas Instruments campus to the east, Kifer Road to the south, and numerous commercial offices to the west. The south parcel is bounded by Kifer Road to the north, the proposed LSAP Housing Expansion to the east, railroad right of way (ROW) to the south, and two large commercial offices to the west. The project site is located in the far eastern area of the City of Sunnyvale northwest of the Lawrence Caltrain station.

The Office Expansion Study Area site is approximately 32.39 acres of industrial land owned by Intuitive Surgical, Inc. (ISI) that is proposed for redevelopment as office/research and development.

The Housing Expansion Study Area is approximately 219.70 acres encompassing existing developments, railroad ROW, and public ROW. The residential LSAP is bounded by the City of Santa Clara to the north and east, Reed Avenue, Aster Avenue, and the railroad ROW to the south, and the Intuitive Surgical offices to the west. Please refer to the Housing Expansion Buildout Infrastructure Impact Study for the infrastructure analysis associated with the proposed increase of allowable housing potential within the LSAP.

Figure 1.1 - Project Location - illustrates the regional location of the Project.



Figure 1.2 - Project Site and Context - illustrates the Study Area Boundaries and the location of the Project within the City.



This study will discuss the office expansion located across three parcels. The Project includes two office/R&D buildings, a parking structure, an amenities building, and two central utility plants. Existing utility infrastructure requiring upgrades to serve the Project will be identified in this study.

1.2 Lawrence Station

1.2.1 Existing Conditions and Land Use

Existing conditions and Land Uses within the 32.39 acre office expansion LSAP includes an office/research building, an industrial building, a fitness center, an equipment enclosure, and a recreational park for employees. The ISI project site is currently designated for industrial uses in the City's General Plan.

1.2.2 Proposed ISI Project Component of the LSAP Update

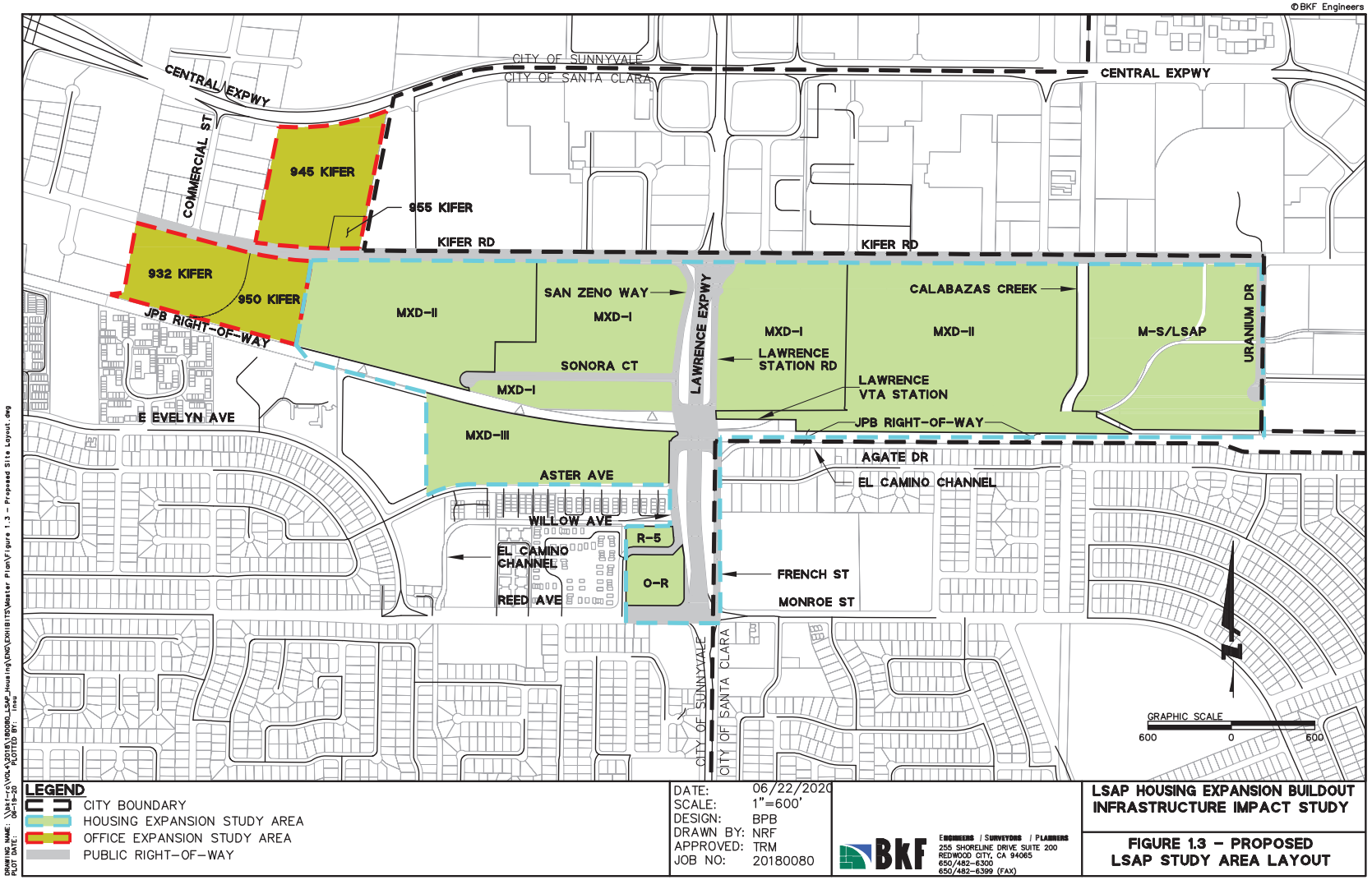
The LSAP Update consists of two primary components: (1) modifications to the adopted LSAP (i.e. an increase in housing potential within the LSAP, expansion of the western LSAP boundary, and a Sense of Place Plan that would function as a policy document for LSAP area circulation, open space, and streetscape improvements) and (2) an office/research development (R&D) and manufacturing redevelopment project in the western LSAP boundary expansion area for the ISI project. This infrastructure study analyzes the second component of the LSAP update: the ISI project. A detailed breakdown of the land uses are shown in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). The proposed LSAP layout is shown in Figure 1.3 – Proposed Site Layout.

1.3 Project Datum

All elevations referenced herein are based on the following:

- Vertical datum used in the City of Sunnyvale's Utility and GIS Maps.

- Record drawings provided by the City for Aster Avenue and Willow Avenue
- Manhole survey data provided by the City for Lawrence Expressway


© BKF Engineers
CITY OF SUNNYVALE
CITY OF SANTA CLARA
CENTRAL EXPWY
CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
955 KIFER
KIFER RD
KIFER RD
932 KIFER
950 KIFER
JPB RIGHT-OF-WAY
MXD-II
SAN ZENO WAY
MXD-I
LAWRENCE EXPWY
MXD-I
CALABAZAS CREEK
MXD-II
M-S/LSAP
URANIUM DR
LAWRENCE STATION RD
SONORA CT
MXD-I
LAWRENCE VTA STATION
E EVELYN AVE
MXD-III
JPB RIGHT-OF-WAY
AGATE DR
EL CAMINO CHANNEL
ASTER AVE
WILLOW AVE
R-5
EL CAMINO CHANNEL
O-R
FRENCH ST
REED AVE
MONROE ST
CITY OF SUNNYVALE
CITY OF SANTA CLARA
GRAPHIC SCALE
600
0
600
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
PUBLIC RIGHT-OF-WAY
DATE: 06/22/2020
SCALE: 1"=600'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE IMPACT STUDY
FIGURE 1.3 – PROPOSED LSAP STUDY AREA LAYOUT
DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\DWG\EXHIBITS\Master Plan\Figure 1.3 – Proposed Site Layout.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau

SECTION 2: POTABLE WATER SYSTEM

2.1 Potable Water System Design Criteria

The design criteria used for the office expansion development of the potable water model is based upon established industry operations standards and regulatory agency requirements. The potable water system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. Since the City of Sunnyvale does not have written standards for water generation, this report will use Redwood City's Design Standards to estimate project water demands. The intent of this study is to identify which existing City water mains will need to be upgraded in order to provide adequate water supply to the LSAP. All existing water mains are located within the City Right-of-Way.

The design criteria are dependent on the demand scenario. Table 2.1 – Potable Water System Demand and Peaking Factor presents the potable water system demand and peaking factor for the demand scenario. Assumed peaking factors for max day demand and peak hour demand scenarios are based on correspondence between BKF and the City of Sunnyvale.

Table 2.1
Potable Water System Demand and Peaking Factor

Parameter	Value
Average Day Demand (ADD)	262,812 gpd
Fire Flow Demands (FF)	4,500 gpm
Maximum Day Demand (MDD)	MDD = 2.0 ADD
Peak Hour Demand (PHD)	PHD = 3.0 ADD

Notes:
1. Fire flow demand based on an assumed R-2 Occupancy type building and construction Type III-A, assuming 25% fire flow reduction for sprinkling.
2. gpd = gallons per day
3. gpm = gallons per minute

Table 2.2 – Potable Water System Design Criteria presents the potable water system design criteria.

Table 2.2
Potable Water System Design Criteria

Parameter	Value
Pipe size	Pipe diameters of 8, 10, 12, and 16 inches shall be used for all distribution and feeder mains.
Pipe Material	For water mains 12-inches and smaller shall be C900 DR14 PVC pipe or AWWA C-151/A21.51 ductile iron pipe (DIP). Water mains larger than 12-inches shall be C905 DR14 PVC or AWWA C-151/A21.51 DIP.
Hazen Williams C-value for recommended pipes	140 for DIP, 150 for PVC
Maximum static pressure	120 psi
Maximum velocity during PHD	7 fps
Maximum velocity during MDD+FF	15 fps
Minimum system pressure during MDD+FF	20 psi

Notes:
fps = feet per second
psi = pounds per square inch

2.2 Potable Water System Layout

Potable water is supplied to the LSAP by the City of Sunnyvale through an existing 12-inch diameter cast iron pipe (CIP) in Kifer Road. Commercial Street also contains an existing 8-inch diameter CIP. Existing potable water system layout is shown on Figure 2.1 – LSAP Existing Potable Water System.

2.3 Upgraded Potable Water System

2.3.1 Proposed Water Demand Factors

The potable water demand factors used for the Project's various land uses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD). The total estimated water

demands for the Project land uses are shown on Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). Water demands are derived from Redwood City's Design Standards.

Table 2.3
LSAP Potable Water Demand Factors (ADD)

Land Use	Indoor Potable Water Demand Factors (ADD)	Outdoor Potable Water Demand Factors (ADD)	Total Water Demand (ADD)
Office/R&D	0.13 gpd/sf	0.072 gpd/sf	0.202 gpd/sf
Industrial	0.21 gpd/sf	0 gpd/sf	0.21 gpd/sf
Restaurant	30 gpd/seat	0 gpd/seat	30 gpd/seat

Note:
sf = square feet

2.3.2 Model Results Discussion

The existing potable water system is sufficient to supply the potable water demands as well as provide fire flow to the site. Under the scenario of max day demand and fire flow, the water model analysis determined that the flow demand would be at its highest of any scenario at 4,820 gpm as seen in Appendix C-3 – Model Scenario 3: Max Day Demand + Fire Flow. However, the existing potable water system is able to provide a flow of 6,000 gpm, which is well above the necessary flow to meet the demands in this scenario. Refer to Appendix C-3 – Model Scenario 3: Max Day Demand + Fire Flow for water model results. The overall proposed ISI development indicates that no improvements are required for the City's potable water system.

2.4 Potable Water System Model Water Demands

2.4.1 Sources of Land Use Water Demand Data

Potable water demand factors for the model analyses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and were applied to the project program to develop the project potable water demand total. Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) provides water demands by land use.

See Appendix E – Potable Water System Demand Calculations, for model demand calculations on a block by block basis. Total project development will not exceed the demands presented in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD).

2.4.2 Average Day Demand

The demand factors presented in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and the demand summaries presented in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) reflect average day demand (ADD) for the Office Expansion Study.

Table 2.4
Office Expansion Study LSAP Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Office/R&D	351,000	sf	0.202	70,902
Industrial	831,000	sf	0.21	174,510
Restaurant[1,3]	580	seat	30	17,400
			Total	262,812

Notes:
1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant space (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:
$$(29{,}000\ sf \times 0.5) \times (\frac{4\ seats}{100\ sf}) = 580\ seats$$
2. Block by block water demand calculations shown in Appendix E – Potable Water System Demand Calculations.
3. Restaurant is defined as employee amenity space.

2.4.3 Maximum Day Demand

Maximum Day Demand (MDD) represents the maximum volume of water used in a 24-hour period for the entire year. A water system is typically evaluated under a maximum day plus fire flow demand condition as this condition allows the system to be stressed at a higher demand rate to ascertain if pipeline carrying capacities are adequate in a fire emergency. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 2 was applied to ADD.

2.4.4 Peak Hour Demand

Peak Hour Demand (PHD) represents the highest hourly demand for the entire system, and simulates the highest flow rate expected. To determine the PHD, a peaking factor was applied to increase the ADD. Peaking factors represent the increase above ADD and are a statistical concept typically obtained from historical data. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 3 was applied to ADD.

2.4.5 Fire Flow Demand

The fire flow (FF) demand is assumed to be 4,500 gallons per minute (gpm) as noted in correspondence between the City of Sunnyvale, Ascent Environmental, and BKF Engineers.

2.5 Potable Water System Model Boundary Conditions

The recommended potable water system is modeled based on calibrated boundary conditions and fire hydrant flow data received from the City completed for the LSAP Project. Since the LSAP Project is redeveloping existing lots, the recommended water model is analyzing existing City water mains and identifying which water mains will need to be upgraded in order to provide adequate water supply for the redevelopment.

2.6 Potable Water System Model Scenario

The LSAP water model was created in Bentley Water CAD V8i SELECT series 1. A series of model scenarios were created to reflect the range of demand usage patterns and confirm conformance to the Potable Water System Design Criteria outline in Table 2.2 – Potable Water System Design Criteria. Three model runs are prepared for the ISI Project and are shown in Table 2.5 – LSAP Project Model Runs – Office Expansion Study.

Table 2.5
LSAP Project Model Runs – Office Expansion Study

Run	Description
1	Static Pressures
2	Peak Hour Demand
3	Maximum Day Demand + Fire Flow

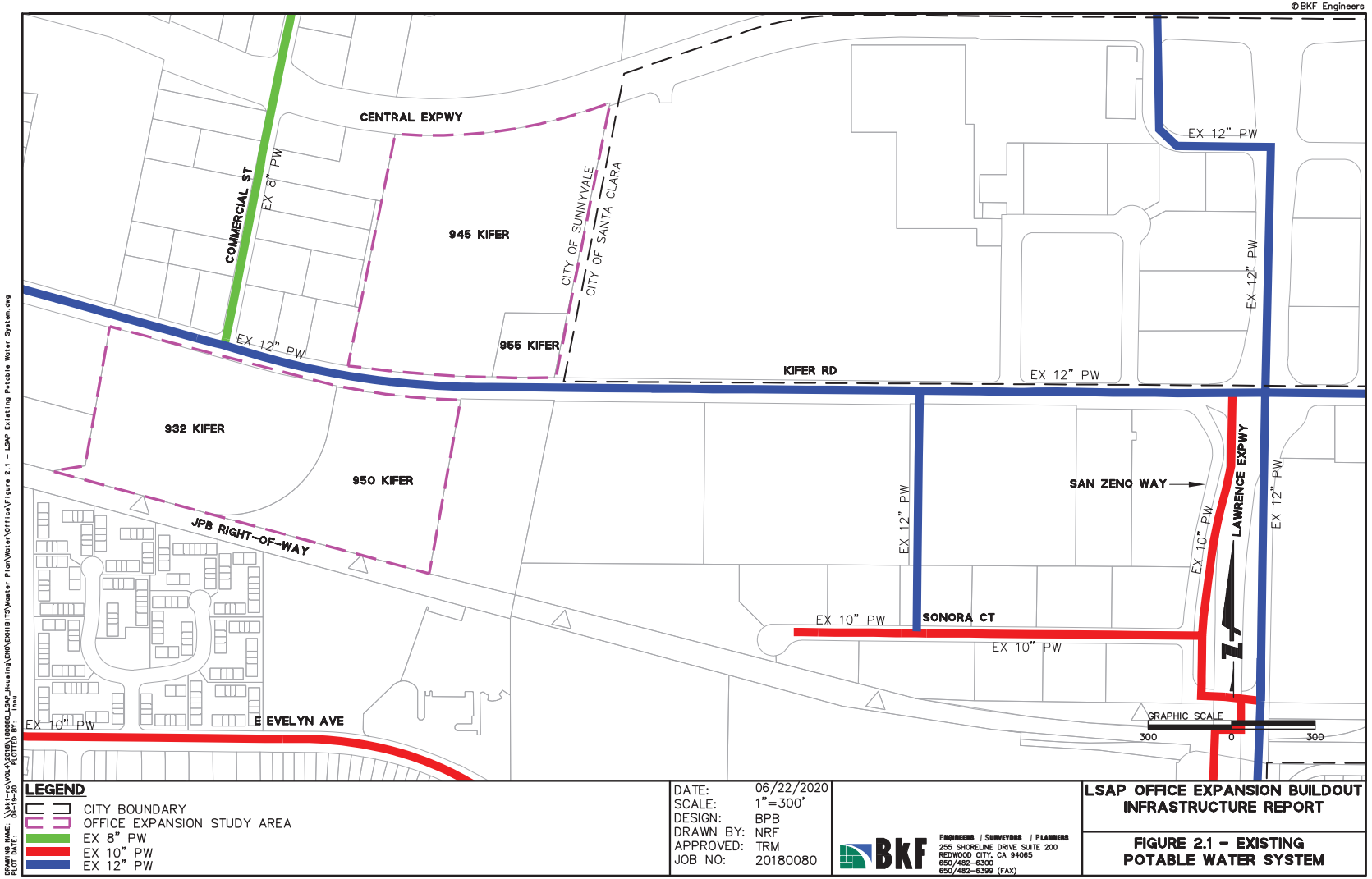
See Appendix C – LSAP Potable Water Model Reports for model run results.

2.7 Potable Water System Recommendations

The existing potable water system, as shown in Appendix C – LSAP Potable Water Model Reports, is designed to meet the design criteria outlined in Table 2.2 – Potable Water System Design Criteria. Table 2.6 – Potable Water System Results for Office Expansion Study summarizes the pressure and velocity results for the referenced model scenarios listed in Table 2.5 – LSAP Project Model Runs – Office Expansion Study. Refer to Appendix C – LSAP Potable Water Demand Results for detailed results of model scenarios. In conclusion, no upgrades to the existing potable water system are required since the water model reflects the system being adequately supplied during maximum daily demand plus fire flow. A water supply analysis memorandum prepared by Ascent Environmental will follow this report and will similarly state that the existing potable water system is sufficient to meet proposed water and fire flow demands.

Table 2.6
Potable Water System Results for Office Expansion Study

Parameter	Requirement	Minimum	Maximum
Static ADD Pressure (psi)	120 max	75	77
PHD Velocity (fps)	7 max	-	1.73
MDD+FF Pressure (calculated system lower limit at total flow available) (psi)	20 min	73	-
MDD+FF Velocity (fps)	15 max	-	10.40


©BKF Engineers
CENTRAL EXPWY
COMMERCIAL ST
EX 8" PW
945 KIFER
CITY OF SUNNYVALE
CITY OF SANTA CLARA
EX 12" PW
955 KIFER
KIFER RD
EX 12" PW
EX 12" PW
EX 12" PW
932 KIFER
950 KIFER
JPB RIGHT-OF-WAY
SAN ZENO WAY
EX 12" PW
EX 10" PW
LAWRENCE EXPWY
EX 12" PW
EX 10" PW
SONORA CT
EX 10" PW
EX 10" PW
E EVELYN AVE
GRAPHIC SCALE
300
0
300
LEGEND
CITY BOUNDARY
OFFICE EXPANSION STUDY AREA
EX 8" PW
EX 10" PW
EX 12" PW
DATE: 06/22/2020
SCALE: 1"=300'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS | SURVEYORS | PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 2.1 - EXISTING POTABLE WATER SYSTEM
DRAWING NAME: \\bkf-cvol\LA\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Water\Office\Figure 2.1 - LSAP Existing Potable Water System.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau

SECTION 3: SANITARY SEWER SYSTEM

3.1 Sanitary Sewer System Design Criteria

The design criteria used for the office expansion development of the sanitary sewer model is based upon established industry operations standards and regulatory agency requirements. The sanitary sewer system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. At certain locations within the project area, City design guidelines were supplemented with updated pipe slope and invert information provided by the City. Sanitary sewer generation is assumed to be 95% of indoor potable water demands. This infrastructure study will identify which existing City sewer mains will need to be upgraded in order to support the anticipated sewer flows from the development within Office Expansion Study Area. All existing sewer mains are located within the City ROW. The pipe material of existing sewer mains is vitrified clay pipe (VCP). The design criteria are dependent on the demand scenario. Table 3.1 – Sanitary Sewer System Design Criteria presents the sanitary sewer system design criteria based on the supplemental information from the City.

Table 3.1
Sanitary Sewer System Design Criteria

Parameter	Value
Minimum pipe size	8-inch inside diameter
Pipe Material	PVC SDR-26 or better
Manning's coefficient, n, for recommended PVC pipes	0.01
Minimum Slope	0.5% (0.005 feet/feet) for sewer diameters 8-inches and smaller, 0.4% (0.004 feet/feet) for sewer diameters 10-inches and larger.
Maximum Slope	14.0% (0.14 feet/feet)
PWWF Maximum Pipe Flow Depth Ratio, *d/D*	0.5 for sewer diameters 10-inches and smaller, 0.75 for sewer diameters 12-inches and larger
Minimum Depth of Cover	5 feet below finished grade
Sewer Generation	95% of indoor potable water demand

Notes:
ADWF = Average Dry Weather Flow
PDWF = Peak Dry Weather Flow
PDWF = Peak Wet Weather Flow
d/D = ratio of depth of flow (*d*) to the pipe inside diameter (*D*)
fps = feet per second
PWWF = Peak Wet Weather Flow

Four flow conditions were analyzed:

1. ADWF in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. PWWF in Existing City Sewer System
4. PWWF in Recommended City Sewer System

The ADWF is based on the potable water average daily demand described in Section 2.4.2. To account for existing flows entering the project area from other areas of the City, existing sewer flows collected from flow monitoring sites at Lawrence Road north of Warburton Avenue, Kifer Road west of Lawrence Expressway, and Aster Avenue west of Willow Avenue were incorporated into the sanitary sewer model analysis. Existing sewer flow data collected from the flow monitoring cites were received from the City on February 6, 2020. According to the City of

Sunnyvale's Sanitary Sewer Systems Design Standards, the PDWF peaking factor is dependent upon ADWF. We have assumed a PDWF peaking factor that varies between 2.5 and 2.75 which is based on individual parcel demands. PWWF is based on PDWF and a design inflow and infiltration rate based on a 10-year storm event that is 65% of the ADWF. Table 3.2 – Sanitary Sewer System Peaking Factor summarizes the peaking factor to achieve PWWF based on the supplemental information from the City.

Table 3.2
Sanitary Sewer System Peaking Factor

Parameter	Value
Average Dry Weather Flow	225,663 gpd
PDWF[1]	PDWF = (varies between 2.5 and 2.75) * ADWF
PWWF	PWWF = ADWF * (PDWF peaking factor + 0.65)

Note:
PDWF peaking factor is dependent upon ADWF for each parcel.

3.2 Sanitary Sewer Collection System

3.2.1 Existing Sanitary Sewer Collection System

The existing sanitary sewer collection system within the vicinity of the LSAP consists of sewer mains that vary in size between 8-inches to 18-inches. Pipe material of the existing sewer mains is VCP. The existing sanitary sewer system within the LSAP boundary consists of a single drainage area. Sanitary sewer flows generally drain by gravity and ultimately drain to the existing 27-inch sanitary sewer main in Lawrence Expressway. All existing sewer mains are assumed to have adequate slope and that the pipe velocity can meet the minimum 2 fps. For 8-inch pipes, pipe slope was assumed to be 0.4%. Additional record drawings, manhole survey data, and construction documents were provided by the City to update pipe invert and slope information used in this sewer analysis model. Existing sanitary sewer system layout is shown on Figure 3.1 – LSAP Existing Sanitary Sewer System and existing manholes shown on Figure 3.2 – LSAP Existing Sanitary Sewer Manholes.

3.3 Sanitary Sewer System Model Sewer Flows

3.3.1 Land Use Sewer Generation Data

The sanitary sewer flows used are based on the indoor potable water for each land use. Outdoor water demands are not included in sanitary sewer flows because outdoor drains connect to the storm drain system.

3.3.2 Average Dry Weather Flow

The sanitary sewer ADWF is intended to be representative of the average day sanitary sewer generation. The sanitary sewer ADWF is a function of the indoor water use ADD. Table 3.3 – Office Expansion Study LSAP Sanitary Sewer Demand Summary represents indoor water use ADD for each land use shown in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). The sanitary sewer ADWF is based on 95% of the indoor potable water ADD. Total sewer demand use for each development is detailed in Appendix F – Sanitary Sewer System Demand Calculations. Sewer generation (gpm) that was calculated for each parcel was applied to each sewer line in the street that was adjacent to that particular parcel. This allows an even distribution of sewer generated for a particular parcel to account for existing sanitary sewer lines in the street.

Table 3.3
Office Expansion Study LSAP Sanitary Sewer Demand Summary

Land Use	Number	Unit	Indoor Domestic Water Demand (gpd)	Sanitary Sewer Demand (gpd)
Office/R&D	351,000	sf	45,630	43,349
Industrial	831,000	sf	174,510	165,784
Restaurant[1,2]	580	seat	17,400	16,530
Total	-	-	237,540	225,663

Notes:
1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:
$$(29{,}000\ sf \times 0.5) \times (\frac{4\ seats}{100\ sf}) = 580\ seats$$
2. Restaurant is defined as employee amenity space.

3.3.3 Peak Dry Weather Flow (PDWF)

The sanitary sewer PDWF is the highest sanitary sewer generation during the day due to diurnal peaks associated with higher water usage in the morning and early evening hours. PDWF is determined by applying a peaking factor to ADWF. City of Sunnyvale has varying peaking factors for PDWF which is dependent upon ADWF for each parcel. Peaking factors for the LSAP vary between 2.5 and 2.75.

3.3.4 Peak Wet Weather Flow (PWWF)

The sanitary sewer PWWF incorporates infiltration and inflow rate at 65% of the ADWF. This rate is added to the PDWF peaking factor.

Inflow is surface water that enters the wastewater system from yards, roof drains, downspouts, storm drain cross connections, or through manhole covers due to overland flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow typically occurs during heavy storm events or prolonged periods of precipitation.

Infiltration is groundwater that enters sewer facilities such as pipelines, laterals, and manholes through holes, breaks, joint/connection failures, and other openings. Infiltration is directly correlated to the total amount of piping and appurtenances in the ground. Infiltration quantities vary due to seasonal variation in the groundwater levels influenced by storm events, surface and soil conditions, condition of sanitary sewer systems, and type of pipe joints. The highest infiltration flows are typically observed following significant storm events and during the winter or peak precipitation months, when groundwater levels are high.

3.4 Sanitary Sewer Flow Distribution

Each parcel's total sanitary sewer generation was determined by reviewing the planned parcel land use and applying applicable land use sanitary sewer generation rate to it. The parcel land use summary is included in Appendix F – Sanitary Sewer System Demand Calculations for reference.

Each parcel's total sanitary sewer flow was divided equally amongst the sanitary sewer manholes bordering the parcel as shown in Figure 3.2 – Existing Sanitary Sewer Manholes. The parcel flow entering a manhole represents a sanitary sewer lateral point of connection.

3.5 Hydraulic Grade Line Considerations

The analysis of the sanitary sewer system is assumed to be a free outfall condition.

3.6 Sanitary Sewer Boundary Conditions

In addition to the flow monitoring survey data provided by the City, the recommended sanitary sewer system is modeled based on boundary conditions taken from Technical Memorandum 7 attached to the City of Sunnyvale's 2015 Wastewater Collection System Master Plan. Since the LSAP Project is redeveloping existing lots, the recommended sewer model is analyzing existing City sewer mains and identifying which sewer mains will need to be upgraded in order to abide by City sanitary sewer standards.

3.7 Model Scenario Results and Analysis

The LSAP sanitary sewer model was created in Bentley StormCAD V8i SELECT series 5. The following sanitary sewer model flow conditions were developed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

Sanitary sewer model inside diameters were based on JM Eagle PVC Pipe Size for SDR 26 (160 psi).

3.7.1 Pipe Diameter

The sewer systems were modelled with the inside pipe diameters. Pipe diameters were reviewed based on the d/D exceeding the allowable depth of flow of 0.50 for pipe sizes 10-inches and smaller, and 0.75 for pipe sizes greater than 12-inches per the supplemental information from the City.

3.7.2 Flow Velocity

The flow velocities through the pipes were calculated using the Manning's equation. The Manning's equation calculates the flow velocities using the pipe's roughness coefficient, the hydraulic radius, and the slope of the pipe.

3.7.2.1 Average Dry Weather Flow (ADWF)

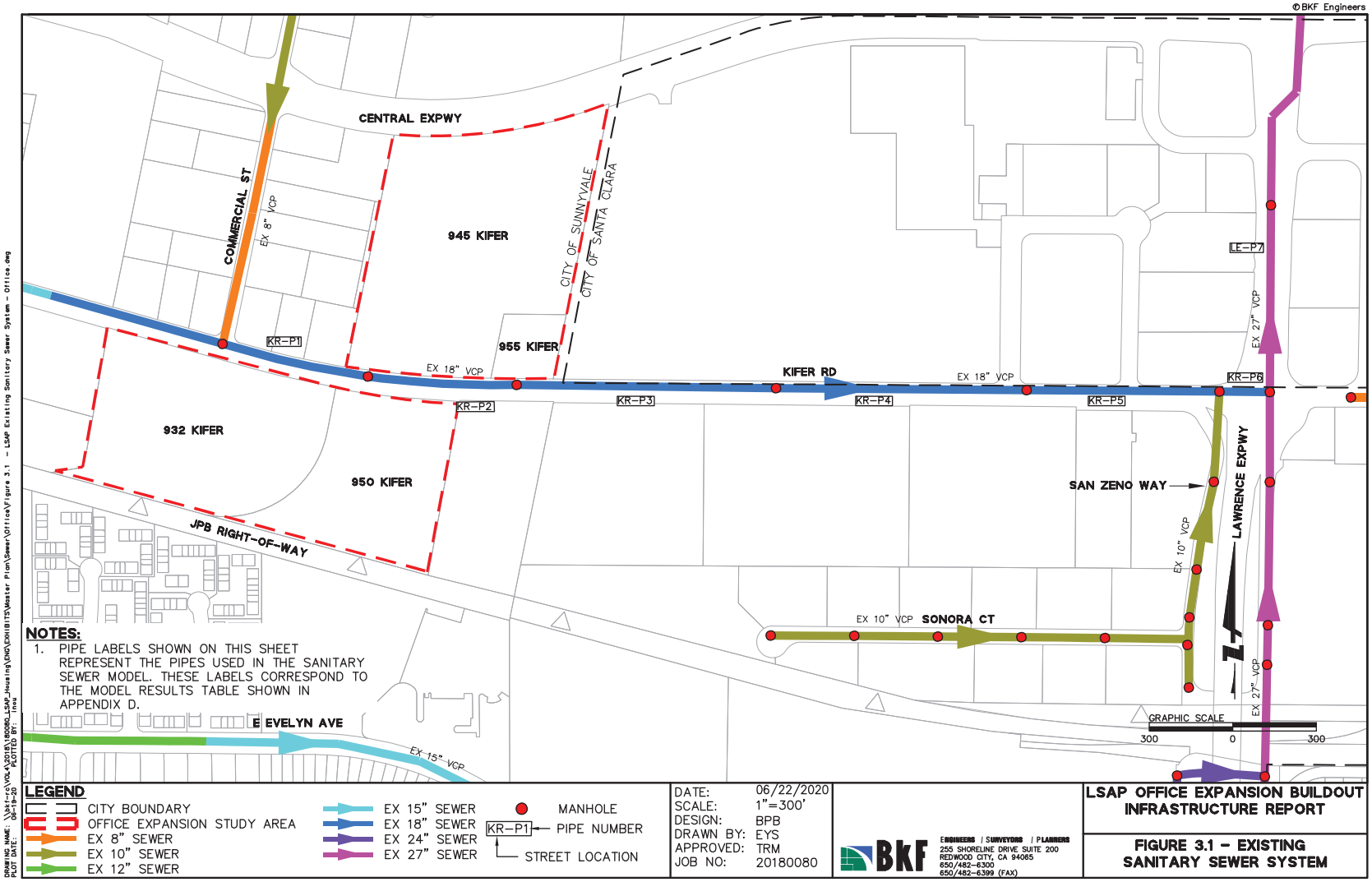
Figure 3.3 – LSAP Average Dry Weather Flow Pipe Velocity illustrates the ADWF pipe velocities for the sanitary sewer system. The sanitary sewer system ADWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The recommended system described falls under the housing expansion infrastructure impact study. The results of the analysis show LSAP ADWF velocities ranging from approximately 2.39 fps to 5.67 fps in the City's existing sewer system. ADWF velocities in the recommended City sewer system range from approximately 2.39 fps to 6.24 fps.

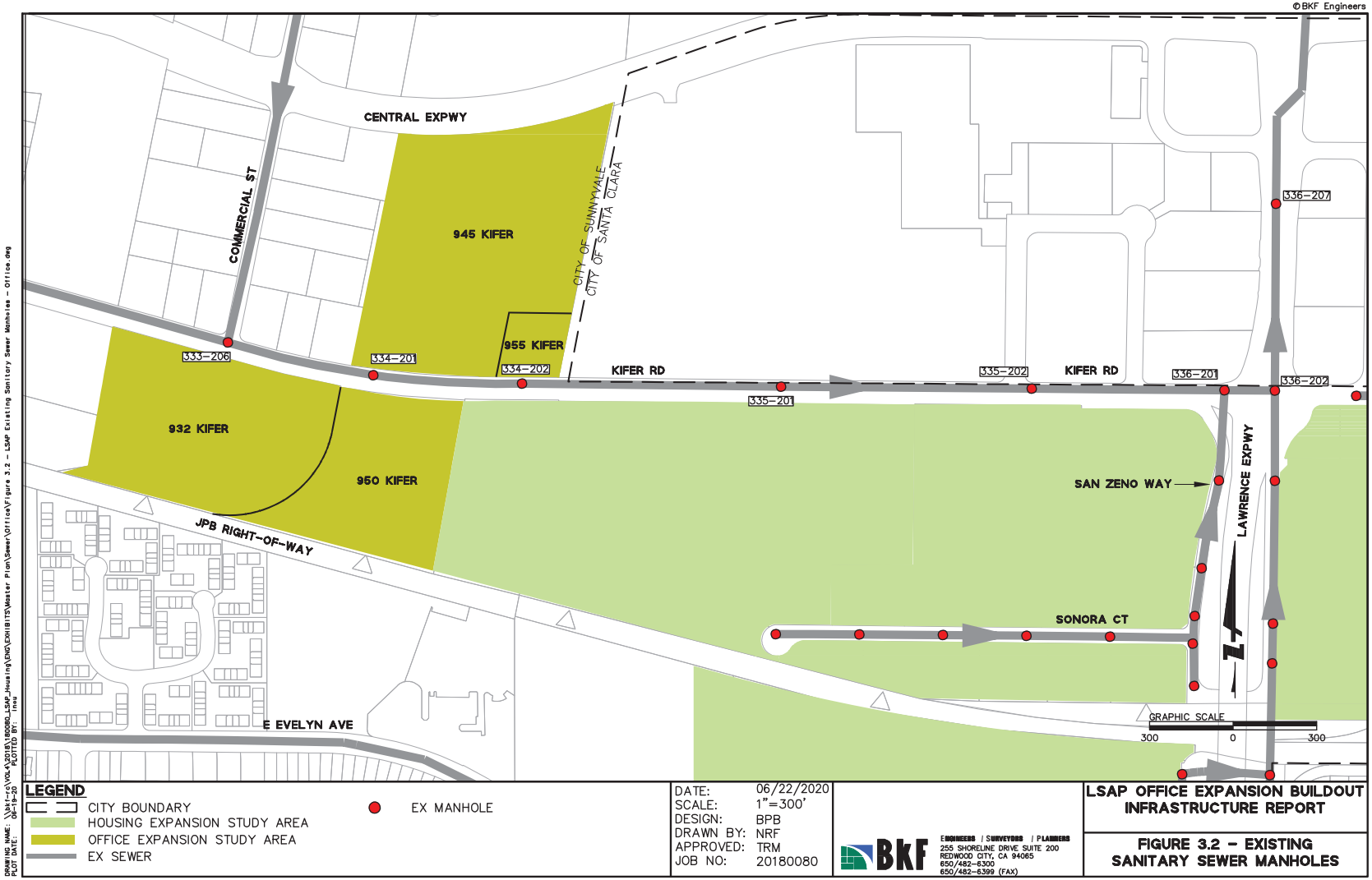
3.7.2.2 Peak Wet Weather Flow (PWWF)

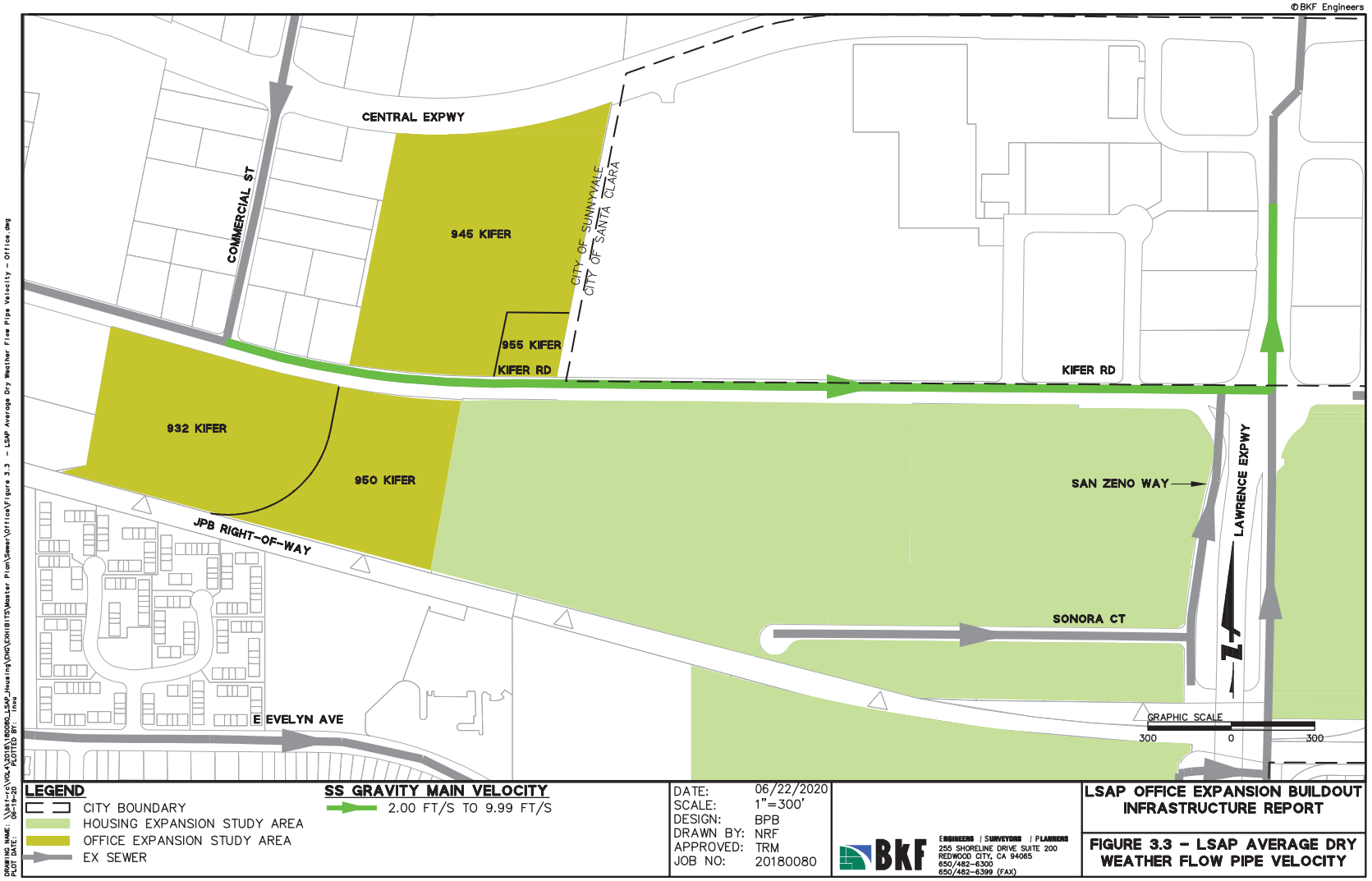
Figure 3.4 – LSAP Peak Wet Weather Flow Pipe Velocity illustrates the PWWF pipe velocities for the sanitary sewer system. The sanitary sewer system PWWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The recommended system described falls under the housing expansion infrastructure impact study. The results of the analysis show LSAP PWWF velocities ranging from approximately fps 3.21 to 7.84 fps in the City's existing sewer system. PWWF velocities in the recommended City sewer system range from approximately 3.21 fps to 8.20 fps.

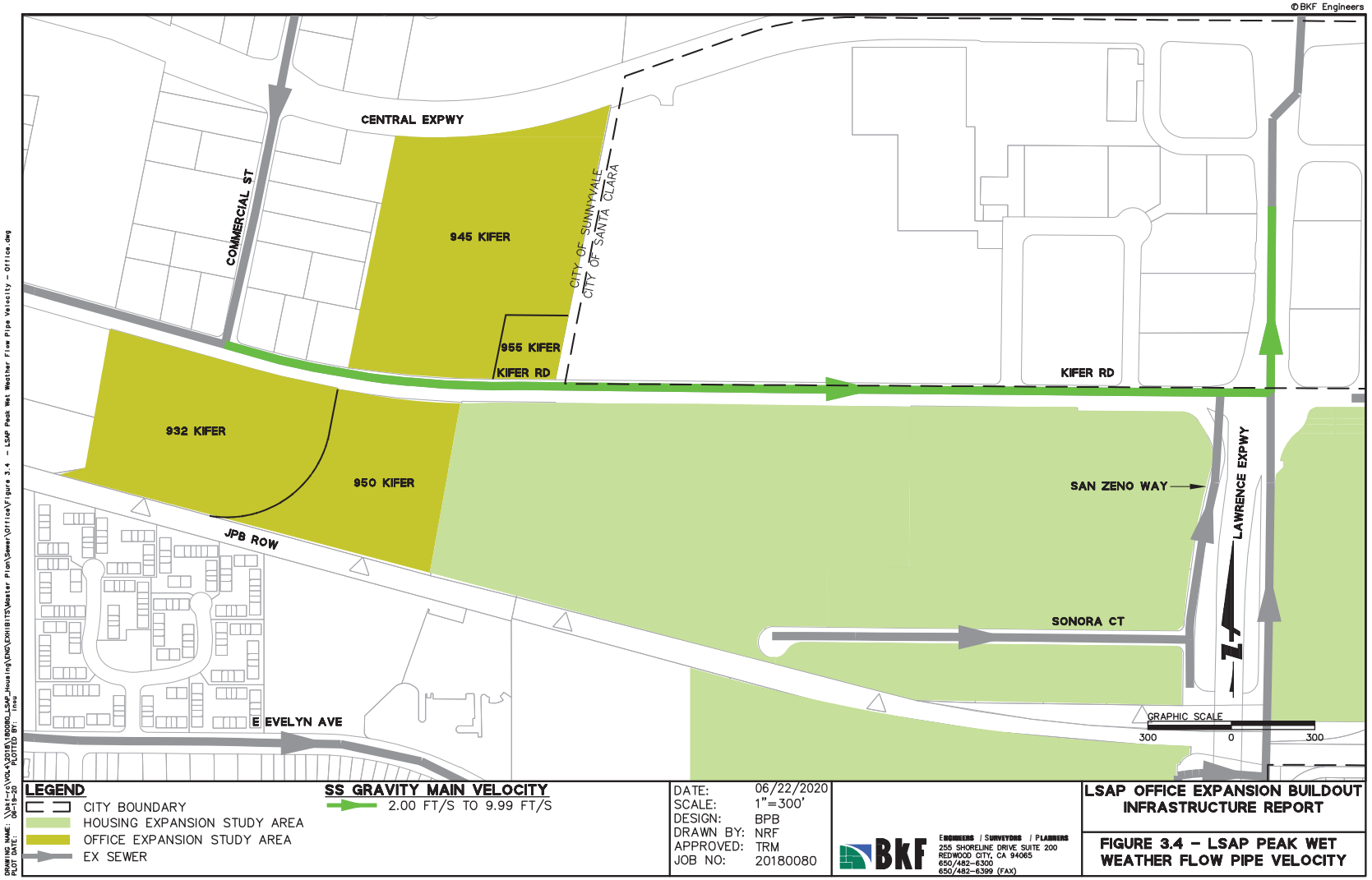
3.8 Sanitary Sewer System Recommendations

The existing sanitary sewer system, as shown in Appendix D – LSAP Sewer Model Reports, is designed to meet the design criteria outlined in Table 3.1 – Sanitary Sewer System Design Criteria. Refer to Appendix D – LSAP Sewer Model Reports for detailed results of model scenarios. In conclusion, no upgrades to the existing sanitary sewer system are required since the model results display no issues with pipe capacity and flow under various demand scenarios and the existing pipe system abides by City design standards.


© BKF Engineers
CENTRAL EXPWY
COMMERCIAL ST
EX 8" VCP
945 KIFER
955 KIFER
CITY OF SUNNYVALE
CITY OF SANTA CLARA
KR-P1
EX 18" VCP
KR-P2
KR-P3
KIFER RD
EX 18" VCP
KR-P4
KR-P5
KR-P6
LE-P7
EX 27" VCP
932 KIFER
950 KIFER
JPB RIGHT-OF-WAY
SAN ZENO WAY
LAWRENCE EXPWY
EX 10" VCP
EX 10" VCP SONORA CT
E EVELYN AVE
EX 15" VCP
EX 27" VCP
GRAPHIC SCALE
300 0 300
NOTES:
1. PIPE LABELS SHOWN ON THIS SHEET REPRESENT THE PIPES USED IN THE SANITARY SEWER MODEL. THESE LABELS CORRESPOND TO THE MODEL RESULTS TABLE SHOWN IN APPENDIX D.
LEGEND
CITY BOUNDARY
OFFICE EXPANSION STUDY AREA
EX 8" SEWER
EX 10" SEWER
EX 12" SEWER
EX 15" SEWER
EX 18" SEWER
EX 24" SEWER
EX 27" SEWER
MANHOLE
KR-P1 PIPE NUMBER
STREET LOCATION
DATE: 06/22/2020
SCALE: 1"=300'
DESIGN: BPB
DRAWN BY: EYS
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 3.1 – EXISTING SANITARY SEWER SYSTEM
DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.1 – LSAP Existing Sanitary Sewer System – Office.dwg
PLOT DATE: 08-19-20
PLOTTED BY: lmu


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CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
955 KIFER
CITY OF SUNNYVALE
CITY OF SANTA CLARA
333-206
334-201
334-202
KIFER RD
335-201
335-202
KIFER RD
336-201
336-202
336-207
932 KIFER
950 KIFER
JPB RIGHT-OF-WAY
SAN ZENO WAY
LAWRENCE EXPWY
SONORA CT
E EVELYN AVE
GRAPHIC SCALE
300
0
300
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
EX SEWER
EX MANHOLE
DATE: 06/22/2020
SCALE: 1"=300'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
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255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
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FIGURE 3.2 - EXISTING SANITARY SEWER MANHOLES
DRAWING NAME: \\bkf-cv\VOL-A\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.2 - LSAP Existing Sanitary Sewer Manholes - Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau


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CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
CITY OF SUNNYVALE
CITY OF SANTA CLARA
955 KIFER
KIFER RD
KIFER RD
932 KIFER
950 KIFER
SAN ZENO WAY
LAWRENCE EXPWY
JPB RIGHT-OF-WAY
SONORA CT
E EVELYN AVE
GRAPHIC SCALE
300
0
300
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
EX SEWER
SS GRAVITY MAIN VELOCITY
2.00 FT/S TO 9.99 FT/S
DATE: 06/22/2020
SCALE: 1"=300'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
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FIGURE 3.3 - LSAP AVERAGE DRY WEATHER FLOW PIPE VELOCITY
DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\DNG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.3 - LSAP Average Dry Weather Flow Pipe Velocity - Office.dwg
PLOT DATE: 08-19-20
PLOTTED BY: lmu


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CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
955 KIFER
KIFER RD
CITY OF SUNNYVALE
CITY OF SANTA CLARA
KIFER RD
932 KIFER
950 KIFER
SAN ZENO WAY
LAWRENCE EXPWY
JPB ROW
SONORA CT
E EVELYN AVE
GRAPHIC SCALE
300
0
300
LEGEND
CITY BOUNDARY
HOUSING EXPANSION STUDY AREA
OFFICE EXPANSION STUDY AREA
EX SEWER
SS GRAVITY MAIN VELOCITY
2.00 FT/S TO 9.99 FT/S
DATE: 06/22/2020
SCALE: 1"=300'
DESIGN: BPB
DRAWN BY: NRF
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS / SURVEYORS / PLANNERS
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650/482-6399 (FAX)
LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 3.4 – LSAP PEAK WET WEATHER FLOW PIPE VELOCITY
DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\DWG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.4 – LSAP Peak Wet Weather Flow Pipe Velocity – Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau

SECTION 4: STORM DRAIN SYSTEM

4.1 Existing Storm Drain Layout

The existing storm drain for LSAP is shown on Figure 4.1 – LSAP Existing Storm Drain System. Existing storm drain mains are maintained by the City of Sunnyvale. The LSAP area is currently served by existing storm drain mains that vary in size between 18-inches to 30-inches.

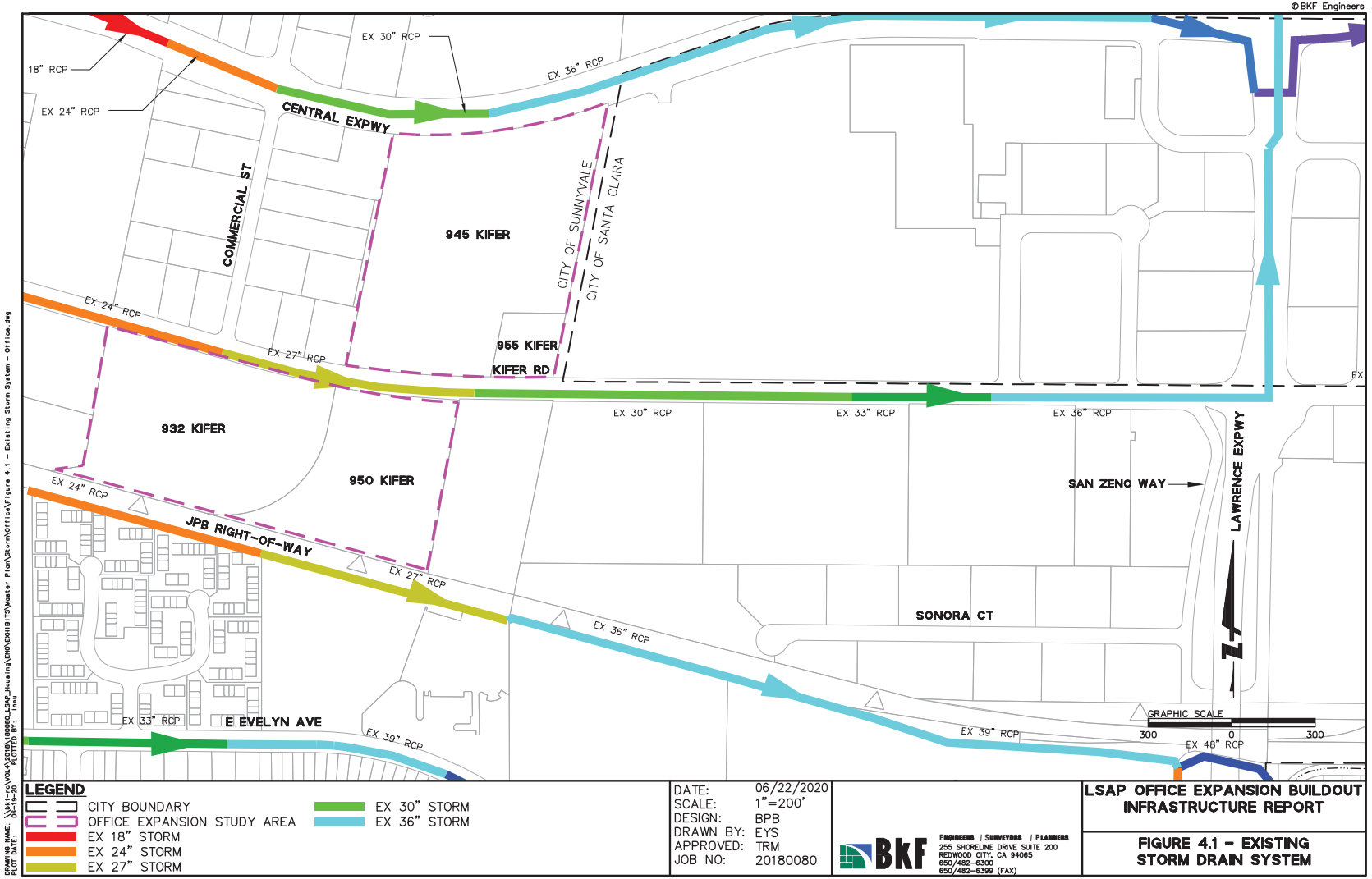
4.2 Storm Drain System for Developed Projects

The existing site is approximately 719,000 sf (51%) of impervious surfaces and 692,100 sf (49%) of pervious surfaces. The north site, located at 945/955 Kifer Road, composes of 447,500 sf (66%) of pervious surfaces and 230,600 sf (34%) of impervious surface. The south site, located at 932/950 Kifer Road, composes of 244,600 sf (33%) of pervious surfaces and 488,400 sf (67%) of impervious surface.

The office expansion LSAP is proposed to have approximately 862,900 sf (61%) of impervious surfaces and 548,100 sf (39%) of pervious surface. The north site proposes 371,600 sf (55%) of pervious surfaces and 306,400 sf (45%) of impervious surface. The south site proposes 176,500 sf (24%) of pervious surfaces and 556,500 sf (76%) of impervious surface. The proposed developments abide by the City of Sunnyvale's Municipal Code requirements for a minimum of 20% landscaped surfaces for each development parcel. The north and south sites proposes bio-treatment areas on-site to treat impervious surfaces. The remainder of the pervious surfaces are assumed to be self-treating and infiltrate within their own development site.

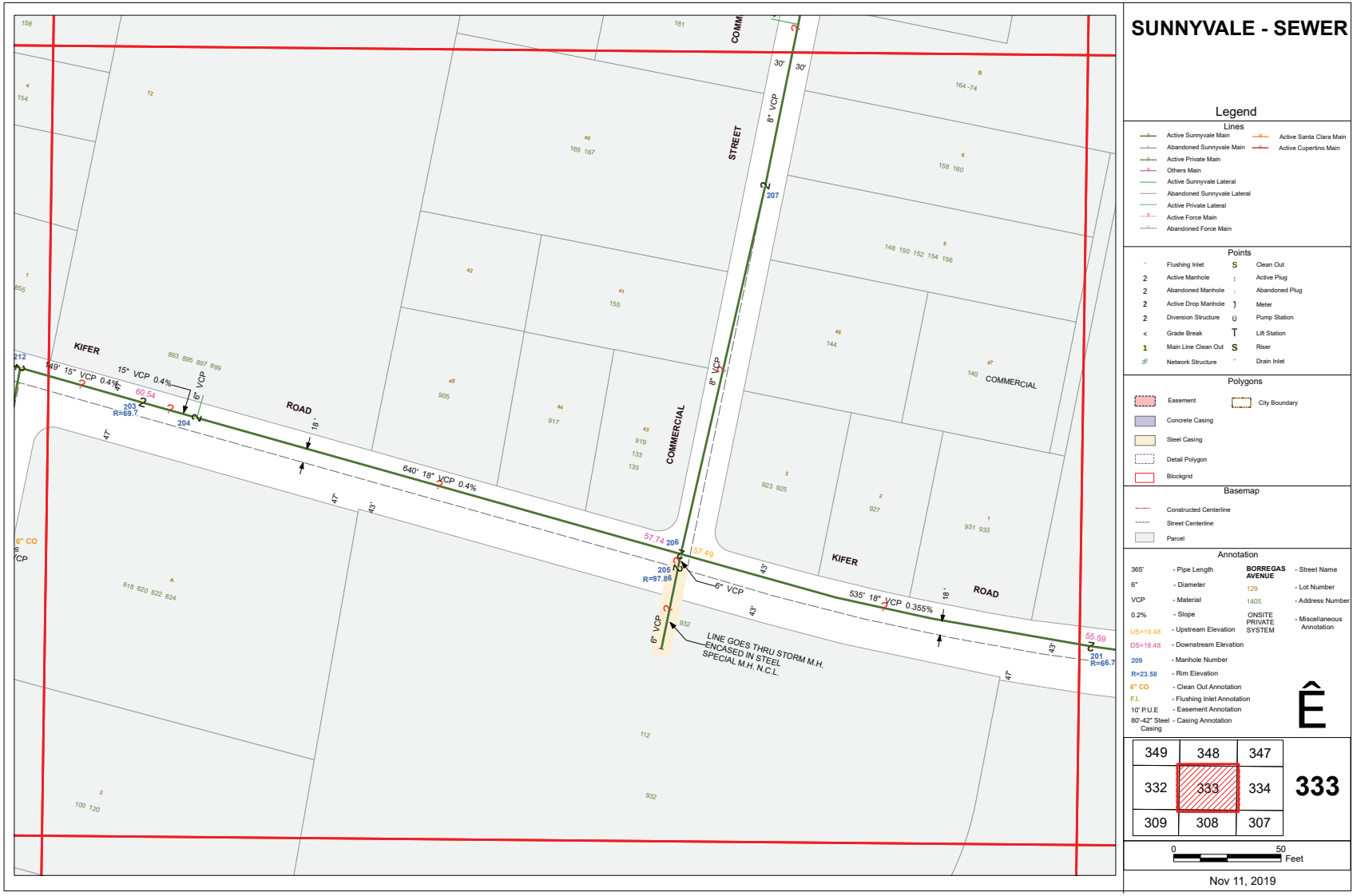
4.3 Storm Drain System Recommendations

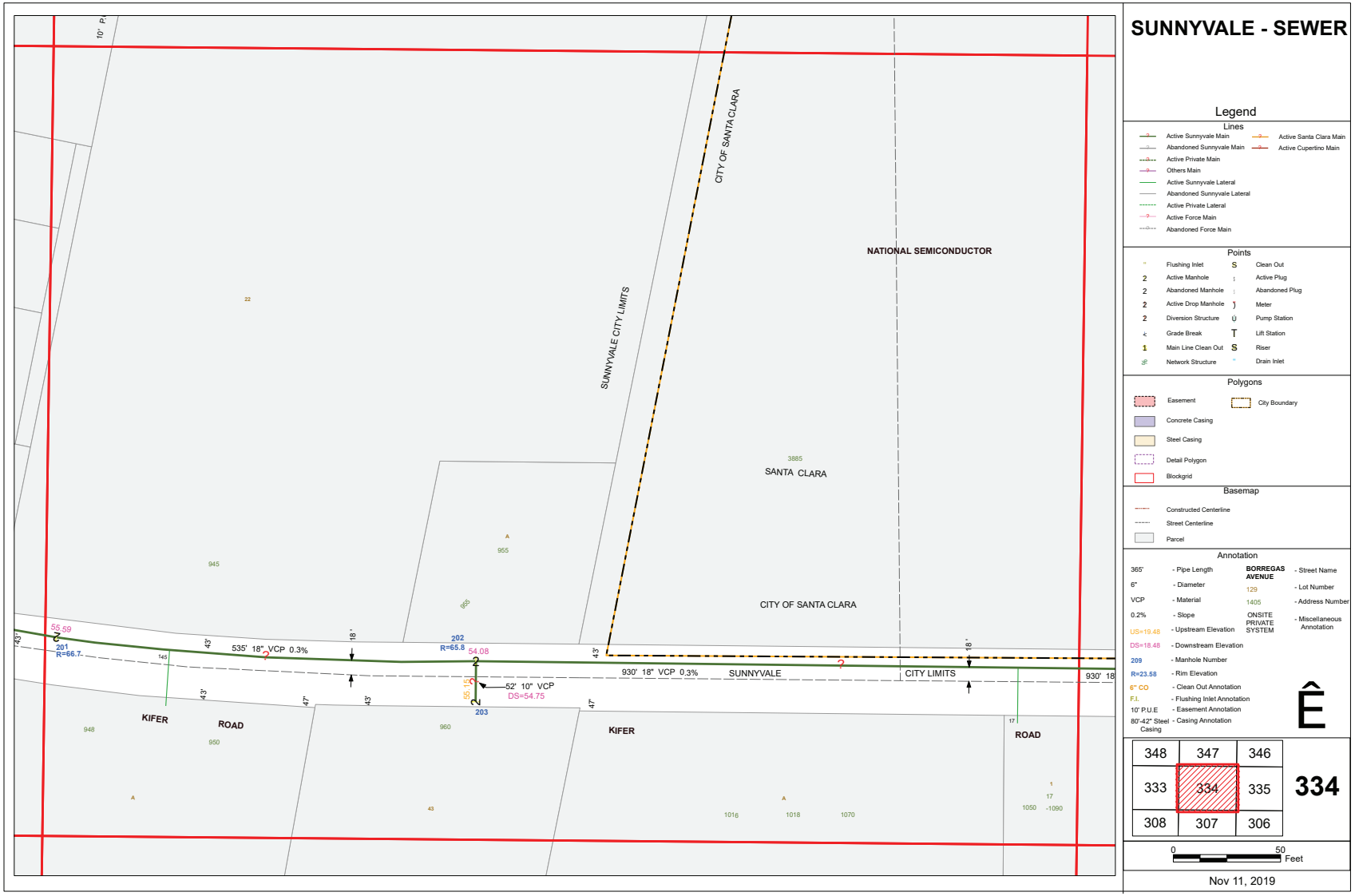
With on-site treatment areas for impervious surfaces and self-treating pervious surfaces elsewhere throughout the site, the proposed developments would abide by the City of Sunnyvale's Municipal Code requirements for a minimum of 20% landscaped surfaces for each parcel. Therefore, the proposed Office Expansion Study Area project assumes no increase in stormwater runoff to the existing storm drain system.

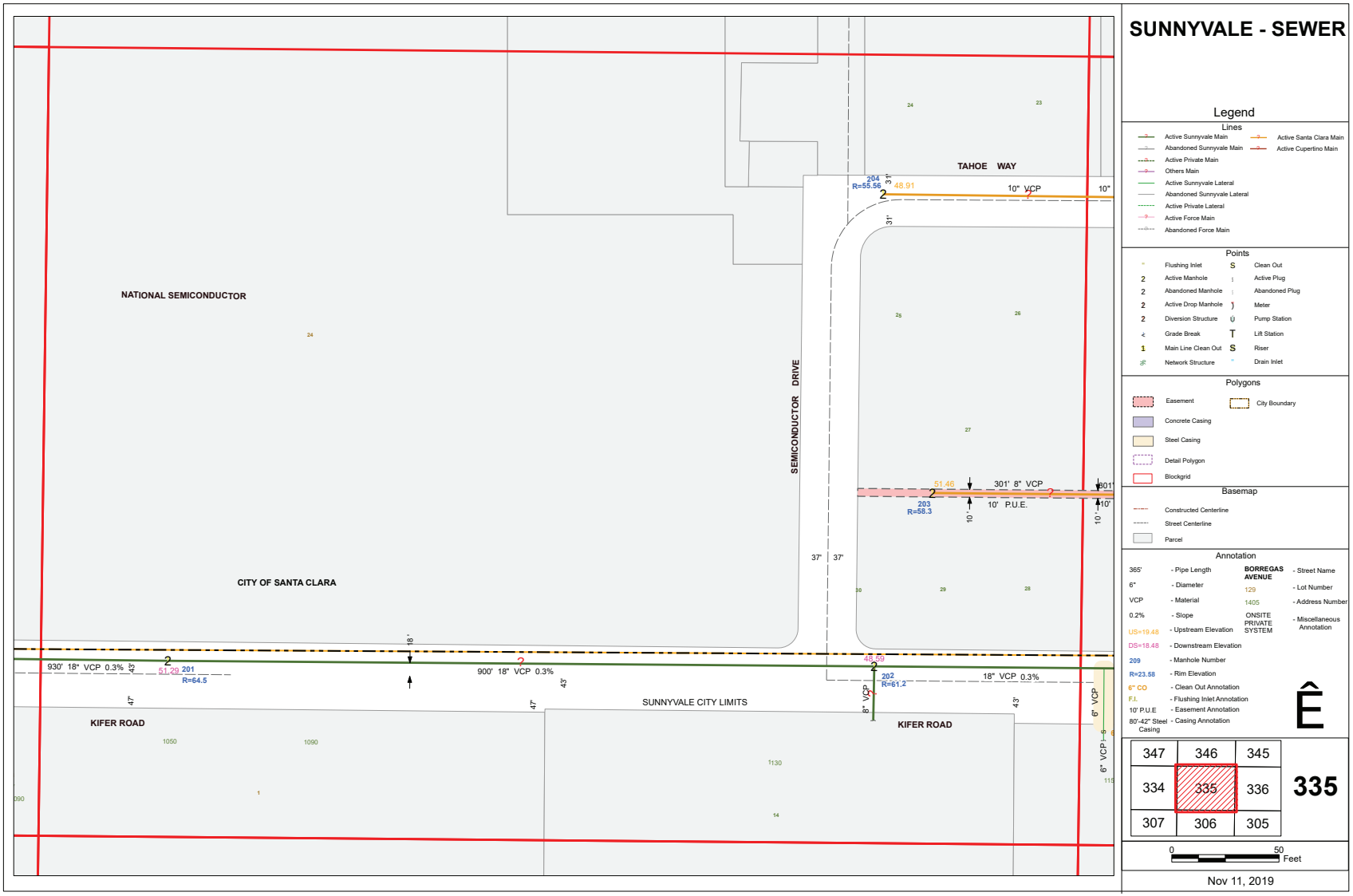

©BKF Engineers
18" RCP
EX 24" RCP
EX 30" RCP
EX 36" RCP
CENTRAL EXPWY
COMMERCIAL ST
945 KIFER
CITY OF SUNNYVALE
CITY OF SANTA CLARA
955 KIFER
KIFER RD
EX 24" RCP
EX 27" RCP
EX 30" RCP
EX 33" RCP
EX 36" RCP
932 KIFER
950 KIFER
EX 24" RCP
JPB RIGHT-OF-WAY
EX 27" RCP
EX 36" RCP
SAN ZENO WAY
LAWRENCE EXPWY
SONORA CT
EX 33" RCP
E EVELYN AVE
EX 39" RCP
EX 39" RCP
EX 48" RCP
GRAPHIC SCALE
300
0
300
LEGEND
CITY BOUNDARY
OFFICE EXPANSION STUDY AREA
EX 18" STORM
EX 24" STORM
EX 27" STORM
EX 30" STORM
EX 36" STORM
DATE: 06/22/2020
SCALE: 1"=200'
DESIGN: BPB
DRAWN BY: EYS
APPROVED: TRM
JOB NO: 20180080
BKF ENGINEERS | SURVEYORS | PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)
LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT
FIGURE 4.1 - EXISTING STORM DRAIN SYSTEM
DRAWING NAME: \\bkf-cvol-a\2018\180080_LSAP_Housing\DWG\EXHIBITS\Master Plan\Storm\Office\Figure 4.1 - Existing Storm System - Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnau

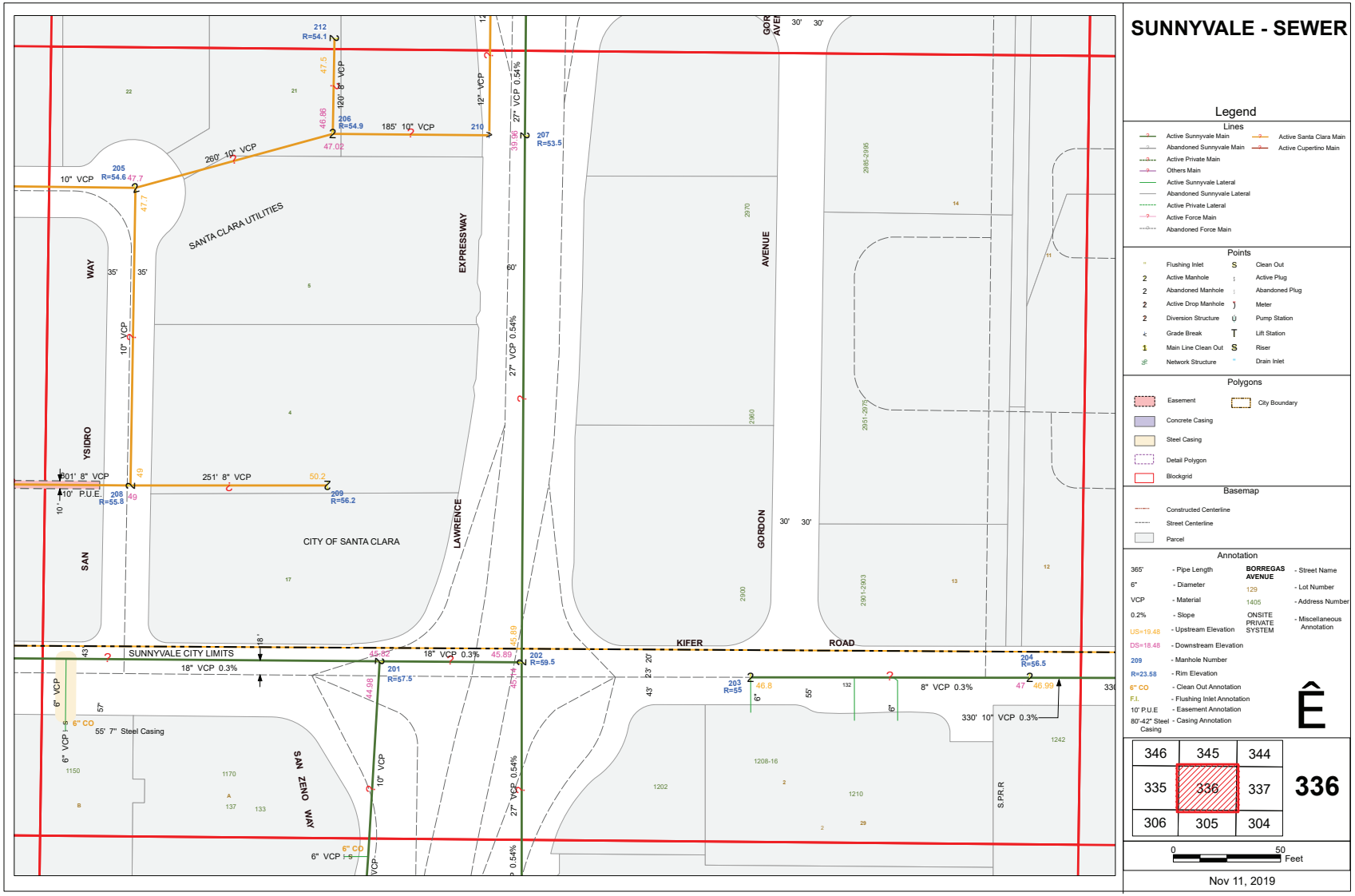
APPENDIX A

Block Book Pages for Lawrence Station Area Plan




SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
NATIONAL SEMICONDUCTOR
CITY OF SANTA CLARA
SUNNYVALE CITY LIMITS
SANTA CLARA
CITY OF SANTA CLARA
535' 18" VCP 0.3%
930' 18" VCP 0.3%
SUNNYVALE
CITY LIMITS
52' 10" VCP
DS=54.75
KIFER
ROAD
KIFER
ROAD
348
347
346
333
334
335
308
307
306
334
0
50
Feet
Nov 11, 2019


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
347
346
345
334
335
336
307
306
305
335
0
50
Feet
Nov 11, 2019
TAHOE WAY
NATIONAL SEMICONDUCTOR
SEMICONDUCTOR DRIVE
CITY OF SANTA CLARA
SUNNYVALE CITY LIMITS
KIFER ROAD
KIFER ROAD
10" VCP
301' 8" VCP
10' P.U.E.
930' 18" VCP 0.3%
900' 18" VCP 0.3%
18" VCP 0.3%
8" VCP
6" VCP
6" VCP
204 R=55.56
48.91
203 R=58.3
51.46
201 R=64.5
51.29
202 R=61.2
48.59
37'
37'
47'
47'
43'
43'
18'
31'
10'
10'
301'


SUNNYVALE - SEWER
Legend
Lines
Active Sunnyvale Main
Abandoned Sunnyvale Main
Active Private Main
Others Main
Active Sunnyvale Lateral
Abandoned Sunnyvale Lateral
Active Private Lateral
Active Force Main
Abandoned Force Main
Active Santa Clara Main
Active Cupertino Main
Points
Flushing Inlet
Active Manhole
Abandoned Manhole
Active Drop Manhole
Diversion Structure
Grade Break
Main Line Clean Out
Network Structure
Clean Out
Active Plug
Abandoned Plug
Meter
Pump Station
Lift Station
Riser
Drain Inlet
Polygons
Easement
Concrete Casing
Steel Casing
Detail Polygon
Blockgrid
City Boundary
Basemap
Constructed Centerline
Street Centerline
Parcel
Annotation
365' - Pipe Length
6" - Diameter
VCP - Material
0.2% - Slope
US=19.48 - Upstream Elevation
DS=18.48 - Downstream Elevation
209 - Manhole Number
R=23.58 - Rim Elevation
6" CO - Clean Out Annotation
F.I. - Flushing Inlet Annotation
10' P.U.E - Easement Annotation
80'-42" Steel Casing - Casing Annotation
BORREGAS AVENUE - Street Name
129 - Lot Number
1405 - Address Number
ONSITE PRIVATE SYSTEM - Miscellaneous Annotation
346 345 344
335 336 337
306 305 304
336
0 50 Feet
Nov 11, 2019
SANTA CLARA UTILITIES
EXPRESSWAY
CITY OF SANTA CLARA
SUNNYVALE CITY LIMITS
KIFER ROAD
GORDON AVENUE
LAWRENCE
SAN YSIDRO WAY
SAN ZENO WAY
S.P.R.R
212 R=54.1
206 R=54.9
205 R=54.6
207 R=53.5
208 R=55.8
209 R=56.2
201 R=57.5
202 R=59.5
203 R=55
204 R=56.5
210
185' 10" VCP
260' 10" VCP
10" VCP
201' 8" VCP
251' 8" VCP
18" VCP 0.3%
27" VCP 0.54%
8" VCP 0.3%
330' 10" VCP 0.3%
6" VCP
6" CO
55' 7" Steel Casing
10' P.U.E.

APPENDIX B

LSAP Parcels with Development Assumptions

Appendix B
Lawrence Station Area Plan
LSAP Parcels with Devleopment Assumptions
Received from George Schroeder of the City of Sunnyvale on March 16, 2020

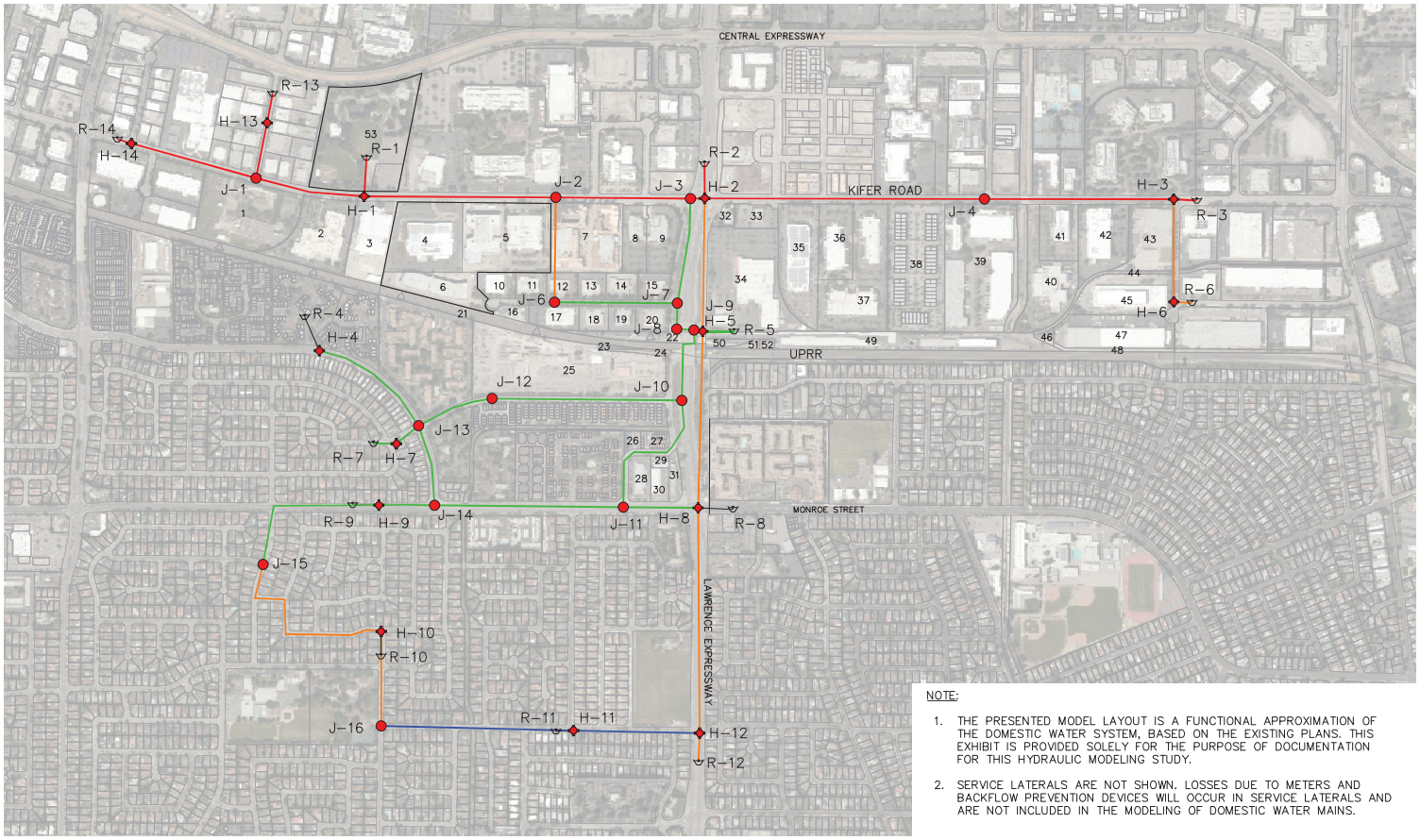
Existing		Parcels highlighted in green will be analyzed as the existing condition.
Proposed		Parcels highlighted in blue will be analyzed as the proposed condition.

Proposed Intuitive Surgical Properties to add to LSAP Boundaries - nonresidential only. See GPA/RZ 2018-7723

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Existing FAR	Proposed Bldg Sq. Ft.
20540001, 20540002	945-955	Kifer	Rd	678048	15.57	2%	364,000
20549005, 20549012	932-950	Kifer	Rd	732897	16.83	22%	847,000
			Totals	**1410945**	**32.39**		

APPENDIX C

LSAP Potable Water Model Reports



NOTE:

1. THE PRESENTED MODEL LAYOUT IS A FUNCTIONAL APPROXIMATION OF THE DOMESTIC WATER SYSTEM, BASED ON THE EXISTING PLANS. THIS EXHIBIT IS PROVIDED SOLELY FOR THE PURPOSE OF DOCUMENTATION FOR THIS HYDRAULIC MODELING STUDY.
2. SERVICE LATERALS ARE NOT SHOWN. LOSSES DUE TO METERS AND BACKFLOW PREVENTION DEVICES WILL OCCUR IN SERVICE LATERALS AND ARE NOT INCLUDED IN THE MODELING OF DOMESTIC WATER MAINS.

EXHIBIT 1. WaterCAD Model Layout

Lawrence Station Area Plan

Office Study Project

SCALE 1" = 800'

BKF No. 20180080-10

GRAPHIC SCALE
800 0 800 1600

LEGEND

- MODEL NODE
- MODEL RESERVOIR
- J-00 NODE ID
- H-00 HYDRANT ID
- HYDRANT LOCATION
- 12" CAST IRON PIPE (EXISTING)
- 12" DUCTILE IRON PIPE (EXISTING)
- 10" DUCTILE IRON PIPE (EXISTING)
- 8" DUCTILE IRON PIPE (EXISTING)

BKF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

APPENDIX C-1

Model Demand Scenario 1: Static

Node Report

Node ID	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
J-1	63.00	240.00	77
H-1	63.00	240.00	77
H-13	63.00	240.00	77
H-14	67.00	240.00	75

APPENDIX C-2

Model Demand Scenario 2: Peak Hour Demand

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ PHD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	500	1,000	76	1.73	TRUE
H-1	500	1,000	77	0.18	TRUE
H-13	500	1,000	77	0.29	TRUE
H-14	500	1,000	75	0.10	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX C-3

Model Demand Scenario 3: Max Day Demand + Fire Flow

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ MDD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	4,820	6,000	73	10.40	TRUE
H-1	4,820	6,000	76	1.06	TRUE
H-13	4,820	6,000	76	1.77	TRUE
H-14	4,820	6,000	75	0.59	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX D

LSAP Sewer Model Reports

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-KR-P1	333-206	334-201	**336.11**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
EX-KR-P2	334-201	334-202	**492.82**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
EX-KR-P3	334-202	335-201	**519.37**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
EX-KR-P4	335-201	335-202	**571.01**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.61	**0.32**
EX-KR-P5	335-202	336-201	**634.28**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
EX-KR-P6	336-201	336-202	**733.54**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.90	11.20	10.18	5.67	**0.32**
EX-LE-P7	336-202	336-207 (EX)	**3533.54**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	42.90	39.23	14.14	12.85	5.20	**0.43**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-KR-P1	333-206 (P)	334-201 (P)	**336.11**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
PR-KR-P2	334-201 (P)	334-202 (P)	**492.82**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
PR-KR-P3	334-202 (P)	335-201 (P)	**519.37**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
PR-KR-P4	335-201 (P)	335-202 (P)	**571.01**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.62	**0.32**
PR-KR-P5	335-202 (P)	336-201 (P)	**634.28**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
PR-KR-P6	336-201 (P)	336-202 (P)	**733.54**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.87	11.20	10.18	5.67	**0.32**
PR-LE-P7	336-202 (P)	336-207 (P)	**3533.54**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	42.87	39.08	14.17	12.58	6.24	**0.37**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-KR-P1	333-206	334-201	**957.91**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
EX-KR-P2	334-201	334-202	**1460.66**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
EX-KR-P3	334-202	335-201	**1557.58**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
EX-KR-P4	335-201	335-202	**1720.26**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
EX-KR-P5	335-202	336-201	**1940.67**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
EX-KR-P6	336-201	336-202	**2314.89**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.71	10.81	10.18	7.84	**0.58**
EX-LE-P7	336-202	336-207 (EX)	**9798.29**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	43.71	39.96	13.33	12.85	6.51	**0.79**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-KR-P1	333-206 (P)	334-201 (P)	**957.91**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
PR-KR-P2	334-201 (P)	334-202 (P)	**1460.66**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
PR-KR-P3	334-202 (P)	335-201 (P)	**1557.58**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
PR-KR-P4	335-201 (P)	335-202 (P)	**1720.26**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
PR-KR-P5	335-202 (P)	336-201 (P)	**1940.67**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
PR-KR-P6	336-201 (P)	336-202 (P)	**2314.89**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.53	10.81	10.18	7.84	**0.58**
PR-LE-P7	336-202 (P)	336-207 (P)	**9798.29**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	43.53	39.65	13.51	12.58	8.20	**0.63**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

APPENDIX E

Potable Water System Demand Calculations

Appendix E
Lawrence Station Area Plan
Potable Water System Demand Calculations

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
1 & 2	--	351,000	--	13,000	--	78,702	54.65
53	--	--	831,000	16,000	--	184,110	127.85
Subtotal	--	351,000	831,000	29,000	--	262,812	182.51

APPENDIX F

Sanitary Sewer System Demand Calculations

Appendix F
Lawrence Station Area Plan
Sanitary Sewer System Demand Calculations

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
1 & 2	--	351,000	--	13,000	--	50,759	35.25	96.93	119.85
53	--	--	831,000	16,000	--	174,905	121.46	303.65	382.60
Subtotal	--	351,000	831,000	29,000	--	225,663	156.71	400.59	502.45

ACKNOWLEDGEMENTS

The original 2016 plan was prepared under the guidance and review of the following:

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Lokelani Yee
Saagar Ghai

Public Draft of Amended
LAWRENCE STATION AREA PLAN
Draft Amendments 2021

Appendix B2

Draft Lawrence Station
Sense of Place Plan, May 26, 2021

DRAFT

LAWRENCE STATION
SENSE OF PLACE PLAN

May 26, 2021







Sunnyvale



ACKNOWLEDGEMENTS

City of Sunnyvale Staff

Community Development Department, Planning Division; Office of the City Manager; and Public Works Department, Engineering Division and Transportation and Traffic Division

Amber Blizinski, Principal Planner
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Mary Jeyaprakash, Associate Planner
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1 INTRODUCTION

Background

The Lawrence Station Area Sense of Place Plan ("SOP plan" or "Sense of Place Plan") has been prepared to supplement the Lawrence Station Area Plan ("LSAP"), which the Sunnyvale City Council adopted in 2016 and amended in 2021. The LSAP was developed to promote greater use of existing transit facilities and to guide the development of a diverse neighborhood that provides employment, residential, retail, and other services and recreational spaces. The Sense of Place Plan builds off of the goals, policies, and guidelines outlined in the LSAP and provides recommendations to shape the future character and improve the streetscape experience around Lawrence Station.

Purpose

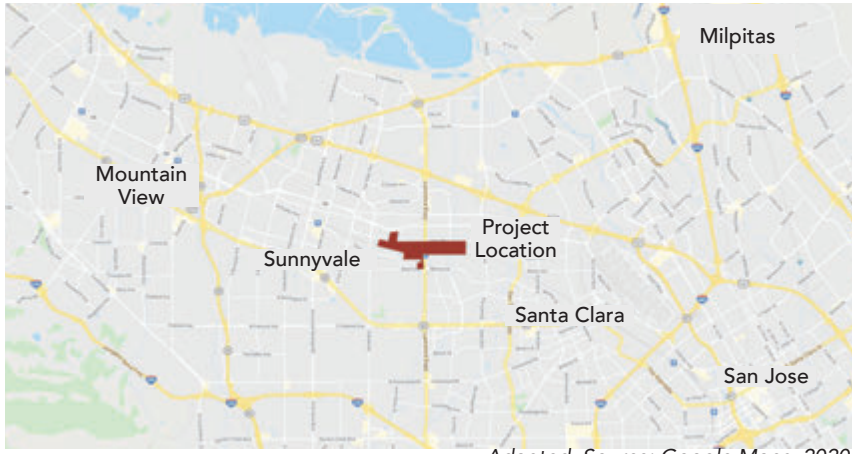
The purpose of this report is to function as a policy document to ensure improvements to the Lawrence Station Area are implemented in accordance with the Sense of Place Plan.

The primary goals of the Sense of Place Plan are to:

- Enhance the quality of life for current and future residents by promoting a vibrant streetlife
- Encourage multimodal transportation, with an emphasis on safer and more inviting streets for pedestrians, bicyclists, and transit users
- Enhance neighborhood identity and character through streetscape enhancements

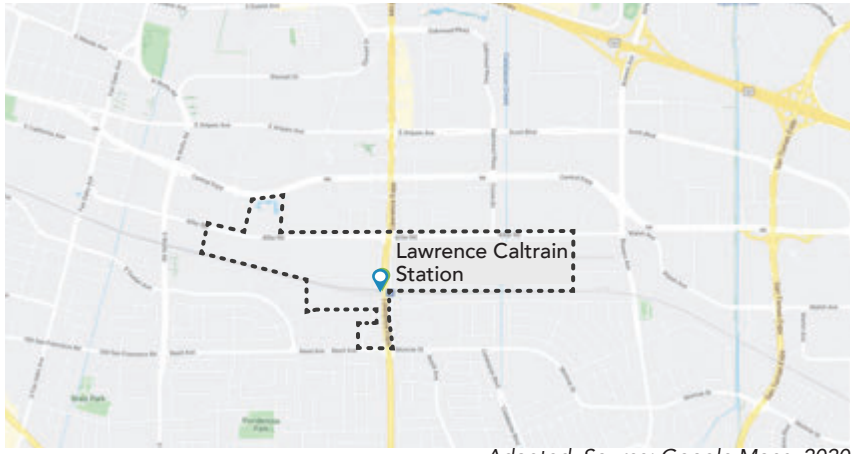
Location

The project is centered around the Lawrence Caltrain Station in



Adapted, Source: Google Maps, 2020

Figure 1-1. Vicinity Map



Adapted, Source: Google Maps, 2020

Figure 1-2. Project Location Map

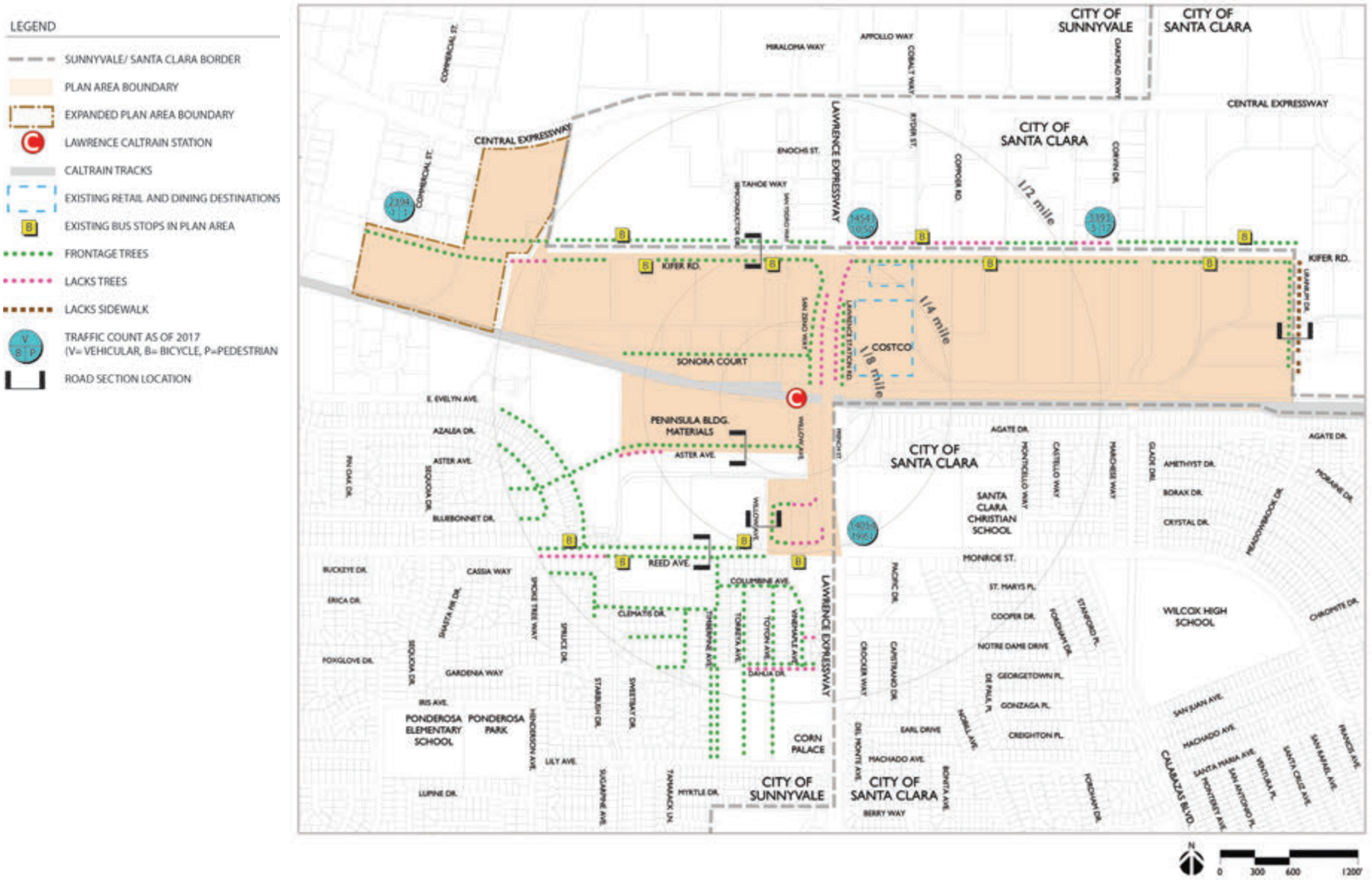


Figure 1-3. Existing Conditions Plan

Base Map Source: LSAP, February 2015

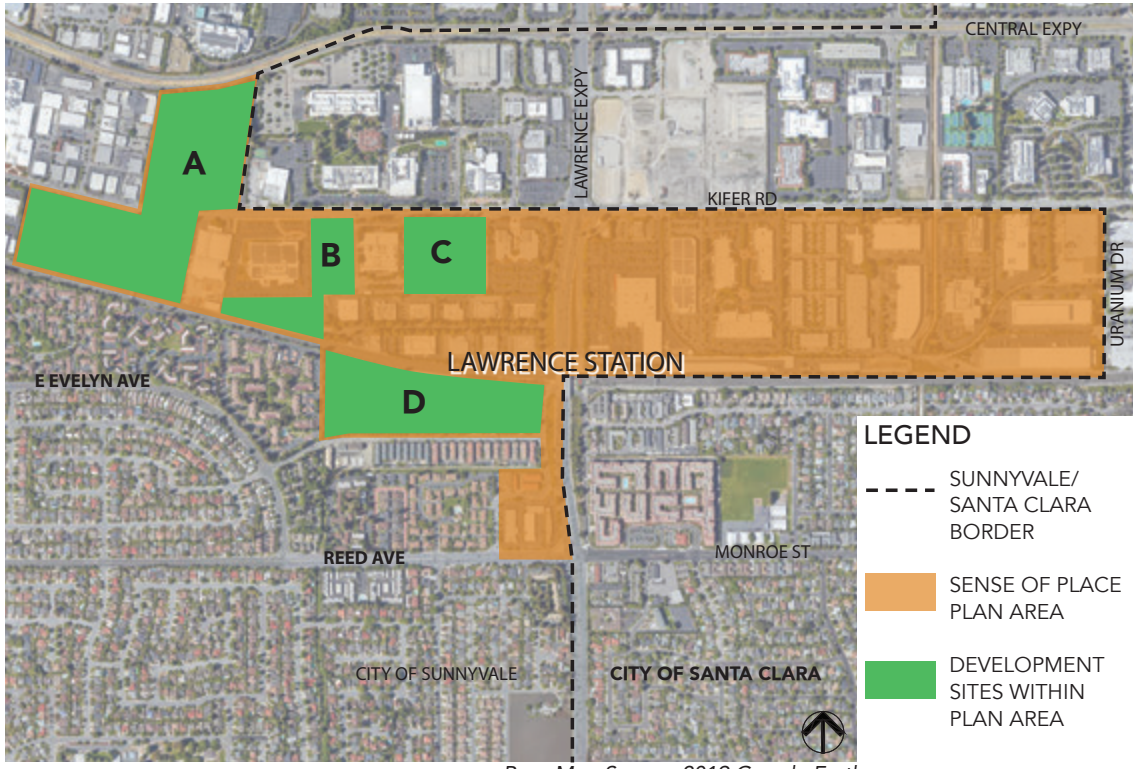
Sunnyvale ("City"), California, and the study area is roughly bounded by Kifer Road to the north, Uranium Drive to the east, Reed Avenue, Aster Avenue and the Caltrain tracks to the south, and Commercial Street to the west. The project is also bounded by the Sunnyvale and Santa Clara city limits to the north and east as shown in Figure 1-3. The jurisdiction of the northern boundary of Kifer Road is shared between the City and Santa Clara.

Existing Conditions As of 2021

Two main collector roads, Kifer Road and Reed Avenue, run through the study area and connect to Lawrence Expressway, a major arterial that is under the jurisdiction of the County of Santa Clara. In the City of Santa Clara, offices line Kifer Road, directly north of the plan area. A new mixed-use housing development was recently constructed just outside the plan area, directly northeast of the Lawrence Expressway and



Existing conditions at Aster Avenue (upper left), Lawrence Expressway (upper right), Kifer Road (lower left), and Uranium Drive (lower right)



Base Map Source: 2019 Google Earth

KEY

A: INTUITIVE SURGICAL (932 & 945-955 KIFER ROAD), PLANNED

B: INTUITIVE SURGICAL (1050 & 1127 SONORA COURT), RECENTLY COMPLETED

C: GREYSTAR (1120 & 1130 KIFER ROAD), RECENTLY COMPLETED

D: OLYMPIC RESIDENTIAL GROUP (1155 & 1175 ASTER AVENUE), APPROVED, NOT BUILT

Figure 1-4. Developments Planned or Under Construction as of 2021

Kifer Road intersection in the City of Santa Clara's LSAP. Industrial developments lie to the east of Uranium Drive (City of Santa Clara), and residential developments lie to the south of the plan area both in Sunnyvale and Santa Clara. These include apartment and townhome complexes directly to the south, and mature single-family residential neighborhoods that lie beyond those complexes.

Currently the plan area consists mostly of office uses. Industrial parcels include the eastern area between Calabazas Creek and Uranium Drive. A townhome/ condominium/apartment community has been approved on the former Calstone/Peninsula Building Materials site. Plans for new Intuitive Surgical office and manufacturing facilities are underway for the parcels at the western edge of the study area as shown in Figure 1-4. A mixed-use apartment development was recently completed at 1120 and 1130 Kifer Road and an expansion

of the Intuitive Surgical campus was also recently completed at 1050 and 1127 Sonora Court, all located west of Lawrence Expressway.

Caltrain, Santa Clara Valley Transportation Authority (VTA), and the Altamont Corridor Express (ACE) shuttle provide public transit service to the study area.

Street trees are present primarily at office developments that were redeveloped in the recent years, and sidewalks and curb ramps are missing at some locations within the study area as shown in Figure 1-3. Mature street trees line portions of Kifer Road and all along Sonora Court.

Other Studies

This report supplements the Lawrence Station Area Plan, as previously noted.

An amendment to the LSAP housing component was undertaken to study an increase in housing opportunities in the plan area. In June 2018, City Council selected an alternative that would increase the density allowance for areas zoned as mixed-use north of the railroad tracks and expand areas where housing may be considered to the area east of Calabazas Creek and the commercial center at Willow Avenue and Reed Avenue. This results in an increase of 3,612 units beyond the 2,323 units originally adopted. Rezonings of certain portions of the LSAP would occur as part of the density increase as shown in Figure 1-5.

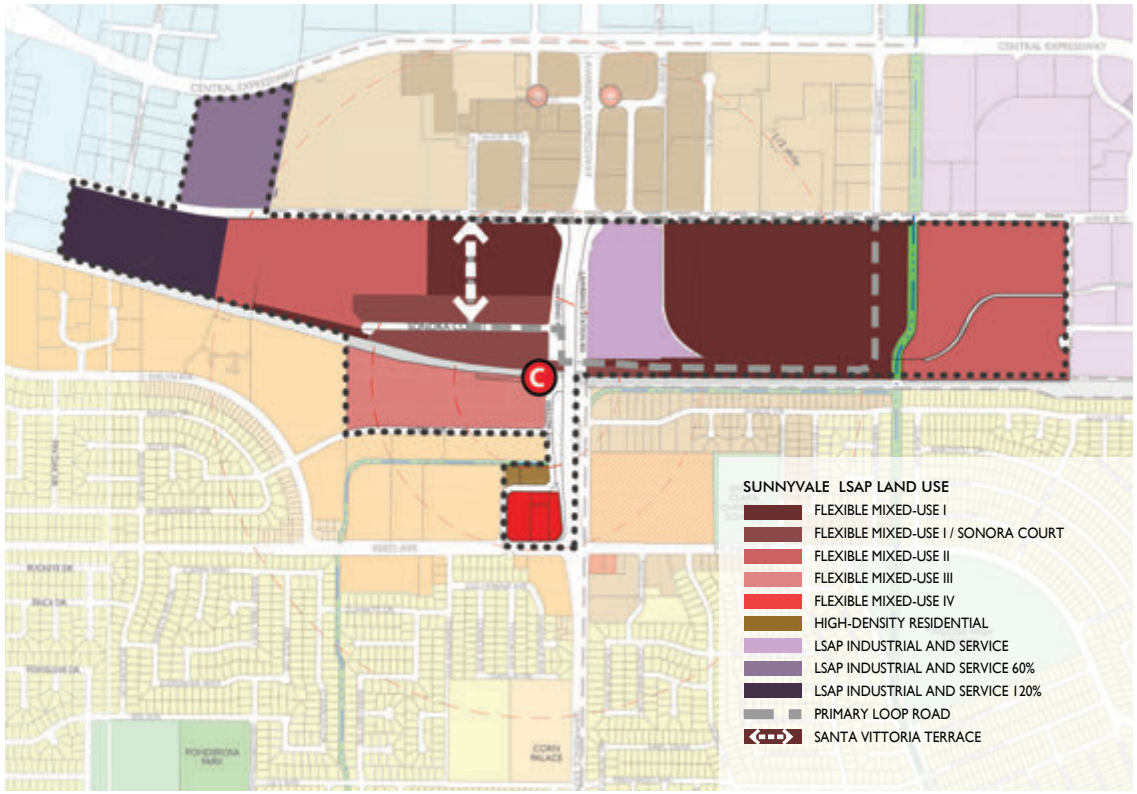
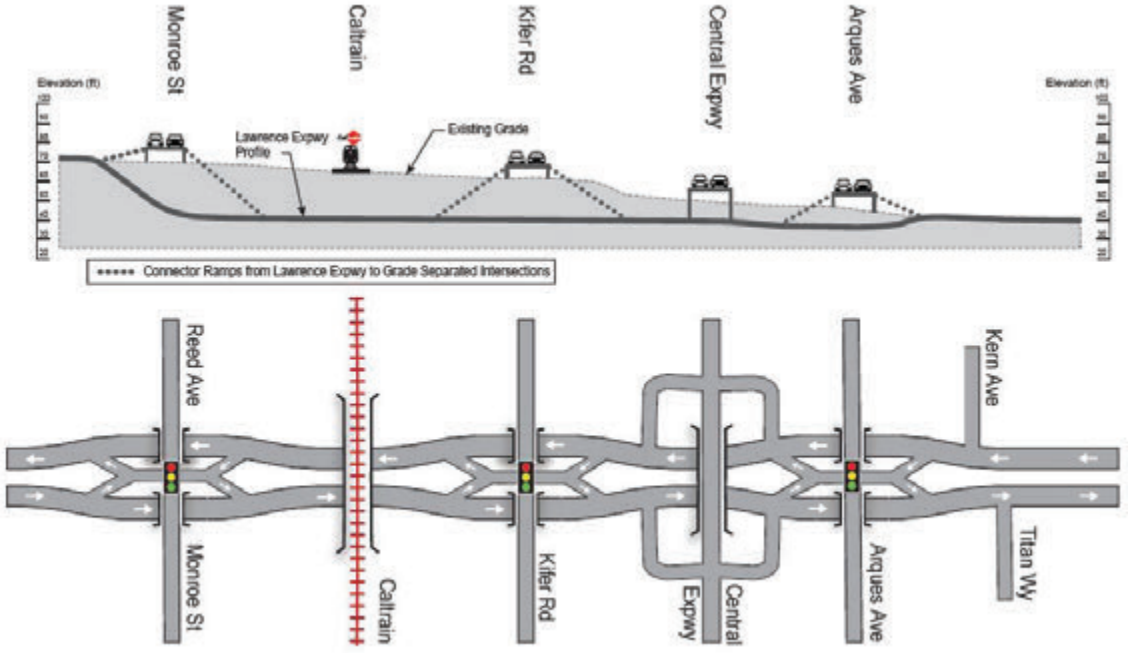


Figure 1-5. Zoning Map



Source: LEGS, 2014

Figure 1-6. Proposed Lawrence Expressway Grade-Separated Conceptual Design

The Lawrence Expressway Grade Separation ("LEGS") Concept Study was a report completed in 2014 by the County of Santa Clara that evaluated the potential for grade separations at the intersections of Lawrence Expressway with Arques Avenue, Kifer Road, and Reed Avenue/Monroe Street as shown in Figure 1-6. These were reportedly the most congested intersections along the expressway according to the 2003 Comprehensive County Expressway Planning Study, and congestion has continued to increase since then. The LEGS report presented a high-level concept that included improvements to pedestrian and bicycle circulation along the expressway. While the concept will require further study and development, including configuration of connections between the expressway and local collector roads, select elements of the proposed concept are reflected in the Sense of Place Plan.

The Sense of Place Plan takes into consideration the City of Santa Clara Bicycle Plan Update 2018 and input from traffic engineering staff at the City of Santa Clara regarding proposed improvements along the city boundaries at Kifer Road and Uranium Drive.

Overview

The report organizes neighborhood sense of place enhancements into circulation improvements and streetlife improvements. These improvements pertain primarily to the public-right-of-way, although some recommendations affect site design. Recommendations are followed by a discussion of existing City policies, potential funding sources, likely cost, and methods and timing of implementation.



Pedestrian path at Willow Avenue townhome development



2 GOALS AND OBJECTIVES

The goal of the Lawrence Area Sense of Place Plan is to guide the future character of the neighborhood by defining key physical elements and improving the streetscape experience around Lawrence Station through circulation and streetlife improvements. The term 'streetlife' in this document refers to the activation of the public street right-of-way and the public-private interface through the development and provision of amenities in public and publicly-accessible private spaces.

Objectives to improve circulation include:

- Creating new pedestrian pathways that reduce block sizes to increase walkability
- Creating a new shared-use path and buffered bike lane network to increase safety and circulation for pedestrians and bicyclists
- Enhancing safety through the addition of signalized intersections and landscaped medians at key locations along Kifer Road, which improve roadway crossings and aid traffic calming
- Addressing existing, minor pedestrian barriers such as eliminating gaps in sidewalks and missing curb ramps
- Providing grade-separated structures such as a tunnel or overcrossing to bridge major pedestrian and bicycle barriers such as the Caltrain tracks and Lawrence Expressway
- Providing new vehicular routes that provide alternatives for motorists accessing the Caltrain station and other destinations in the plan area

Objectives to improve streetlife include:

- Encouraging transit use by providing vehicular- and pedestrian-scale signage to increase visibility of and wayfinding access to the Lawrence Caltrain station
- Making public access corridors through private developments highly visible and intuitive
- Encouraging an exterior, public-street focus at private developments in lieu of developments that face the interior and are closed off to the surrounding neighborhood
- Introducing thematic elements such as site furnishings, lighting, and signage that strengthen the identity of the neighborhood
- Promoting community connections and social interactions through the provision of publicly accessible parks, plazas and seating
- Planting street trees, and creating landscaped parkway strips and landscaped medians that provide increased shade for pedestrians, bring a human scale to wide roads, and beautify the neighborhood
- Providing monumental signage to announce entries to the Lawrence Station Area neighborhood
- Providing pedestrian-scale and roadway lighting with 5G capabilities to improve safety, encourage walkability, and to enhance community connectedness

Process

The goals and objectives were developed through a process that began in August 2018 and included the review of multiple City documents and a site visit to understand existing conditions.

Documents that were reviewed included:

- City GIS information (aerial, street trees, street lights, parcel boundaries)
- Collision data
- Traffic counts for key intersections
- Land use and zoning maps
- Lawrence Station Area Plan
- Lawrence Expressway Grade Separation Concept Study
- 1120 to 1130 Kifer Road development plans
- 1050 Kifer Road development plans
- 1155 to 1175 Aster Avenue development plans



Community workshop in March 2019

- City of Santa Clara Bicycle Plan Update 2018
- Sunnyvale Urban Forest Management Plan 2014
- City design guidelines and zoning standards

Site opportunities and constraints were evaluated and documented in Figure 1-3, and several meetings were held with City staff to review draft planning documents. A meeting with the Intuitive Surgical team (owner, developer, and design consultants) for the 945, 955, 932, and 950 Kifer Road parcels was

held to understand their design objectives. Coordination with the City of Santa Clara Department of Public Works was conducted to review proposed improvements to Kifer Road, French Street, and Uranium Drive.

In March 2019 a community workshop was held to solicit public input on the changes area residents wanted to see incorporated into the plan. After a short overview of the project goals and objectives, attendees were encouraged to visit four different discussion stations. The purpose of the stations was to share the project background, to understand the types of streetscape improvements residents wanted to see, to understand how residents currently circulate through the site compared to how they would like to circulate through the site, and to learn which motif residents identified with.

Fifty people signed in at the meeting, and 28 completed questionnaires were returned at the end of the workshop. After the meeting, an online survey was





Community members sharing their thoughts at the workshop stations

made available and there were 37 respondents. Comments from the Caltrain Bicycle Advisory Committee and an employee who works in the plan area were emailed to the City as well. A more detailed summary of the public input is included in the Appendix.

In general, respondents had the following input:

1. **Which motif and architectural style do you feel should be used to enhance the character and identity of the Sense of Place plan area as a unique neighborhood?** Residents preferred trees as the motif for the neighborhood and Spanish Eclectic as the architectural style for future development.

2. **Where do you go and which route do you take to get there? Are there places you would consider problem areas?** The main destination for attendees was Costco and the main location identified as in need of improvement is the area immediately around Lawrence Caltrain Station. The intersections of Lawrence Expressway and Reed Avenue, Timberpine Avenue and Reed Avenue, and Kifer Road and Lawrence Expressway were also considered problem areas. When residents walk, bike, or take transit, they tend to take Timberpine Avenue, Willow Avenue, and Sonora Court. When driving, residents primarily take Lawrence Expressway, Timberpine Avenue, Kifer Road, Reed Avenue, Monroe Street, Central Expressway, and Wolfe Road.

3. **How can your experience on Kifer Road, Reed Avenue, Willow Avenue, and Uranium Drive be improved?** Residents primarily preferred for all these streets to be more walkable. They also wanted these streets to be more bikeable and have better wayfinding.

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3 NEIGHBORHOOD IMPROVEMENTS

Circulation Improvements

Circulation improvements provide safer routes for pedestrians and bicyclists through traffic calming measures, intersection improvements, and shared-use path networks. New vehicular routes and smaller block sizes provide more alternatives for both motorists and pedestrians and make the neighborhood more walkable. Circulation improvements are shown in Figure 3-1 and are described in more detail in this section.

Signal-Controlled Intersections

The existing traffic signals on Kifer Road are generally spaced at no more than 0.3-mile intervals. At Texas Instruments (3833 Kifer Road), the existing signal will be removed once the new traffic signal is installed at the 1020 Kifer Road driveway. A new traffic signal is also planned at the intersection of Kifer Road and Commercial Street, in conjunction with recent office project approvals nearby. The addition of other stop-controlled intersections will be determined based on location and necessity on a project-by-project basis.

A signal-controlled intersection at Kifer Road and Uranium Drive will replace the existing stop-controlled intersection to improve pedestrian and bicycle access to Uranium Drive, which will serve as the eastern connection to a Class I shared-use path. The current block length along Kifer Road from Corvin Drive to Bowers Avenue is approximately 0.5-miles, which is far longer than the typical recommended block length and a significant distance for pedestrians wishing to cross Kifer Road to detour. Providing the signal at Uranium Drive will reduce the interval to 0.3-miles, which is consistent with the maximum interval between signal-controlled intersections elsewhere in the plan area.

Santa Clara Valley Transportation Authority (VTA) Bus Stops

VTA has identified the following bus stops as in need of upgrades in order to meet current ADA and VTA standards:

- Eastbound Kifer Road opposite of Commercial Street
- Eastbound Kifer Road opposite of San Ysidro Way
- Eastbound Kifer Road opposite of Copper Road

Recommended improvements at each of these stops are:

- An 8’ x 40’ passenger pad per VTA standards to provide sufficient circulation and ADA access
- A 10’ x 55’ minimum bus pad per VTA standards to maximize pavement longevity

Additional bus stop standards and policies can be found in the following documents:

- VTA Bus Stop and Passenger Facilities Standards
- VTA Transit Passenger Environmental Plan
- VTA Bus Stop Placement, Closures, and Relocations Policy

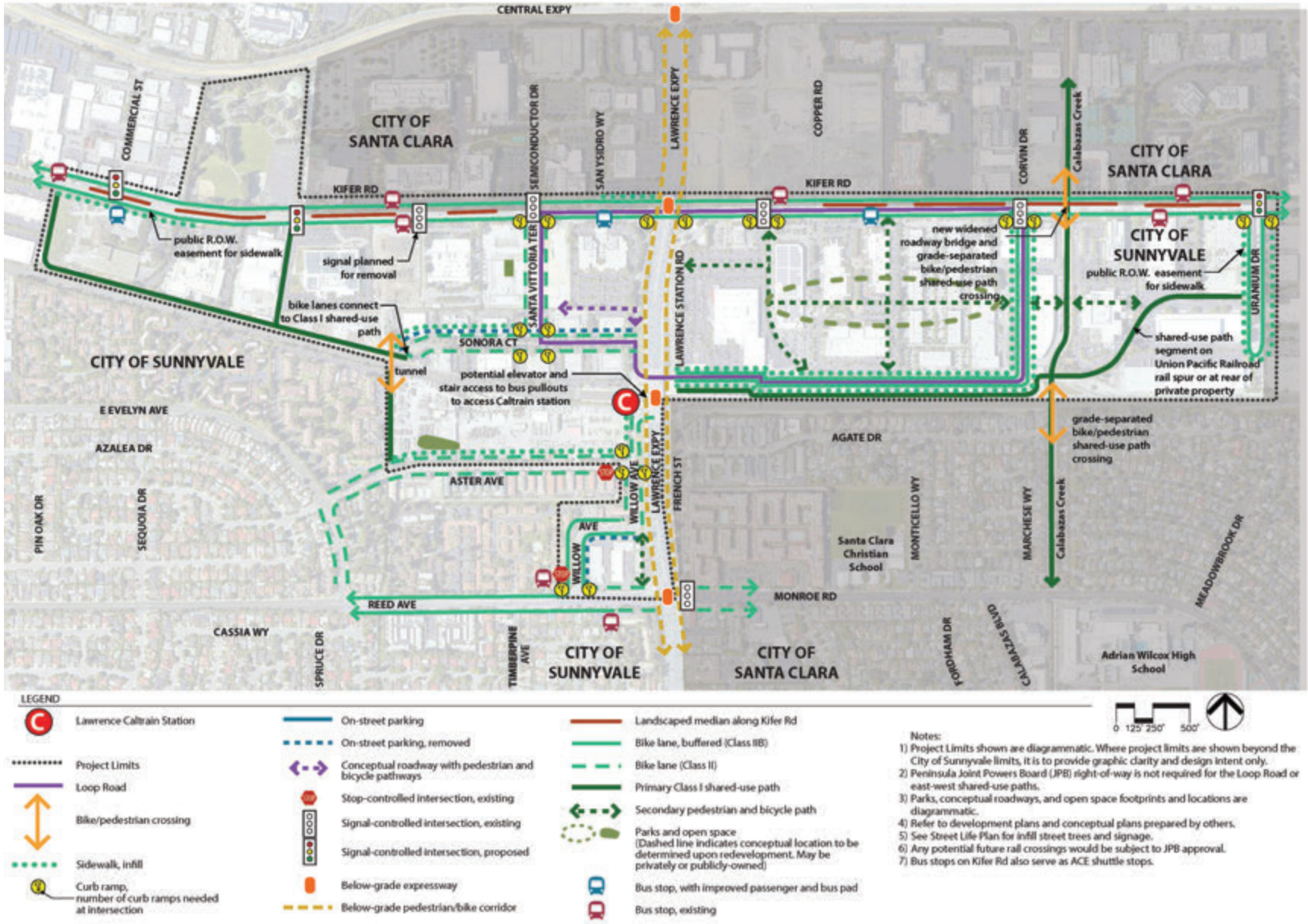


Figure 3-1. Sense of Place Plan
All improvements shown are conceptual and subject to further analysis and refinement.

Primary Shared-Use Paths

A network of primary Class I shared-use paths will provide pedestrians and bicyclists routes that are physically separated from vehicles and an alternative to the use of on-street bike lanes. The path network west of Lawrence Expressway runs adjacent to the Caltrain tracks along the back end of parcels owned by Intuitive Surgicial. A section of the path that connects to Sonora Court was recently completed on the 1020 Kifer Road site. The path segment running east-west to the east of Lawrence Expressway is envisioned to be located within the dedicated 12'-0" path easement on the Extra Space Storage parcel at 106 Lawrence Station Road. From Calabazas Creek, it is envisioned to continue eastward on the rail spur property. If locating the path within the rail property is determined to be infeasible, the path shall be located at the rear of the parcels fronting Kifer Road. The path will also run north-south along Calabazas Creek, and an undercrossing should be provided at Kifer Road. This crossing would be a joint venture between the City, City of Santa Clara, and Valley Water.

A typical section of the shared-use path consisting of a 12-'0" wide paved path within a 20'-0" minimum shared-use path easement is shown in Figure 3-2. Lighting shown in Figure 3-3 should be provided along the path corridor to support commuter uses. Landscaping, including shade trees, and amenities like seating should be provided to provide a comfortable and inviting environment for path users. The maintenance of all landscaping,

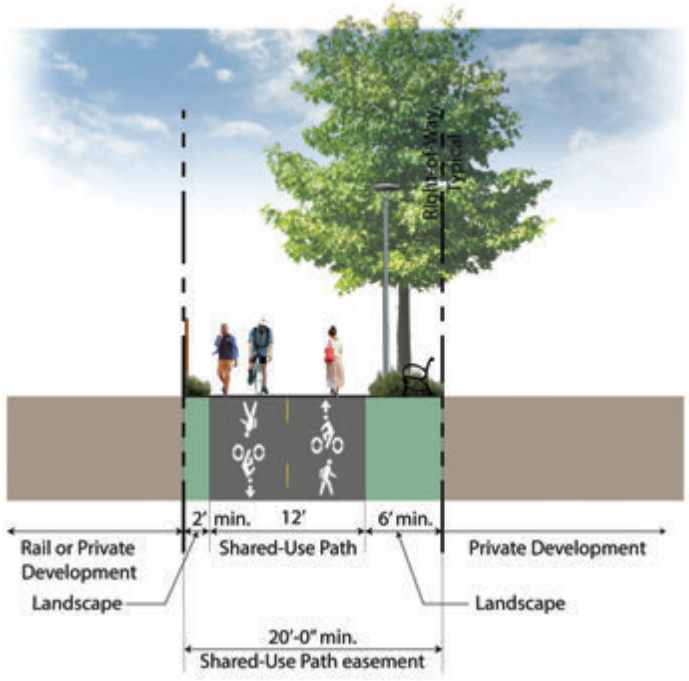


Figure 3-2. Typical Shared-Use Path Cross Section
All improvements shown are conceptual and subject to further analysis and refinement.



Source: Visionaire Lighting

Shared-use path lighting shall be Visionaire Lighting Premier II PRE-2-L-T2-32LC-3-3K-UNV-PT-SL-DIM-MS, POLE RNTA4RS-188-15'-AKB-343-T4R-SL, 15'-0" mounting height, single-mount pole, type II, cast aluminum housing, with silver metallic finish

Figure 3-3. Shared-Use Path Lighting

lighting, and amenities are the responsibility of individual property owners along the path.

Secondary Pedestrian and Bicycle Pathways

The secondary pedestrian and bicycle pathways break up large blocks on Kifer Road and provide shortcuts for pedestrians and bicyclists within the area east of Lawrence Expressway by reducing the block size from upwards of 1500' to 500' to 800'. The smaller block size is more walkable and convenient for pedestrians.

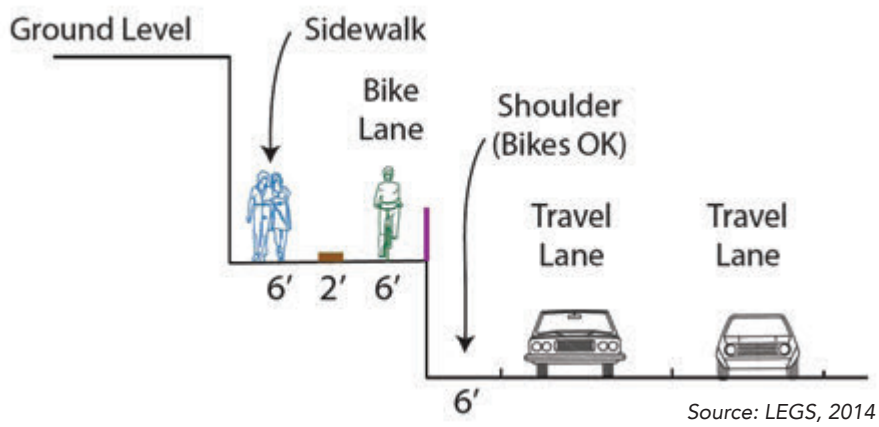
The pathways would connect the southernmost portion of the Loop Road with Kifer Road and would be similar to the shared-use path section shown. The pathways differ from the shared-use paths because their locations are only conceptual and would be determined when the parcel undergoes redevelopment, and the minimum paved width would be 10'-0" instead of 12'-0". Where conditions dictate, pedestrian-only access may be appropriate. Curb ramps should be provided where these conceptual pathways intersect with sidewalks.

Lawrence Expressway Grade Separation

A below-grade expressway and below-grade pedestrian and bicycle corridor is envisioned in the County of Santa Clara's Lawrence Expressway Grade Separation Concept Study ("LEGS") from 2014.

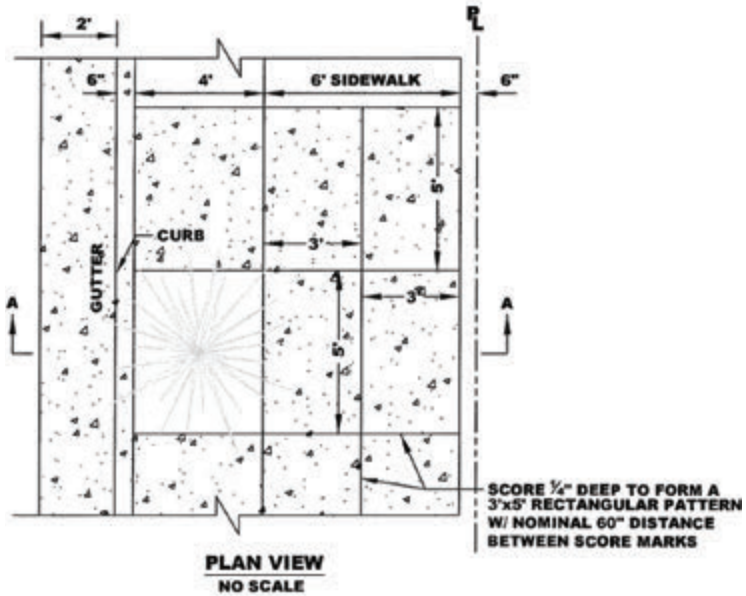
The below-grade expressway can improve east-west circulation on Kifer Road and Reed Avenue by prioritizing local traffic. Motorists traveling at higher-speeds would be kept separate from those roadways. The existing free right-turn lanes and "pork chop" or triangular raised islands between the free right-turn lane and the through lane, cater towards turning vehicles and tend to impede pedestrians and bicyclists. They currently provide motorists direct access to Lawrence Expressway at-grade and if they are removed, Kifer Road and Reed Avenue could be safer for pedestrians and bicyclists to cross.

The pedestrian and bicycle corridor shown in Figure 3-4 runs parallel to the below-grade expressway, and it is elevated five or six feet above the vehicular roadway to provide a safer pedestrian and bicyclist experience. This grade difference also results in less elevation change between the sidewalk and bike lanes on the collector roads and the below-grade corridor. The concept may also incorporate an elevator to bring people up to street-level and up to transit level. All information on the grade separation is conceptual



Source: LEGS, 2014

Figure 3-4. Lawrence Expressway Bicycle and Pedestrian Corridor



Source: City of Sunnyvale Standard Details for Public Works Construction, Revised 2019

Figure 3-5. Standard City Tree Well Sidewalk Detail

and subject to change by the County pending further refinement. However, the County's plan indicates that land dedications may be required along the expressway to implement the project.

Street-Specific Improvements

The current City standards for sidewalks is a 10'-0" minimum overall width measured from back of curb which consists of a 5'-0" to 6'-0" minimum paved width, and a 4'-0" by 5'-0" tree well, as shown in Figure 3-5. This provides a cohesive aesthetic throughout the City and offers a comfortable walkway width, shade, and a visual and physical buffer from the roadway.

Street-specific treatments are discussed below and may vary from these standards. Proposed road sections are conceptual-level diagrams and further refinement is required prior to construction. Some of the improvements shown will be implemented as part of capital improvement projects while others will likely occur when adjacent parcels redevelop.

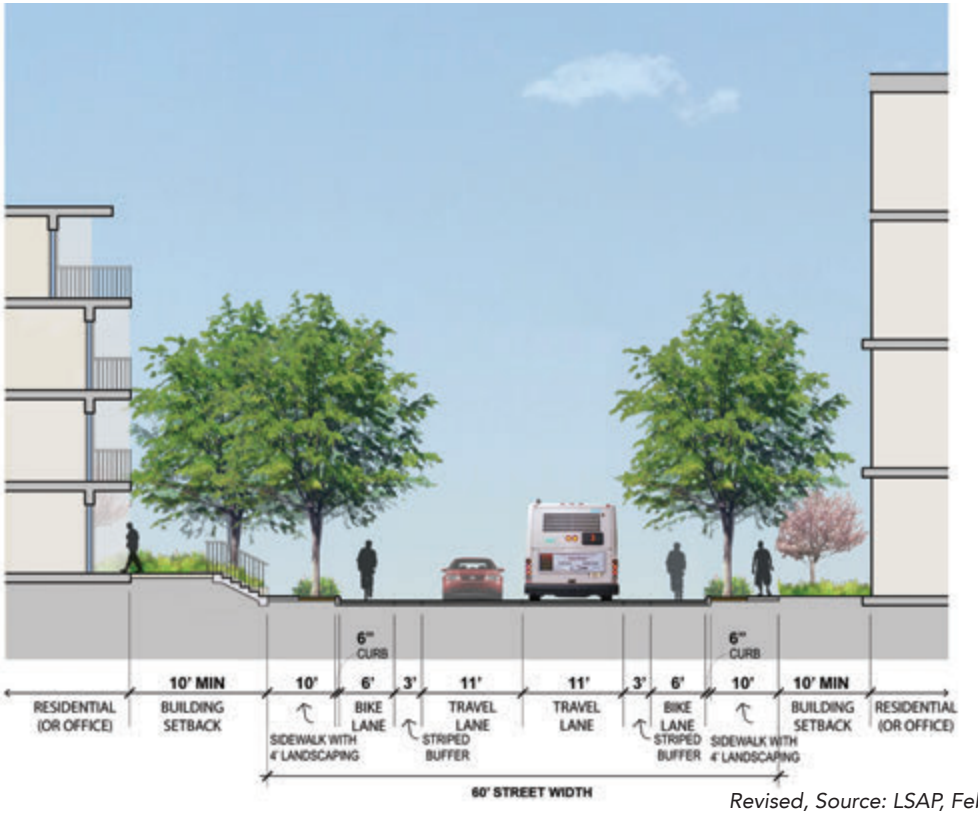
San Zeno Way & Lawrence Station Road

Given the uncertain extent of the Lawrence Expressway Grade Separation improvements, the street sections for San Zeno Way and Lawrence Station Road will remain largely the same with new sidewalk and street tree improvements in accordance with the standard noted in this plan. New street lights should be provided along both streets.

Loop Road

The Loop Road is primarily a privately-owned and maintained collector road that provides north-south access between Kifer Road and the station. It enables motorists traveling east-west along Central Expressway to readily access the station via its eastern arm, East Loop Road, which aligns with Corvin Drive. The typical section is shown in Figure 3-6. It also provides important transit connections to the station for bus riders and bicyclists.

The western arm of the Loop Road is Santa Vittoria Terrace, a pedestrian-friendly retail street which will connect to Sonora Court, which continues with direct access to the station via San Zeno Way. Parallel parking should be provided along Santa Vittoria Terrace to encourage mixed use/ retail development. Santa Vittoria Terrace would have a 15-foot wide pedestrian zone due to higher anticipated pedestrian volumes. The 15 feet is inclusive of a five-foot building zone, minimum paved pedestrian zone of six feet, and four-foot wide street buffer zone. See Figure 3-7



Revised, Source: LSAP, February 2015

Figure 3-6. East Loop Road, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement.

for a typical cross section of the street. The proposed location for the eastern arm of the Loop Road is the self-storage property located at 106 Lawrence Station Road. The development rights on this parcel could be transferred to the developer that is building the improvements on an adjacent parcel. If that is not feasible, the road would be located at the rear of the parcels fronting Kifer Road. The Loop Road would then utilize the existing Lawrence Station Road right-of-way to connect to the station and then utilize the San Zeno right-of-way to connect westward to Sonora Court.

It is important to note that the location of the Loop Road through private property on Figure 3-1 is conceptual, and the final location, width, and alignment will be determined upon review of development projects on sites in and near the path of the road.

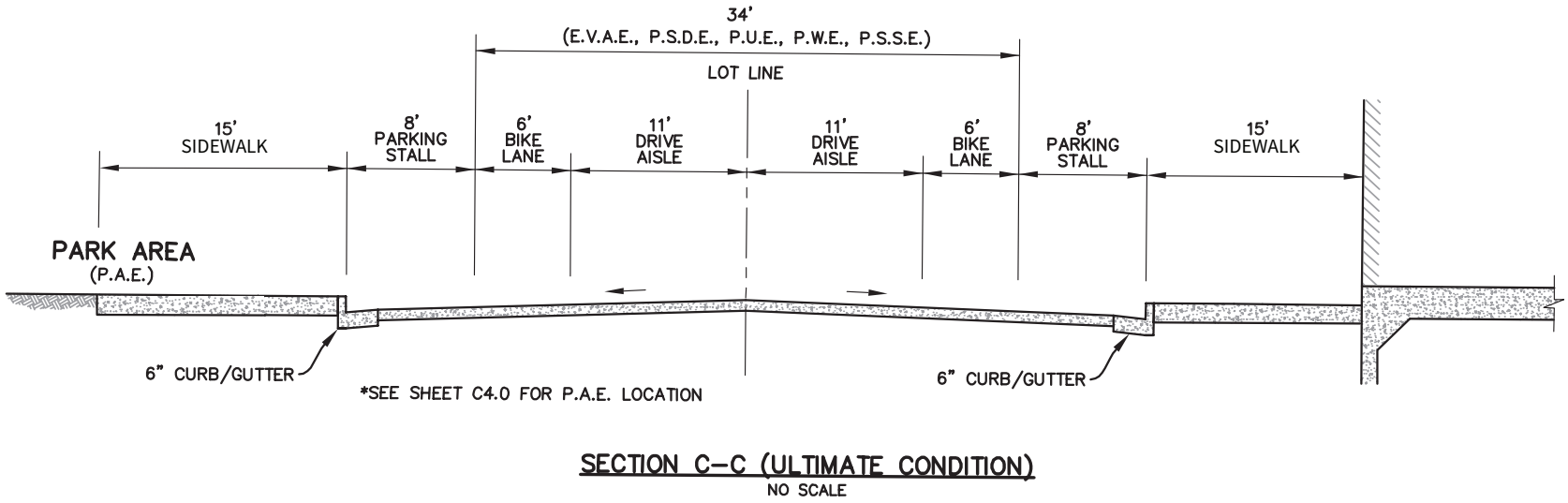


Figure 3-7. Santa Vittoria Terrace, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement.

Kifer Road

Previously, the LSAP had proposed a road diet on Kifer Road that would remove one travel lane from each side of the road. Due to the increase in housing density and higher traffic volumes projected, a road diet on Kifer Road is no longer proposed.

The proposed road section in Figure 3-8 retains two travel lanes in each direction. Kifer Road runs along the city boundary and is disproportionately shared between City of Sunnyvale and City of Santa Clara, so proposed improvements shown beyond the City of Sunnyvale limits are for graphic clarity and to show design intent only. Actual improvements would be subject to City of Santa Clara approval. Kifer Road widths vary both east and west of Lawrence Expressway. Depending on existing widths, the City will require right of way

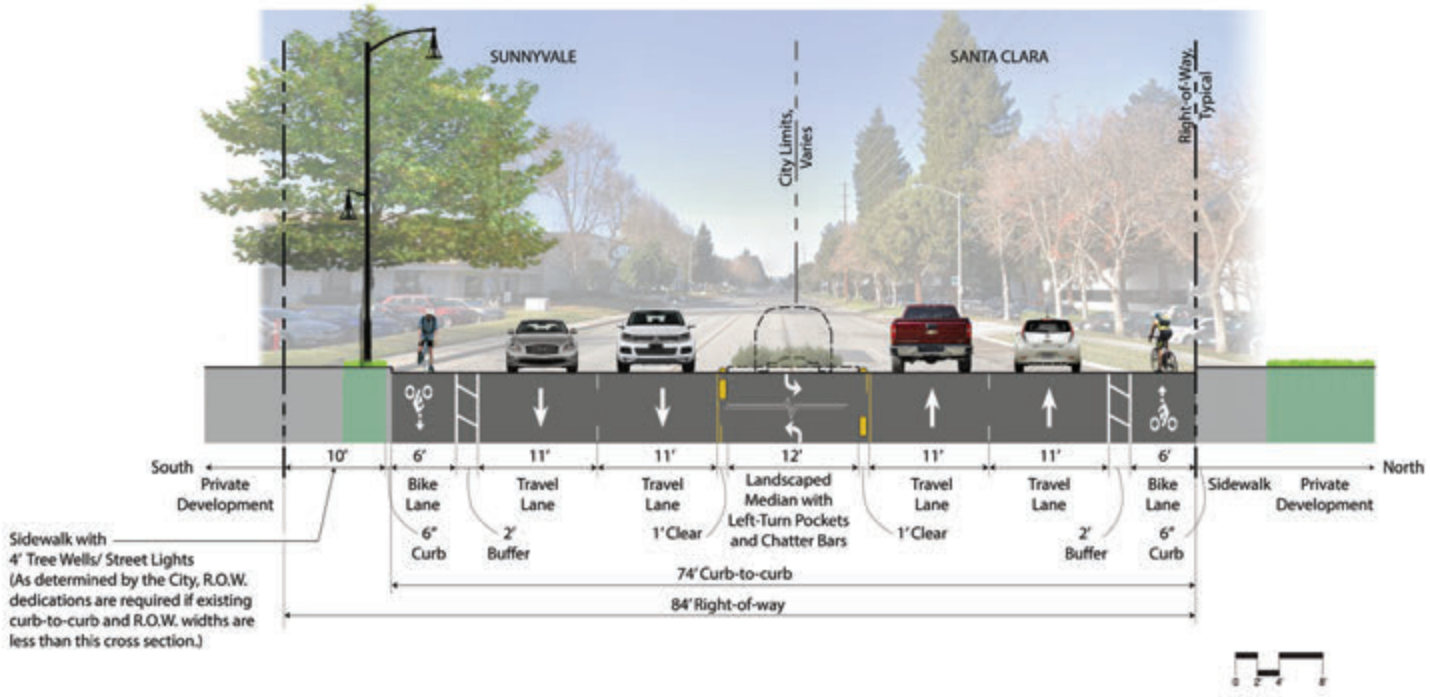


Figure 3-8. Kifer Road, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement. The right-of-way width varies along Kifer Road.

dedications upon redevelopment for improvements shown in Figure 3.8.

Specific recommendations for Kifer Road include the following:

- Sidewalks: Sidewalks shall be a 10'-0" minimum overall width and a 6'-0" minimum paved width. Street lights and 4'-0" minimum tree wells shall also be provided. Sidewalk dedications may be required to accommodate proposed improvements as shown.
- Bike lanes: Bike lanes shall be 6' wide with 2' wide buffers.
- Landscaped median and left-turn pockets: A 12' wide landscaped median will calm traffic by visually reducing the width of the road, beautifying and greening the road through landscaping, and providing left-turn pockets. In order to balance improved traffic calming and access to driveways, left turn pockets would be provided as determined by the City. No trees shall be planted in the landscaped medians east of Lawrence Expressway due to the presence of underground utilities along the center of Kifer Road.
- Travel Lanes: The 12'-0" wide center double left turn lane is removed and replaced with a 12' wide landscaped median with 11' wide travel lanes on either side of the median, and 11' wide travel lanes alongside bike buffers as shown in Figures 3-8, 3-9, and 3-10.

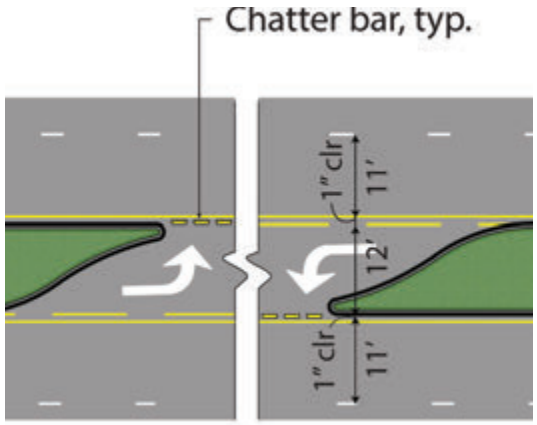


Figure 3-9. Kifer Road, Typical Left Turn Pocket
All improvements shown are conceptual and subject to further analysis and refinement.

Uranium Drive

Uranium Drive runs along the city boundary between the City of Sunnyvale and the City of Santa Clara. Proposed improvements shown beyond the City of Sunnyvale limits are for graphic clarity and to show design intent only. Actual improvements would be subject to City of Santa Clara approval.

Specific recommendations for Uranium Drive include the following:

- Sidewalks: Existing mature redwood trees on the west side shall remain. In order to accommodate a sidewalk behind the trees, a 6'-0" sidewalk dedication will be required as shown in Figure 3-11. Should the redwood trees be in decline, the City may re-evaluate and implement 4'-0" minimum tree wells instead as shown in Figure 3-10, which would allow the 2'-0" bike lane buffer to be increased to 3'-0", if a 2'-0" sidewalk dedication is granted. The east side is in the City of Santa Clara, and sidewalks were recently

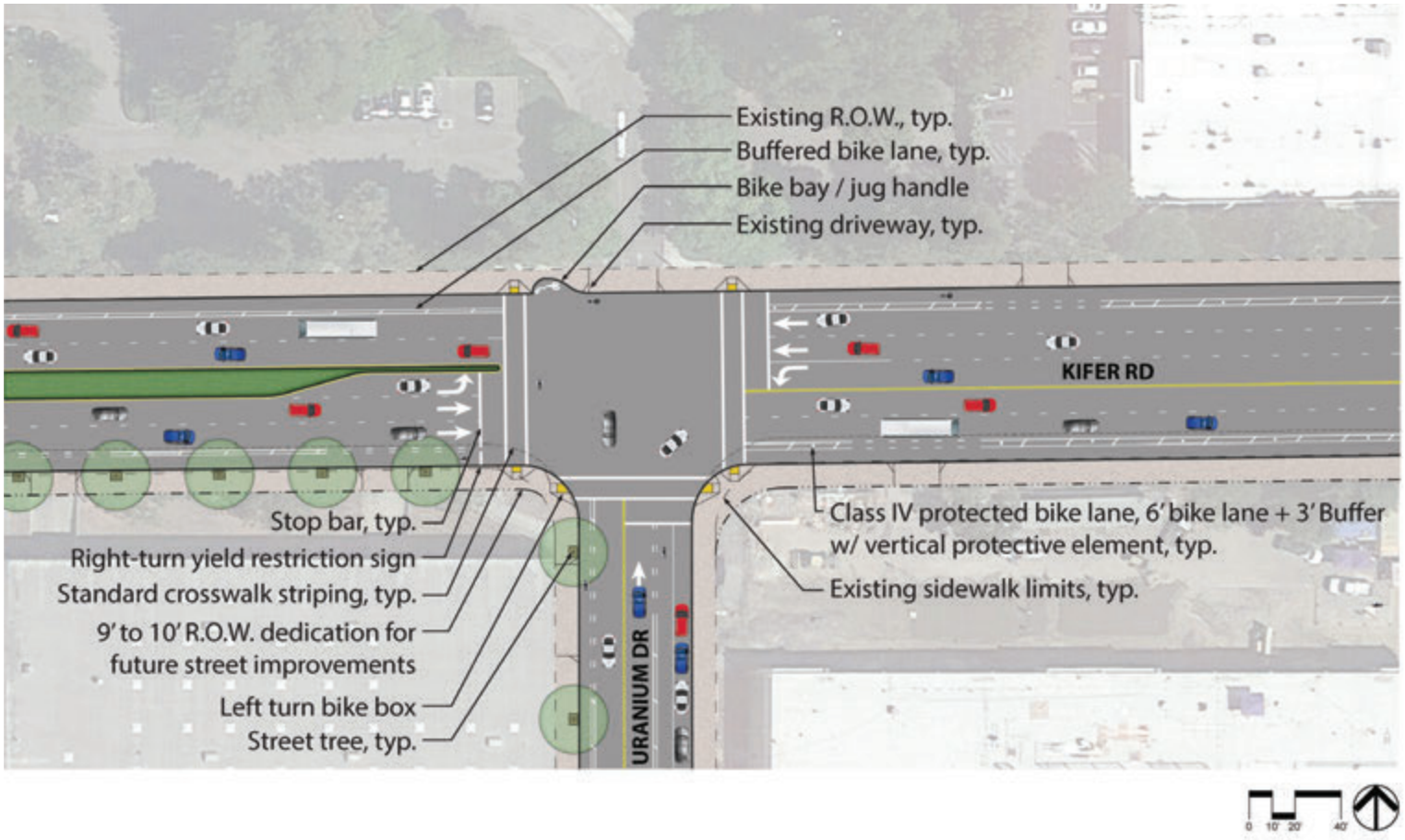


Figure 3-10. Kifer Road and Uranium Drive Plan
All improvements shown are conceptual and subject to further analysis and refinement. Improvements shown beyond project limits are for graphic purposes only.

installed along the northern segment of Uranium Drive.

- Bike Lanes: A buffered bike lane shall be provided on the west side of Uranium Drive, composed of a 6'-0" bike lane and a 3'-0" striped buffer. A buffered bike lane is also shown on the east side within the City of Santa Clara.
- Parking: On-street parking is shown on the City of Santa Clara side for the use of the existing industrial developments. Sunnyvale parcels on the west side are required to provide onsite parking, so on-street parking on the west side of Uranium Drive is not needed.
- Travel Lanes: Shall be 12'-0" minimum in width to accommodate large trailers and trucks that currently use Uranium Drive.

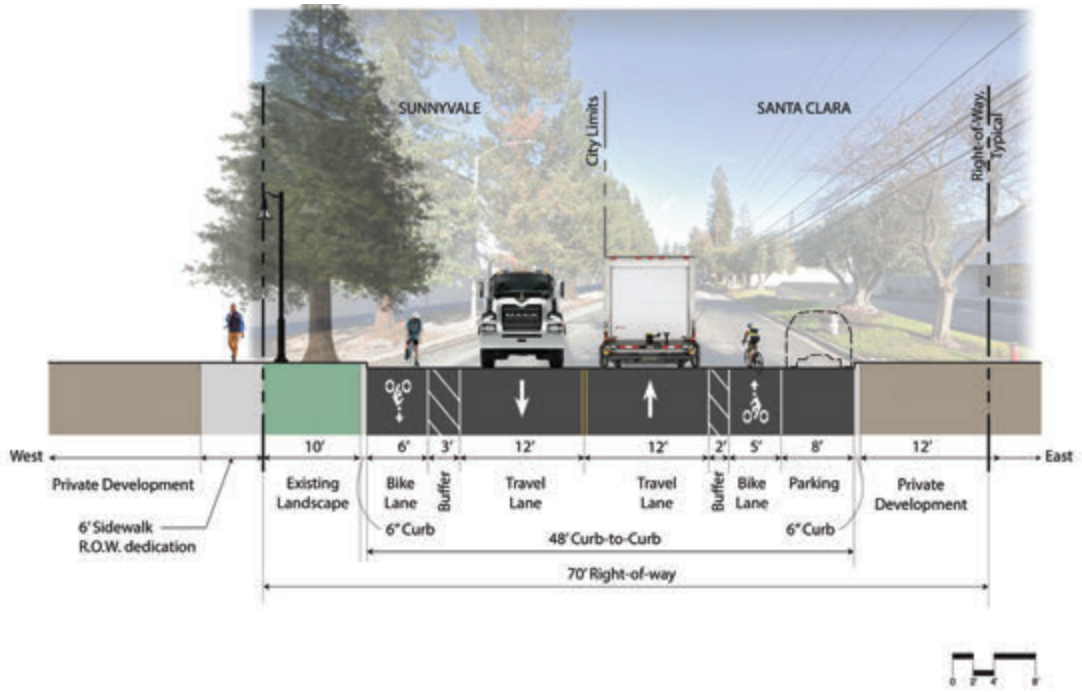


Figure 3-11. Uranium Drive, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement. Improvements shown beyond project limits are for graphic purposes only.

Reed Avenue

Specific recommendations for Reed Avenue include the following:

- Sidewalks: Shall be 10′-0″ minimum overall width, composed of 6′-0″ minimum paved width and 4′-0″ minimum tree wells as shown in Figure 3-12. Existing parkway strips and paved sidewalk width along single family residences and existing magnolia trees along apartment complex frontages will likely remain.
- Bike Lanes: Bike lanes shall be City standard 6′-0″ minimum width with a 3′-0″ striped buffer on both sides of the road. Class IV protected bike lanes were evaluated but are not recommended due to the large number of existing driveways on Reed Avenue, where left turns from the existing residences would be restricted.
- Parking: On-street parking shall be retained on both sides of the road to serve the residents as shown in Figures 3-12 and 3-13.
- Travel Lanes: Reduce existing 18′-0″ wide lanes to 11′-0″ to accommodate buffered bike lanes.

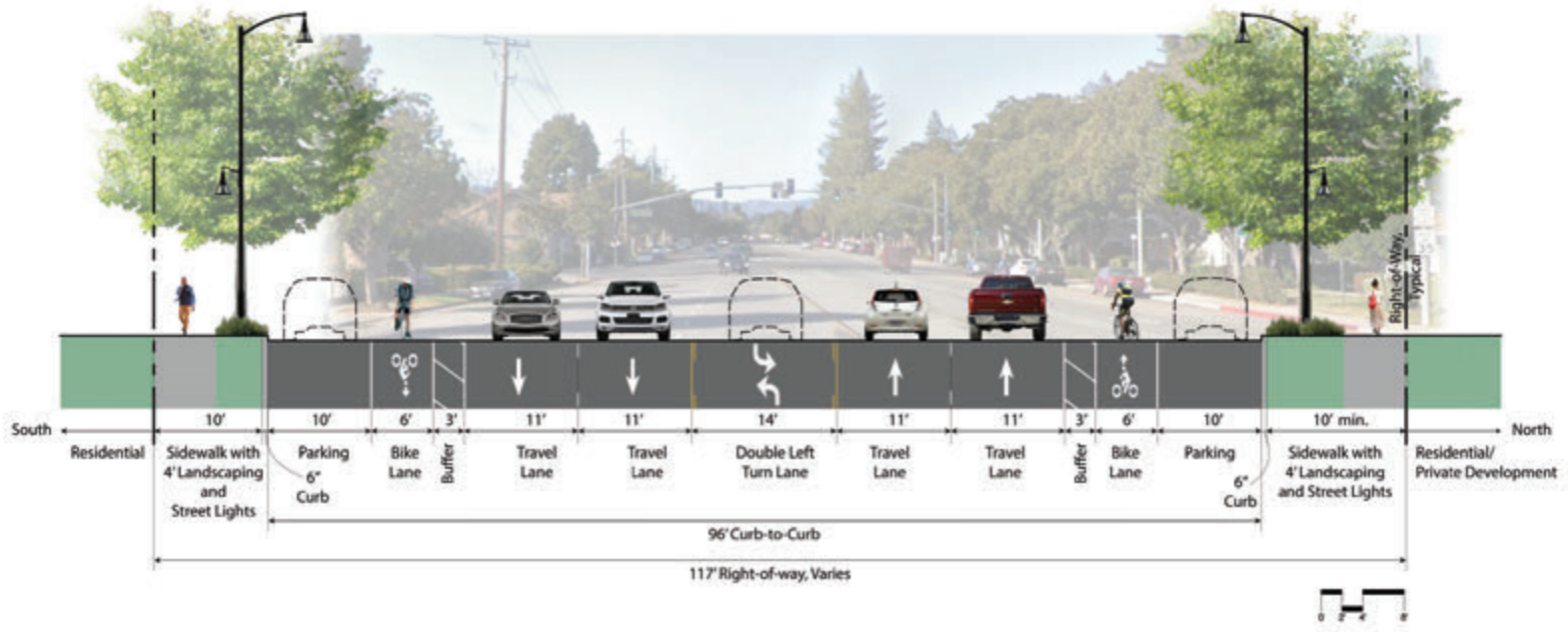


Figure 3-12. Reed Avenue, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement.

Willow Avenue

The condition shown in Figures 3-13 and 3-14 represents Willow Avenue at Reed Avenue when the parcels northeast of the intersection are redeveloped and a sidewalk dedication can be obtained from the developer. Before those parcels are redeveloped, the City will install bike lanes along Willow Avenue. This will be an intermediate condition as it is not contingent upon changes to the existing sidewalk alignment. The portion of Willow Ave adjacent to Lawrence Expressway has a narrower curb-to-curb width, so it requires a different treatment as shown in Figure 3-15.

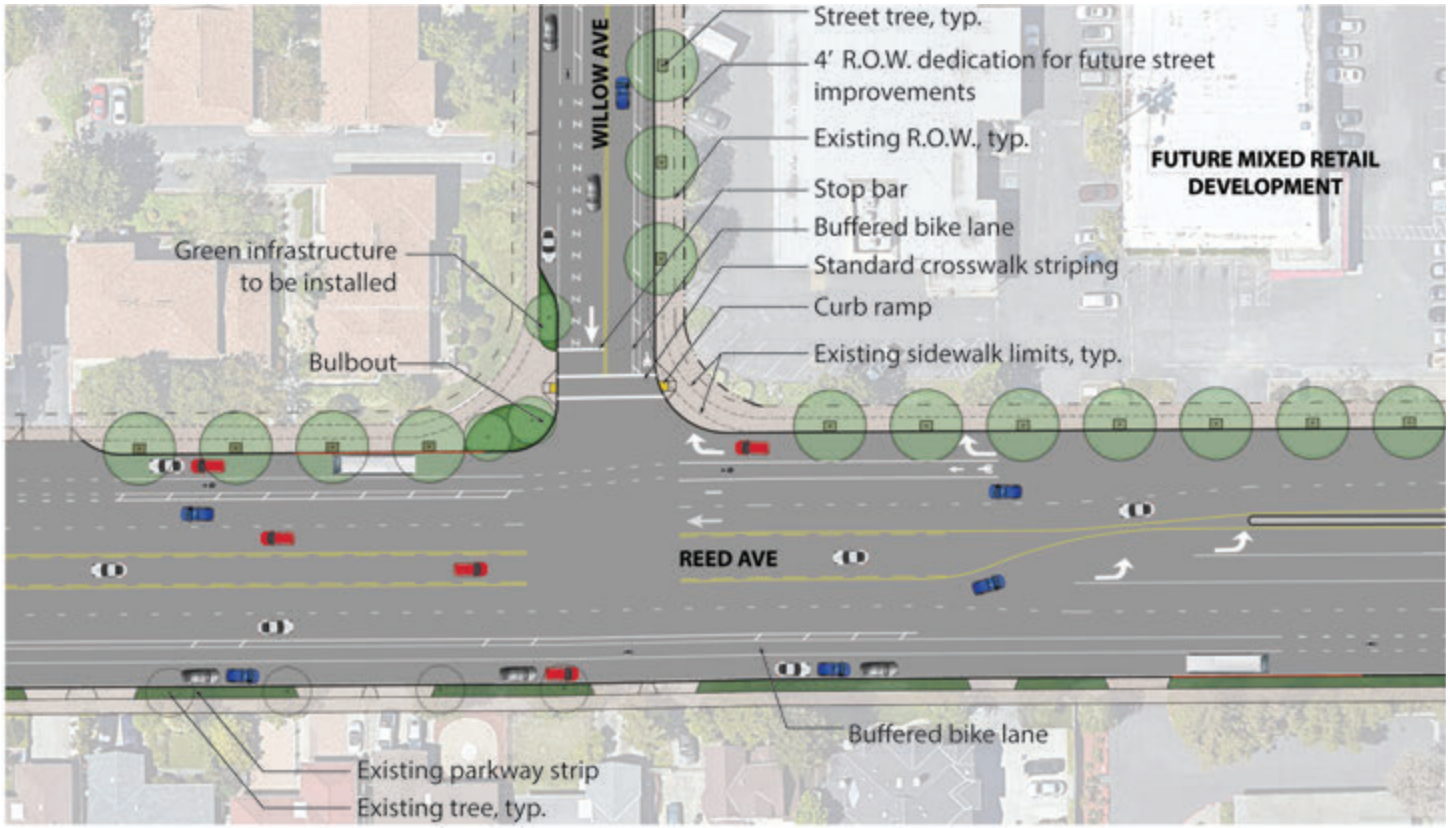


Figure 3-13. Willow Avenue and Reed Avenue Plan
All improvements shown are conceptual and subject to further analysis and refinement.

Specific recommendations for Willow Avenue include the following:

- Sidewalks: Sidewalks shall be 10'-0" minimum overall width, composed of a 6'-0" minimum paved width and 4'-0" minimum tree wells on the east side. While the City standard is to provide tree wells between the paved path and the roadway, in this case the paved path is shown adjacent to the roadway on the west side of Willow Avenue in order to preserve the mature ginkgo trees. A sidewalk bulbout, reduced turning radius, crosswalk striping, and a stop bar shall be installed to create a safer pedestrian crossing experience as shown in Figure 3-13.

- Bike Lanes: The City will install 6'-0" wide bike lanes along the entire length of Willow Avenue, but these lanes will not have striped buffers as the existing road width is too narrow. When the adjacent office and retail parcels redevelop, a 3'-0" wide bike buffer shall be installed on each side of the road along the southern portion of Willow Avenue. A 4'-0" sidewalk dedication would be required to accommodate proposed improvements shown in Figures 3-13 and 3-14.

- Bike Lanes at Caltrain Station: As Willow Avenue approaches the Caltrain station, bike lanes transition to sharrows in order to provide a dedicated Caltrain passenger loading zone on the City side of the boundary and on-street parking on the Santa Clara side of the boundary as shown in Figure 3-15.

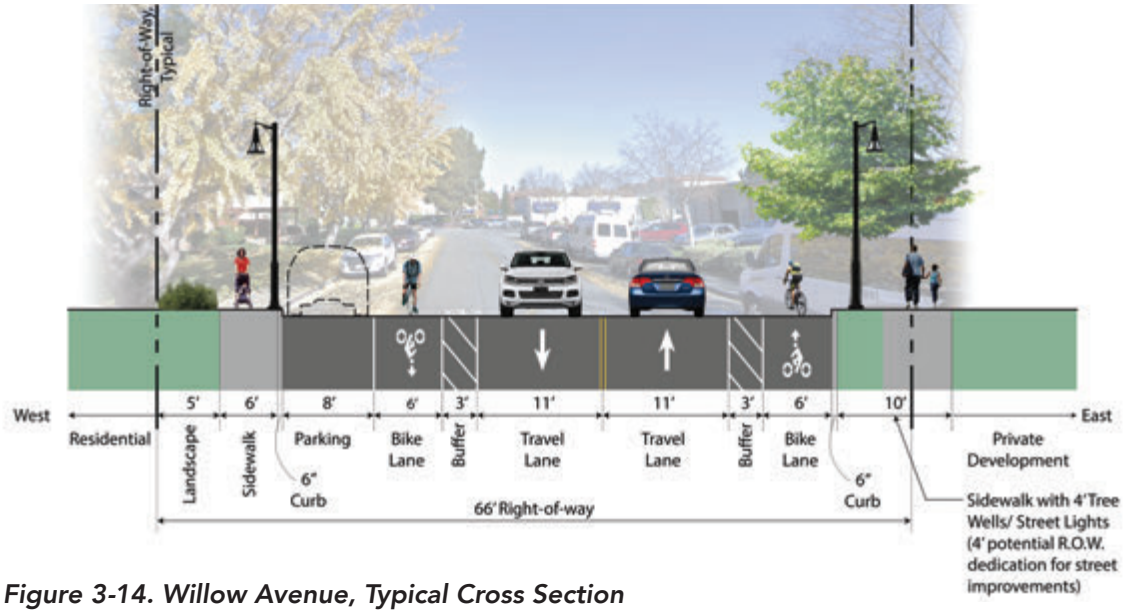


Figure 3-14. Willow Avenue, Typical Cross Section
All improvements shown are conceptual and subject to further analysis and refinement.

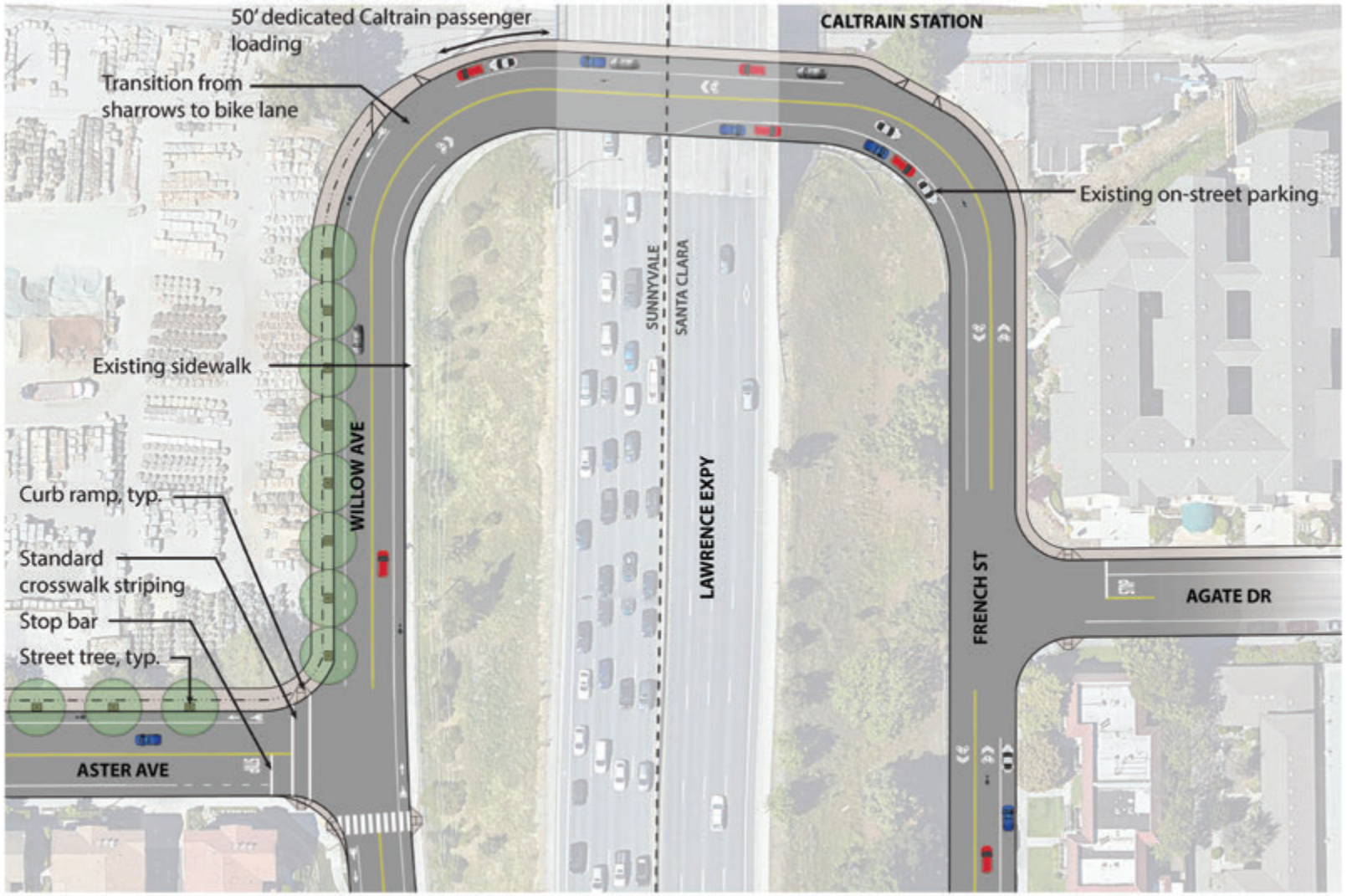
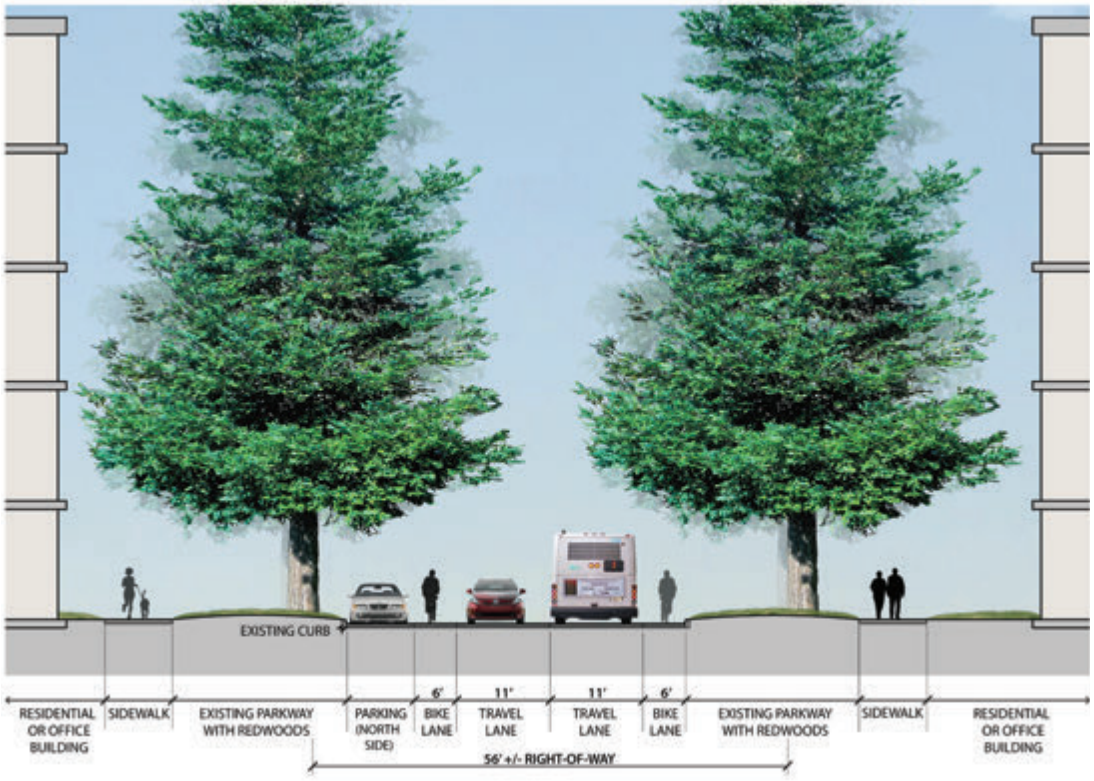


Figure 3-15. Willow Avenue and French Street Plan
All improvements shown are conceptual and subject to further analysis and refinement. Improvements shown beyond project limits are for graphic purposes only.

- Parking: On-street parking will be retained on both sides in the interim, but in the longer-term, on-street parking shall be retained on the west side only to serve residents of the existing apartment complex. The future development would provide onsite parking, so removing parking on the east side of Willow Avenue would provide a more open and pedestrian-friendly experience.
- Travel Lanes: Existing 12'-0" wide travel lanes are reduced to 11'-0" to accommodate buffered bike lanes.
- "No Left Turn" Sign: A "No Left Turn" sign is required at the intersection of Willow Avenue and Reed Avenue as part of the redevelopment project at the former Calstone/Peninsula Building Materials site. This sign would prohibit left turns from Willow Ave, Monday through Friday, 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m., excluding holidays.



Revised, Source: LSAP, February 2015

Figure 3-16. Sonora Court, Typical Cross Section Looking East
All improvements shown are conceptual and subject to further analysis and refinement.

Sonora Court

In order to preserve the mature redwood and cedar trees along Sonora Court, improvements shall minimize disturbance to the trees.

Specific recommendations for Sonora Court include the following:

- Sidewalks: Sidewalk easements shall be provided when parcels develop in order for a new sidewalk to be constructed behind the existing trees. Conceptual pedestrian access improvements for Sonora Court are shown in Figure 3-16.
- Bike Lanes: Bike lanes shall be City standard 6'-0" wide on both sides of the road. In order to preserve the existing trees and retain some on-street parking capacity, the bike lanes will not have striped buffers. Bike lane installation involves the following:
  - Removal of existing striping and slurry seal
  - Installation of signage on both sides of the street:
    - Bike lane R81 (CA) signs installed on the north side of the street
    - Combination R26/R81 no parking any time/bike lane signs installed on the south side of the street
  - Striping of the Class II bike lanes on both sides of the street, as well as the associated bike markings
  - Striping of centerline on Sonora Court, as directed by the City
- Parking: On-street parking will be removed from the south side and retained on the north side in order to continue providing parking for businesses, residents, and Caltrain passengers.
- Travel Lanes: Travel lanes shall be City standard 11'-0" wide in each direction.

Streetlife Improvements

Streetlife improvements promote an active and engaging space within the public realm. By making the street more comfortable, interesting, and easy to navigate for pedestrians and bicyclists, streetlife improvements can encourage residents to get out of their cars and use non-vehicular modes of travel. These improvements are shown in Figure 3-17 and are described in more detail in this section.

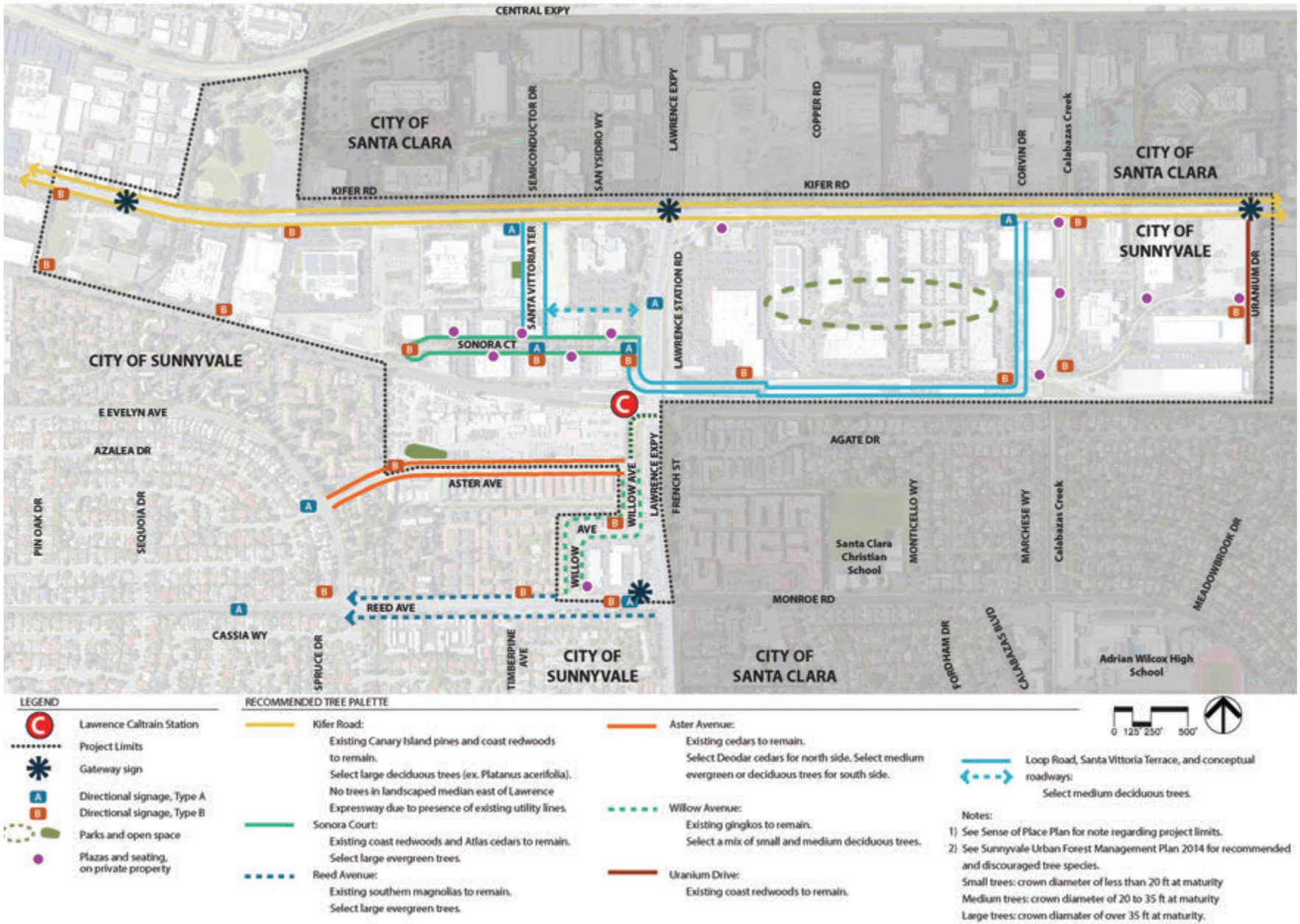
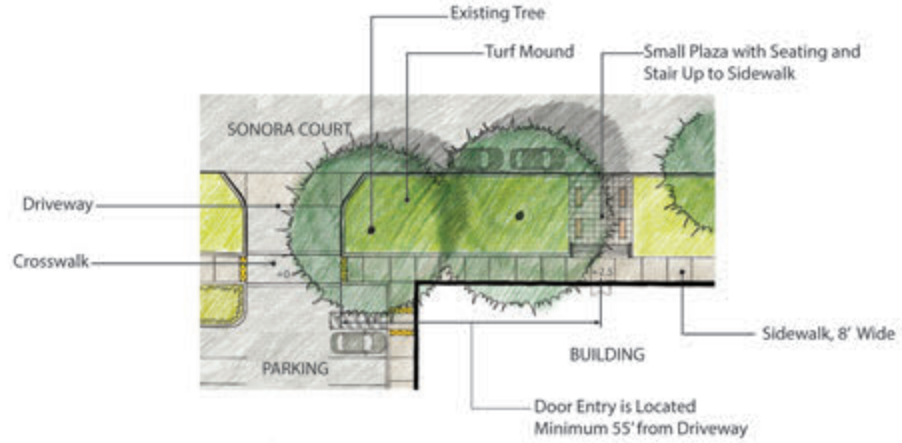
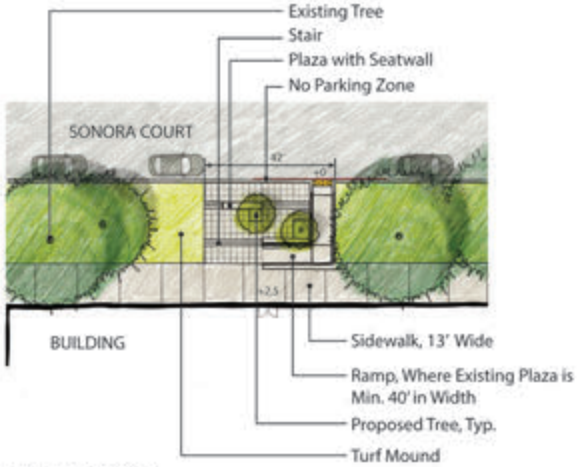


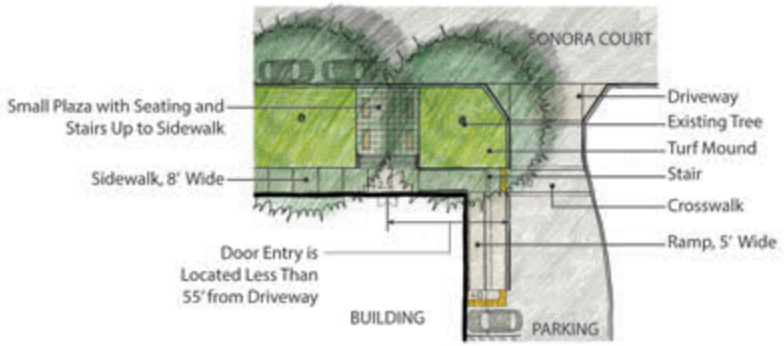
Figure 3-17. Streetlife and Wayfinding Plan
All improvements shown are conceptual and subject to further analysis and refinement.



SCENARIO A
Ramp Along Building Frontage



SCENARIO C
Ramp at Plaza



SCENARIO B
Ramp Along Building Side



Existing plaza and walkway at Sonora Court

Figure 3-18. Sonora Court Pedestrian Access Improvements
All improvements shown are conceptual and subject to further analysis and refinement.



BENCH



BIKE RACK



TRASH RECEPTACLE

Figure 3-19. Site Furnishings

Plazas and Seating

Plazas and seating shown on the plan are envisioned to be privately-owned, publicly-accessible spaces. The locations shown on Sonora Court suggest that the existing plazas can be redeveloped to accommodate increased activity from the recently completed Class I trail segment and loop road at Santa Vittoria Terrace. Plazas should incorporate adequate protection of existing trees and meet accessibility requirements. Each scenario in Figure 3-18 highlights how an accessible public sidewalk can be provided given varied site conditions, and the existing locations of private walkways will be made public through sidewalk easements. Suggested plaza and seating locations along Calabazas Creek and east of the creek are located at shared-use path nodes. Site furnishings shown in Figure 3-19 are envisioned to be located on private property. The furnishings balance comfort and function, where metal provides durability and a black finish provides an unobstrusive and timeless look.

Gateway and Wayfinding Signage

Gateway signs are monumental structures that provide a visual cue that people are entering the Lawrence Station Area, and gateways are shown at each of the primary northern, southern, eastern, and western entrances to the Sense of Place Plan area. The pylon form and modern eclectic aesthetic of the gateway signs was designed based on the architectural style of the recent developments in the plan area. The gateway will consist of solid metal panels containing the city logo and area name in dimensional letters over a structural core as shown in Figure 3-20. The conceptual dimensions are 16’-0” height by 3’-6” width by 1’-0” depth. The final details will be determined by the City.

Directional sign Type A is vehicular scale and directs motorists to the Lawrence Caltrain Station, while directional sign Type B is pedestrian scale and directs pedestrians and bicyclists to Caltrain as well as to other local destinations as shown in Figures 3-21 and 3-22. The



A1: "Lawrence Station" in horizontal orientation

A2: "Lawrence Station" in vertical orientation

Both designs have push-through letters.

Color Palette



Figure 3-20. Gateway Sign

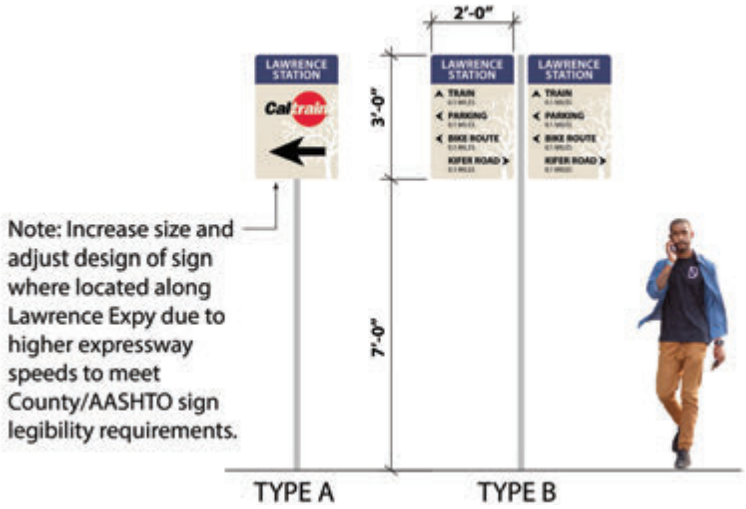


Figure 3-21. Directional Sign

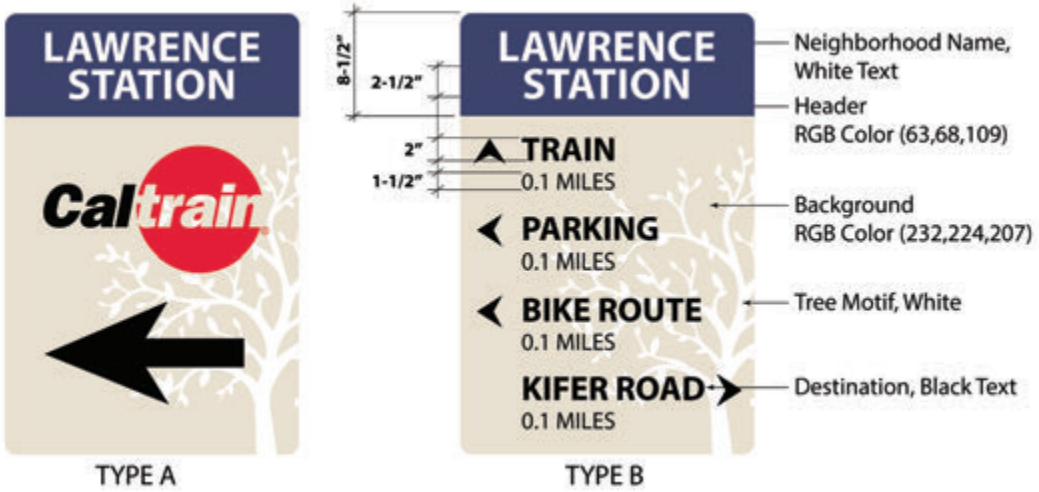


Figure 3-22. Directional Sign Enlargement

community preferred a tree as the motif for the neighborhood, and this input is incorporated in the directional sign graphic.

A sign at E. Evelyn Avenue and Reed Avenue directs eastbound bicyclists towards Aster Avenue in order to access the Caltrain station. Signage directing motorists to Lawrence Caltrain Station should be provided on Monroe Street and Lawrence Expressway if approved by the jurisdictions of City of Santa Clara and County of Santa Clara, respectively.

All gateway monuments and signs shall be placed beyond the intersection corner and driveway vision triangles per City Planning and Building Division requirements. Placement on the new Kifer Road median may also be considered.

Parks and Open Space

Parks and open space shown on the plan are based on development projects that are either approved and not under construction or currently being built. There is a need for parks and open space throughout the entire plan area, particularly east of Lawrence Expressway, and locations will be determined upon project review. The City envisions a combination of publicly dedicated parks and privately-owned, publicly-accessible open spaces.

Lighting

The area is currently serviced by LED roadway lights, and the City will require developers or wireless telecommunication providers to upgrade streetlight poles in the plan area as shown in Figure 3-23 to accommodate the addition of pedestrian-scale lights and both 4G and 5G service. By having the 4G and 5G utility infrastructure integrated within the light pole, the light pole can serve multiple functions and reduce the need for standalone wireless communication poles. Figure 3-24 shows the streetlight with 4G and 5G service, the pedestrian and roadway light, and the standalone pedestrian-scale light. These different lighting



Notes:
Project Limits shown are diagrammatic. Where project limits are shown beyond the City of Sunnyvale limits, it is to provide graphic clarity and design intent only. The LSAP street lighting standard will not be installed in the City of Santa Clara's jurisdiction.

Figure 3-23. Lighting Plan

types meet the functional needs for vehicular and pedestrian circulation and provide a cohesive look with the pendant style and a black finish that is consistent with the modern eclectic style site furnishings. These lights help define the plan area as a unique neighborhood.

The wireless communication infrastructure is housed within the vehicular-scale streetlight poles. Pedestrian-scale lighting should be provided to meet City lighting requirements. Poles and luminaires should be Lumec Urbanscape to align with the modern eclectic style. Lights should meet the City's lighting system operational and performance requirements. Roadway lighting should utilized a similar luminaire style.

Lighting shall be Lumec by Signify. UrbanScape LED pendant luminaire, street light mounting height approximately 28' to 32', pedestrian light mounting height 14' to 18', round non-tapered pole assembly with standard SSM8V muffler pole, decorative mast arm, black powder coat finish.

Streetlight with 4G and 5G Service: Brightsites Smart Pole (5G) with Hi/Lo Urbanscape twin assembly, similar to vendor's drawing #L-72595-1, verify arm and lighting assembly with Signify engineer; reference Option B.

Pedestrian and Roadway Light: reference vendor's drawing #L-72595-1.

Pedestrian-scale Light: reference vendor's drawing #L-72615-1.

See Appendix C for reference drawings.



Streetlight with 4G and 5G Service | Pedestrian and Roadway Light | Pedestrian-Scale Light

Figure 3-24. Streetlight Types

Street Trees

Street trees should be provided for shade, shelter from the street, and to create a more human-scale pedestrian experience. Tree species should be selected with respect to the scale of the roadway and to complement or match the existing species that appear to be doing well. The species along each corridor provide diversity but also reinforce a sense of spatial organization and are spaced every 30'-0" to 35'-0" depending on its size and as determined by lighting spacing. Tree wells are composed of stabilized decomposed granite. Trees not only beautify the area, but they also provide wildlife habitat and help manage stormwater.



Existing trees along Aster Avenue



4 RELATION TO EXISTING POLICIES

The objectives this report aims to achieve are directly related to existing City and City-endorsed policies.

Land Use and Transportation Element (LUTE)

A selection of related policies from the Sunnyvale General Plan Land Use and Transportation Element is listed below.

Policy LT-1.4 Coordinate with adjacent cities on local land use and transportation planning.

Policy LT-1.5 Recognize and plan so that neighborhood villages may cross borders into adjacent cities.

Policy LT-1.6b Support regional efforts which promote higher densities near major transit and travel facilities.

Policy LT-1.7 Emphasize efforts to reduce regional vehicle miles traveled by supporting active modes of transportation including walking, biking, and public transit.

Policy LT-2.3 Accelerate the planting of large canopy trees to increase tree coverage in Sunnyvale in order to add to the scenic beauty and walkability of the community; provide environmental benefits such as air quality improvements, wildlife habitat, and reduction of heat islands; and enhance the health, safety, and welfare of residents.

Policy LT-2.5 Recognize the value of protected trees and heritage landmark trees (as defined in City ordinances) to the legacy, character, and livability of the community by expanding the designation and protection of large signature and native trees on private property and city parks.

Policy LT-3.1 Use land use planning, including mixed and higher-intensity uses, to support alternatives to the single-occupant automobile such as walking and bicycling and to attract and support high investment transit such as light rail, buses, and commuter rail.

Policy LT-3.2 Refine land use patterns and the transportation network so they work together to protect sensitive uses and provide convenient transportation options throughout the planning area.

Policy LT-3.6 Promote modes of travel and actions that provide safe access to city streets and reduce single-occupant vehicle trips and trip lengths locally and regionally.

Policy LT-3.8 Prioritize safe accommodation for all transportation users over non-transport uses. As City streets are public spaces dedicated to the movement of vehicles, bicycles, and pedestrians, facilities that meet minimum appropriate safety standards for transport uses shall be considered before non-transport uses are considered.

Policy LT-3.9 As parking is the temporary storage of transportation vehicles, do not consider parking a transport use of public streets.

Policy LT-3.10 Prioritize street space allocated for transportation uses over parking when determining the appropriate future use of street space.

Policy LT-4.1 Preserve and enhance an attractive community, with a positive image, a sense of place, landscaping, and a human scale.

Policy LT-4.2 Encourage nodes of interest and activity, public open spaces, well-planned development, mixed-use projects, signature commercial uses, and buildings and other desirable uses, locations, and physical attractions.

Policy LT-5.1 Strengthen the image that the community is composed of cohesive residential neighborhoods, each with its own individual character and village center; allow change and

reinvestment that reinforces positive neighborhood concepts and standards such as walkability, positive architectural character, site design, and proximity to supporting uses.

Policy LT-5.2 Preserve and enhance the character of Sunnyvale's residential neighborhoods by promoting land use patterns and transportation opportunities that support a neighborhood concept as a place to live, work, shop, entertain, and enjoy public services, open space, and community near one's home and without significant travel.

Policy LT-6.1 Improve and preserve the character and cohesiveness of existing residential neighborhoods.

Policy LT-7.4 Promote new mixed-use development and allow higher residential density zoning districts (medium and higher) primarily in village centers, El Camino Real nodes, and future industrial-to residential areas.

Policy LT-8.4 Promote compact, mixed-use, and transit-oriented development in appropriate neighborhoods to provide opportunities for walking and biking as an alternative to auto trips.

Policy LT-8.5 Promote walking and bicycling through street design.

Policy LT-9.1 Ensure that the planned availability of open space in both the city and the region is adequate.

Policy LT-9.5 Maintain existing park and open space tree inventory through the replacement of trees with an equal or greater number of trees when trees are removed due to disease, park development or other reasons. (previously Open Space and Recreation Policy 2.2.A.4)

Policy LT-9.11 Facilitate and encourage pedestrian traffic in public recreational open spaces and utilize the Santa Clara Valley Transportation Authority's pedestrian technical design guidelines whenever appropriate and feasible. (previously Open Space and Recreation Policy 2.2.A.10)

Policy LT-9.18 Improve accessibility to parks and open space by removing barriers.

Policy LT-10.4 Support a regional path system by coordinating with adjacent jurisdictions to facilitate path connections wherever possible.



Class I Shared-Use Path at Intuitive Surgical

(see also City of Sunnyvale Bicycle Plan.) (previously Open Space and Recreation Policy 2.2.C.4)

Policy LT-14.1 Prepare specific area plans and special zoning tools (including but not limited to specific plans, precise plans, design guidelines, specialized zoning, and sense of place plans) to guide change in areas that need special attention.

Policy LT-14.2 Support the following adopted specialized plans and zoning tools, and update them as needed to keep up with evolving values and new challenges in the community: Downtown Specific Plan, Lakeside Specific Plan, Arques Campus Specific Plan, Lawrence/101 Site Specific Plan, Precise Plan for El Camino Real, Moffett Park Specific Plan, Peery Park Specific Plan, and Lawrence Station Area Plan.

Community Character Element

A selection of related policies from the Sunnyvale General Plan community character element is listed below.

Policy CC-1.1 Identify the boundaries of the City with attractive and distinctive features. (Previously Community Design Policy A.1)

Policy CC-1.4 Support measures which enhance the identity of special districts and residential neighborhoods to create more variety in the physical environment. (Previously Community Design Policy A.3)

Policy CC-1.6 Maintain City neighborhoods as safe, healthy places to live. (Previously Socio-Economic Policy A.5)

Policy CC-2.1 Maintain and provide attractive landscaping in the public right-of-way to identify the different types of roadways and districts, make motorists more comfortable and improve the enjoyment of residential neighborhoods. (Previously Community Design Policy B.1)

Policy CC-2.2 Minimize elements which clutter the roadway and look unattractive. (Previously Community Design Policy B.3)

Policy CC-4.1 Ensure that Sunnyvale's public facilities are easily identified, accessible, attractive and representative of the community's values and aspirations. (Previously Community Design Policy D.1)

Lawrence Station Area Plan

A selection of related goals, policies, and urban design guidelines from the Lawrence Station Area Plan is listed below. This list is not all-inclusive, but instead highlights those that are most directly related to this report. Goals and guidelines are listed in the order shown in the LSAP. Several guidelines in the LSAP also directly reference this plan.

CF-G3 Create a new Loop Road that provides a variety of vehicular access options and is scaled to bicycles and pedestrians.

CF-G4 Provide improved north-south access throughout the Plan area.

CF-P2 Prioritize the provision of improved north-south access for pedestrians and bicyclists between the northern and the southern portions of the Plan area.

CF-P3 Establish a secondary bicycle/pedestrian network through private property of publicly-accessible north/south and east/west paths.

CF-P5 In the area north of the Caltrain tracks, develop a Loop Road that will provide direct north-south access to Lawrence Station from Kifer Road on both the east and west sides of Lawrence Expressway.

CF-P6 Locate the Loop Road to align with Corvin Road on the east and to intersect with Kifer Road and Semiconductor Drive/Santa Vittoria Terrace, west of Lawrence Expressway.

CF-P11 Provide a wide, landscaped pedestrian sidewalk zone, continuous Class II bicycle lanes, and transit stops continuously along Kifer Road in the Plan area.

P-P1 Promote walking access through new street connections.

P-P7 For new sidewalks in the Plan area, provide a minimum sidewalk width of ten feet inclusive of a minimum paved pedestrian travel zone width of six feet and a landscaped four-foot street buffer zone. Exceptions may be approved by the City's Public Works Department based on site-specific conditions, such as preserving existing mature trees.

B-P3 Provide two new primary Class I shared-use paths at the east and west ends of the LSAP boundaries with access to Lawrence Station.



Calabazas Creek at Kifer Road

B-P4 Provide Class IIB (or Class II where determined by the City) bicycle access on the Loop Road.

CON-P1 Carry out the Sense of Place Plan's publicly-accessible framework of the Loop Road, shared-use paths, and pathways scaled to pedestrian and bicycle users, with the Loop Road accessible to all modes of travel.

CON-UDG1 Where the Sense of Place Plan identifies the location of the new loop road and shared-use paths, development projects on these properties shall be required, at a minimum, to provide a public access easement for their future construction. Development incentives may be provided for the construction of the improvements.

CON-UDG2 The Loop Road, shared-use paths, and pathways should follow the locations, cross sections, and alignments shown in the Sense of Place Plan.

CON-UDG3 If, upon development review, the City determines that creating the Loop Road through a property identified on the Sense of Place Plan is not immediately feasible, property owners shall construct an initial shared-use path per the locations, cross sections, and alignments shown in the Sense of Place Plan and reserve public space for future implementation by recording a public access easement.

CON-UDG4 Ensure that the Loop Road connects to Kifer Road and Corvin Drive east of Lawrence Expressway and Kifer Road and Semiconductor Drive/Santa Vittoria Terrace west of Lawrence Expressway, with direct access to Lawrence Station.

TSW-UDG1 Provide a new primary Class I shared-use path linkage between the Kifer West subarea and the existing shared-use path on the property at 1020 Kifer Road.

TSE-UDG1 Provide right-of-way dedications along Uranium Drive, where determined by the City to be consistent with Uranium Drive cross section in the Sense of Place Plan, to install new sidewalk and bicycle lane improvements.

LRW-UDG2 Site planning should prioritize enhanced bicycle and pedestrian access to Lawrence Station by providing a north-south shared-use path from Reed Avenue to Willow Avenue as shown in the Sense of Place Plan circulation diagram.

LRW-UDG3 Provide right-of-way dedications along Willow Avenue, where determined by the City to be consistent with the Willow Avenue cross section of the Sense of Place Plan, to install new sidewalk and bicycle lane improvements.

STP-UDG2 Locate street trees in the curb zone of the street (within 4-6 feet of the curb, depending upon sidewalk width) unless the width of the sidewalk and/or right-of-way prevents planting in that area. In such cases, locate street tree planting within the front setback of private parcels if possible.

STP-UDG3 Where feasible in on-street parking areas, plant trees in bulbouts to soften the visual impact of parking.

L-UDG1Utilize the LSAP lighting standard identified in the Sense of Place Plan, Figure 3-24 along public streets in order to create a unique district within the City. Refer to Figure 3-23 in the Sense of Place Plan for the locations of the LSAP lighting standard placement.

L-UDG2 On publicly-accessible shared-use paths and pathways, utilize the lighting standard identified in the Sense of Place Plan, Figure 3-24.

SF-P1 Provide well-designed furnishings along publicly-accessible private streets, shared-use pathways, and paths that are:



Mature redwood trees and cedars on Sonora Court

- Useful and comfortable for pedestrians
- Meet the functional needs of utilities and services
- Attractive
- Generally consistent throughout the Plan area.

SF-UDG6 Install seating that is user-friendly, but does not encourage long term use and sleeping. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

SF-UDG7 Provide two trash receptacles at diagonally opposite corners of each private street intersection in areas with high pedestrian circulation, such as Santa Vittoria Terrace. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

SF-UDG9 Provide bicycle parking facilities on each side of private streets in each block per VTA guidelines. Refer to Figure 3-19 of the Sense of Place Plan for thematic design.

OSW-G1 Implement the Sense of Place Plan's coordinated signage program that:

- Clearly and attractively directs people to Lawrence Station and other neighborhood destinations, services and amenities.
- Reinforces a sense of place with design elements that give the neighborhood a unique identity.
- Provides gateway signs to highlight entry into the Plan area.

OSW-UDG1 Follow the Sense of Place Plan that includes a larger gateway signage at key intersections and Plan area entrances (Figure 3-20) and smaller directional signage (Figures 3-21 and 3-22) as shown in the Streetlife and Wayfinding Plan (Figure 3-17).

ID-UDG1 As identified by the City's Transportation and Traffic Manager, provide highly visible crosswalks at key intersections in accordance with City standards and the Sense of Place Plan.

The following LSAP goals and guidelines for specific streets directly reference the Sense of Place Plan:

- LR-UDG2
- SV-UDG2
- SC-UDG3
- KR-UDG2
- NI-P2
- PT-P1
- PP-P1
- WS-UDG1
- RA-UDG1
- UD-UDG2

Community Design and Transportation Program

The Sunnyvale City Council officially endorsed the Santa Clara Valley Transportation Authority (VTA) Community Design and Transportation (CDT) Program on September 30, 2003.

The City's endorsement conveys support for the following CDT principles:

- Principle 1: Target growth to cores, corridors and station areas.
- Principle 3: Provide a diverse mix of uses.
- Principle 4: Design for pedestrians: comfortable, easy access to buildings, transit, wide sidewalks and pedestrian amenities.
- Principle 5: Design in context: create unique place identities via materials, design details, architectural styles, walks, streets and spaces.
- Principle 6: Focus on existing areas: infill versus outlying development, maintenance of existing communities.
- Principle 7: Create a multi-modal transportation system: balance walking, biking, and transit with vehicle movement.
- Principle 8: Establish streets as places: de-emphasize arterial network, provide wide sidewalks and landscaping.
- Principle 9: Integrate transit: locate transit stations within community cores, integrate transit stops and features into site designs.
- Principle 10: Manage parking: do not let parking dominate mode choice decisions, provide Transportation Demand Management (TDM) programs to heighten attractiveness of other modes.

City-Wide Design Guidelines

The City-Wide Design Guidelines were adopted by the City Council in June 1992 in order to implement the Community Design Sub-Element goals and policies and provide detailed direction on site and building design issues. They mainly address development projects on private properties and are intended to: enhance the overall image of the City, protect and preserve the existing character of the community, communicate the image the community desires, and achieve a higher design quality. The guidelines were last amended in 2014.

All site layout and design guidelines

provided in this Plan are consistent with existing City-Wide Design Guidelines.

Toolkit for Mixed-Use Development

The majority of the SOP plan area is zoned as mixed-use. Council adopted The Toolkit for Mixed-Use Development in July 2015 to guide the form and character of mixed-use developments in the City, and additional area-specific guidelines are noted in the LSAP.



5 FUNDING OPPORTUNITIES

Some of the improvements discussed would be funded through the Sense of Place fees, and others would be funded through developer fees. Grant funding opportunities through county, state, and transportation agencies may be a third source of funding for improvements. A selection of potential grant opportunities are discussed in this section.

2016 Measure B Bicycle & Pedestrian Program

Voters in Santa Clara County approved 2016 Measure B, a 30-year, half-cent countywide sales tax to enhance transit, highways, expressways, and active transportation. One of the Measure B programs is the Bicycle and Pedestrian Program, which funds significant pedestrian and bicycle projects within the county. The program prioritizes projects that connect to transit, schools, and employment centers. It will fund projects that fill gaps in the existing pedestrian and bicycle networks and make these networks safer and more convenient. This program is administered by VTA and the application deadline for 2021 has passed, but additional cycles are anticipated.

One Bay Area Grant Program

The Metropolitan Transportation Commission's (MTC) One Bay Area Grant (OBAG) program was first established in 2012 to target regional transportation priorities, land-use, and housing goals. Its first round of funding, known as OBAG 1, guided the allocation of $827 million in federal funds over a five-year period, from 2012-2013 to 2016-2017. OBAG 2 was adopted in 2015 and is projected to total $916 million to fund projects from 2017-18 through 2021-22. MTC manages OBAG 2's Regional Program and the nine Bay Area Congestion Management Agencies (CMAs) manage its County Program.

Priority Development Areas (PDAs) are a priority for both the Regional and County programs, and the County Program may be used on improvements to pedestrian and bicycle facilities. According to the program timeline, CMAs submitted a list of recommended projects for County Program funding to MTC in July 2017, and all County Program funds will be allocated by January 2023.

The study area is part of the Lawrence Station Transit Village PDA, and the plan includes pedestrian and bicycle facility improvements, so implementation may be eligible if OBAG has a third round of funding.

Transportation Development Act Article 3

Transportation Development Act Article 3, also known as TDA 3, provides funding for bicycle and pedestrian projects annually. The City or County Bicycle Advisory Committee must review any proposed projects. In addition, the city must request that the county

recommend the proposed projects so that the projects can be included when the county submits an annual request for project funding to MTC for consideration.

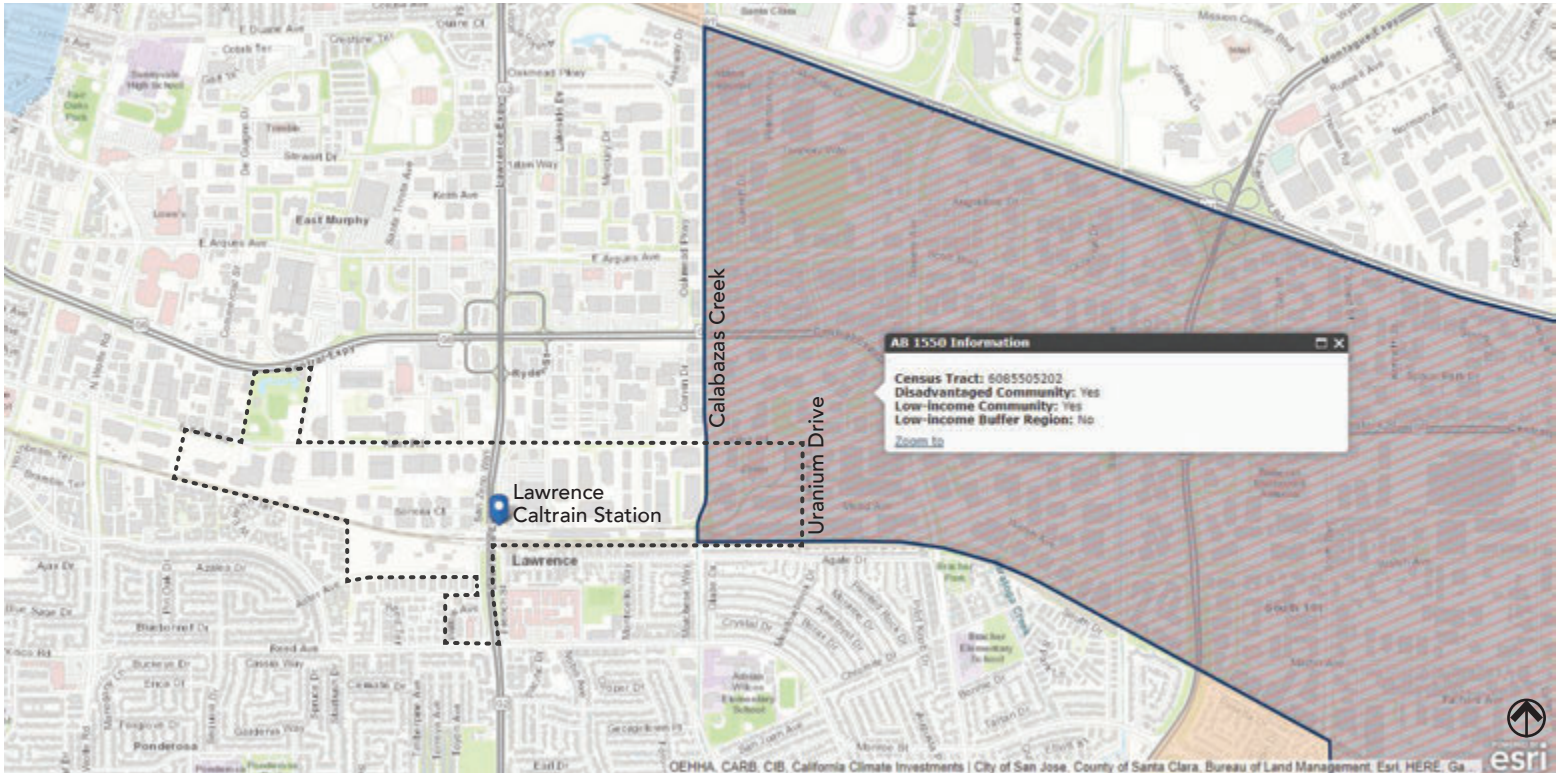
Transportation Fund for Clean Air

The Bay Area Air Quality Management District (BAAQMD) manages the Transportation Fund for Clean Air (TFCA), and the Air District's Board of Directors approve the allocation of funds on an annual basis to projects that reduce on-road motor vehicle emissions. The funds are generated through a $4 surcharge on vehicles registered within BAAQMD's jurisdiction, and 40% of the funds are disbursed by the nine Bay Area counties while the remaining 60% is awarded through the TFCA Regional Fund. Projects eligible for TFCA funding include the operation of commuter shuttles, construction of clean air vehicle infrastructure, and installation of bike parking facilities. Public agencies are eligible to apply for funding to implement plan improvements such as the construction of new bikeways.

Urban Greening Program

The California Natural Resources Agency's Urban Greening Program is funded by the Greenhouse Gas Reduction Fund to support the development of green infrastructure programs that reduce greenhouse gas (GHG) emissions and provide multiple benefits. The Urban Greening Program was created when Senate Bill (SB) 859 was signed into law on September 14, 2016, and the program's goal of reducing GHG emissions is consistent with Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. Eligible projects must perform at least one of the following: sequester and store carbon by planting trees, reduce building energy use by planting trees to shade buildings, or reduce community vehicle miles traveled by constructing bicycle and pedestrian facilities that provide safer routes between residences, workplaces, commercial centers, and schools. Funding prioritizes investments in disadvantaged and low-income communities, and Round 4 allocated a minimum of 80% of available funds to these neighborhoods in California. The Round 4 application period closed in 2020, and future funding cycles are contingent upon the number of competitive applications received.

According to the metrics defined in the program, the area east of Calabazas Creek lies within a disadvantaged and low-income census tract as shown in Figure 5-1, so pedestrian and bicycle facility improvements, tree planting, and park and open space projects in this area could be a candidate for potential future funding cycles of the program.



Adapted, Source: California Air Resources Board Priority Populations Map, 2020

Legend

SB 353 Disadvantaged Communities and AB 1550 Low-Income Communities

Project Limits

Figure 5-1. Disadvantaged and Low-Income Community Census Tract



6 IMPLEMENTATION

Implementation Process

The goals of the Lawrence Station Area Sense of Place Plan shall be implemented primarily through the private development approval process by constructing improvements in conjunction with projects and payment of Sense of Place fees. Grant-funded public improvement projects may also be pursued.

Improvements fronting a parcel will primarily be funded and constructed by the developer as part of the project development approval process. After development applications are submitted for projects located within the plan area, City staff will review the development proposals and verify that they are consistent with the design guidelines described in this document. City staff will then recommend that Conditions of Approval be applied to the approval of Planning Applications, Building Permits, and encroachment permits. The Conditions of Approval may include modifications to address deviations from the SOP plan.

The City of Sunnyvale may also consider competing in grant funding programs such as those listed in Chapter 5 to fund improvements in the public right-of-way. Funding opportunities for areas that do not currently have pedestrian access or that pose existing pedestrian safety issues will be prioritized. Improvements that enhance safety should be prioritized.

Funds for common improvements that span across multiple frontages such as bike lanes and other priority elements identified on the plans, such as completing the landscaped median on Kifer Road, will be generated through a Sense of Place fee. This fee will be applied to redevelopment projects on a per unit or per net new nonresidential square foot basis. Fee credits may be given for construction of particular improvements that are included in the fee estimate. Other plan elements such as a pedestrian crosswalk with a pedestrian hybrid beacon, if warranted, would be funded by that specific development. Maintenance for the plan area may be funded through a private special maintenance district to ensure that the neighborhood is safe, welcoming, and pleasant.

Estimate of Costs

A summary of the estimated probable costs of construction and implementation are provided on the following page, and a more detailed breakdown is available in the appendix for reference. The cost estimate reflects the priority improvements as described in the Sense of Place Plan and does not include improvements that are typically required for new development along individual project frontages, including, but not limited to: new curbs, gutters, sidewalks, street lights, street trees, and street paving. It also does not include most improvements that developers can receive density incentives for constructing. City priorities in the cost estimate are a contiguous landscaped median on Kifer Road, bike lanes throughout the plan area, gateway and directional signage, a Calabazas Creek shared-use path undercrossing at Kifer Road, and

prepared for
City of Sunnyvale

Estimate of Probable Construction Costs
Sense of Place Plan
Preliminary Plan

prepared on: 9/30/2020
prepared by: MW
checked by: MM

Item #	Description	Unit	Cost	TOTAL Qty	TOTAL Item Total	TOTAL Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle undercrossing near Calabazas Creek at Kifer Rd	EA	$125,000	1	$125,000	
2.	Pedestrian/bicycle undercrossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	1	$2,250,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$2,612,500	
						$4,988,000
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	9,040	$361,600	
2.	Curb	LF	$60	7,240	$434,400	
3.	Chatter bars	LF	$35	800	$28,000	
4.	Landscaping and irrigation	LF	$180	3,620	$651,600	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,623,200	
						$3,099,000
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	4	$200,000	
2.	Directional sign	EA	$1,000	15	$15,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	4	$160,000	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$412,500	
						$788,000
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	6,300	$6,300	
2.	Slurry seal	SY	$3	18,000	$54,000	
3.	Bike lane striping	LF	$2	47,700	$95,400	
4.	Buffer striping	LF	$5	20,200	$101,000	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$282,300	
						$539,000
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$1,500,000	
2.	PG&E service to traffic signal	EA	$30,000	1	$30,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,683,000	
						$3,213,000
F	**ESTIMATED PROJECT TOTAL**					$12,627,000

a new traffic signal at Kifer Road and Uranium Drive. This estimate is considered preliminary and subject to change as it has been developed without the benefit of detailed drawings.

Estimating Assumptions

1) The items, amounts, quantities, and related information are based on Callander Associates' judgment at this level of document preparation and is offered as reference data.

2) The following are excluded from the cost estimate:

- Permitting costs from other agencies
- Improvements within County right-of-way, including the costs of the potential future grade separation of Lawrence Expressway as identified in the Lawrence Expressway Grade Separation Concept Study
- Improvements within City of Santa Clara right-of-way (sidewalk and roadway striping on Kifer Road, Uranium Drive, and French Street)
- Santa Vittoria Terrace (existing)
- Aster Avenue (existing and under construction)
- Class I Shared-Use Path on Intuitive Surgical developments

3) Start-up costs include 20% of construction costs for bonding, mobilization, SWPPP, grading, tree protection, traffic control, and construction staking. Design assumes 40% of construction costs for professional service fees, and inspection assumes 10% of construction costs for City review and construction inspection. Estimating contingency is assumed as 40% of construction costs and includes the following: 10% construction/change order contingency, 20% level of estimate contingency, and 10% design contingency.

4) Bike lane cost assumes 6'-0" minimum width. Buffer assumes 3'-0" width. Striping and slurry seal costs exclude vehicular travel lanes.

5) Landscaping and irrigation costs for parkway strips assume a 4'-0" wide planted area with groundcover and drip irrigation system with water and electrical service. Street tree and irrigation costs assume a 24" box tree at 30' o.c. spacing and two tree bubblers per tree.

6) The future path crossings at Calabazas Creek are being studied as a part of the City of Santa Clara's Creek Trail Network Expansion Master Plan. The cost estimate assumes that the crossings will be undercrossings. The costs shown assume 25% of the total estimated costs for these crossing improvements, which is anticipated to be the City's share between the City of Santa Clara and Valley Water.

Timing

Improvements shall be implemented as development projects are approved and as funding becomes available. Some segments of the plan have been implemented, or are currently under construction.



7 APPENDICES

APPENDIX A

Meeting Summaries

Compiled Community Input Summary 60

Planning Commission Study Session Summary 68

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April 4, 2019

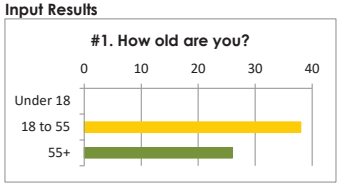
Input Summary
Lawrence Station Sense of Place Plan
RE: Compiled Input #1
Date: March 6-31, 2019

Number of attendees who signed in at Community Workshop #1: 50
Number of questionnaires received at Community Workshop #1: 28
Number of online survey respondents: 37

This summary encompasses the input received from Community Workshop #1 on March 6, 2019, and the online survey that was open from March 18-31, 2019.

The purpose of this meeting was to introduce the project, present existing conditions, and receive feedback from the public. The first part of the meeting was a presentation introducing the project goals and objectives and the layout of the stations, and the second part was time for attendees to visit the stations. Attendees had opportunities to ask questions and provide comments after the presentation. Station A displayed background project information, Station B displayed potential motifs and architectural styles, Station C displayed an aerial map of the Plan Area, and Station D displayed existing road sections. Attendees voted on motifs, architectural aesthetic, and pedestrian/bike improvements for the Sense of Place Plan Area. They also had the opportunity to identify problem areas and to mark their typical route to and through the Plan Area. Attendees were also asked to complete a questionnaire in order for the project team to better understand the demographics and preferences of attendees.

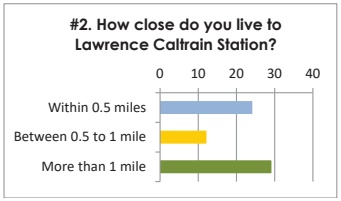
Input Results

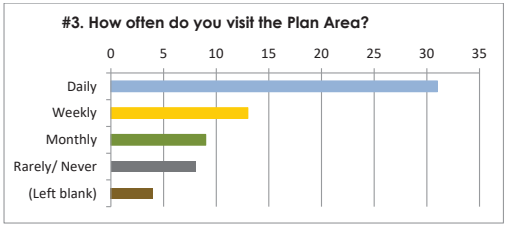


BURLINGAME
1633 Bayshore Highway, Suite 133
Burlingame, CA 94010
650.375.1313

GOLD RIVER
12150 Tributary Point Drive, Suite 140
Gold River, CA 95670
916.985.4366

SAN JOSE
2025 Gateway Place, Suite 285
San Jose, CA 95110
408.275.0565



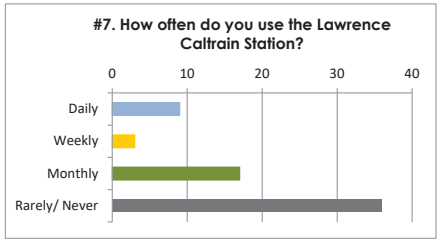


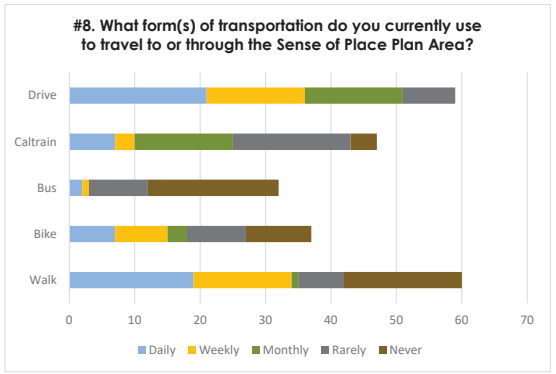
#4. What do you like about the Area?
Attendees primarily like the proximity to Lawrence Caltrain station. They also like the trees on Sonora Court and along Willow Avenue, as well as the existing and proposed open spaces within the Plan Area. Some respondents like how the Plan Area used to have a quiet peaceful small-town vibe, while others feel that the adjacent residential neighborhood is currently safe, peaceful, and walkable.

#5. What do you dislike about the Area?
Several attendees stated dislike for the traffic congestion. The next most common responses were insufficient bike and pedestrian infrastructure, the presence of high-density housing developments, and the industrial and commercial feel of the area. Other comments included not having enough parks and open space, lighting, and walkable destinations. Additional responses included burglaries and noise.

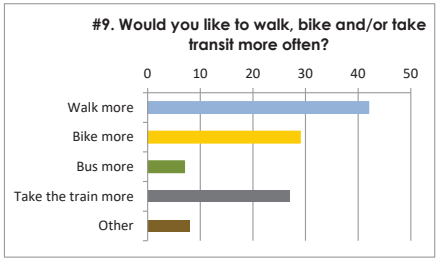
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#6. How can this neighborhood be improved?
The most commonly stated improvements attendees would like to see are better pedestrian and bike infrastructure. Several attendees stated a preference for more parks and open space in the plan area, as well as local walkable and bikable food and retail destinations, community spaces, and more affordable housing. Some attendees like the potential for high-density housing in the area, but are concerned about whether the existing road infrastructure will be sufficient. Additional changes attendees would like to see include less traffic, better landscape maintenance along sidewalks, more parking at Lawrence Station (southern side), and a consideration for more schools.





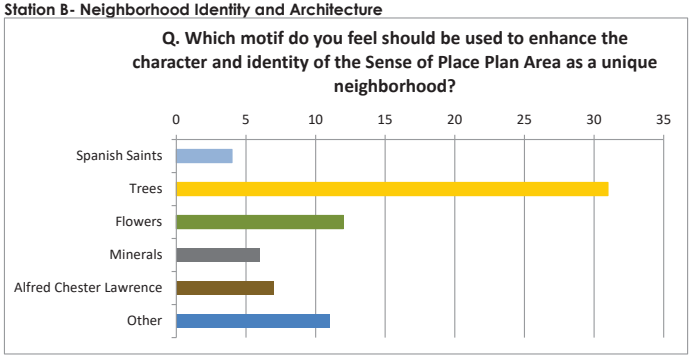
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Station A- Project Background

- Attendee walked to Costco before, and would like to be able to walk to Costco all the time but there is no sidewalk on parts of Aster Ave so it's not very safe
- Provide more lighting at station underpass
- Provide more lighting along Willow Ave
- Need stop light at the intersection of Willow/Reed
- Traffic will pick-up on E Evelyn Ave and create a big bottleneck at the new development on Aster Ave because there will be a high density of people trying to leave at the same time
- No existing sidewalk on Wolfe Rd
- Intuitive Surgical gives employees go passes for taking transit, and it would be great if other companies also offered public transit passes

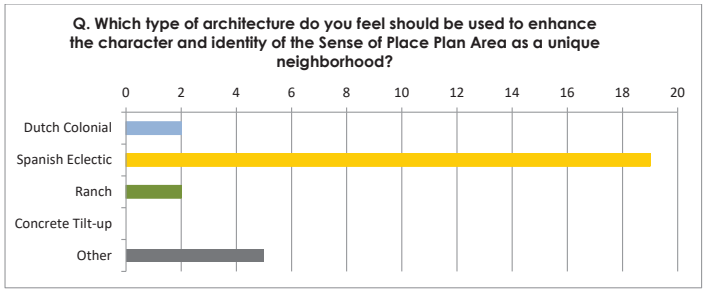
Station B- Neighborhood Identity and Architecture



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Neighborhood Identity Comments:

- Native trees and shrubs (2)
- Farming history of the Valley of Heart's Delight – some cherry trees
- Name structure/center for more recent California politicians e.g. Edmund "Jerry" Brown
- Spanish cities, to match the architecture
- Natural elements to calm the higher density near Caltrain, keep feeling of open space
- Things related to trains- car (have a train car to play on in the park)
- Rock/mineral displays-art on corners, benches, etc.
- Green everything



(The question on neighborhood architecture was not included in the online survey.)

Neighborhood Architecture Comments:

- Pueblo (2)
- Indigenous people place names (2)
- Santa Clara Marketplace Architecture
- Biophilic design (that brings the outside in and creates a sense of place)
- Modern eclectic (similar to Santana Row)

Station C- Routes and Destinations, Opportunities

Attendees were asked to mark their typical routes and destinations and any problem areas within the Plan Area. The main destination for attendees is Costco, and the main area in need of improvements is the area surrounding Lawrence Caltrain Station. The intersections of Lawrence/Reed, Timberpine/Reed, Kifer/Lawrence were also considered problem areas by several attendees. Timberpine Ave, Willow Ave, and Sonora Ct are primarily used when attendees walk, bike, or take transit through the Plan Area. Aster Ave, French St, Monroe St, and the residential streets southwest of the station are also used when attendees are not driving. Primary vehicular routes used by attendees are Lawrence Expy, Timberpine Ave, Kifer Rd, Reed Ave, Monroe St, Central Expy, and Wolfe Rd.

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Routes and Destinations Plan Comments:

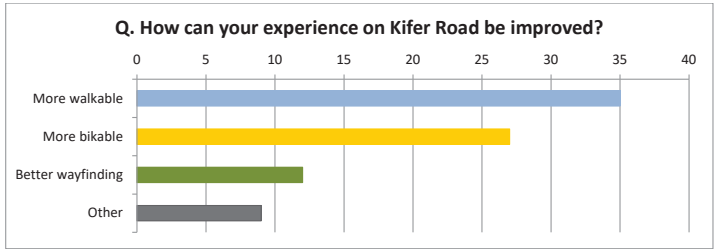
- Signal wait time at the intersection of Reed/Lawrence is long, 3 cycles (5)
- Hard to cross *(from Willow Ave across Reed Ave)* (5)
- Poor lighting at underpass, poor visibility *(at Lawrence Station and San Zeno Way)* (3)
- Would like bike lane to continue *(on Monroe St, just east of Lawrence Expy)*
- Traffic backup to Wilcox on Monroe St
- Left turn has a short stacking lane so overflow of left-turning vehicles impacts through lanes from northbound Lawrence Expy turning west onto Reed Ave
- Future "No left turn" restriction *(at the intersection of Willow/ Reed)* will push traffic westward to Timberpine Ave
- Unsafe for pedestrians and bicyclists to cross Reed Ave at Timberpine Ave
- Intersection at Evelyn and Reed Ave lacks 4th crosswalk leg
- Lack of baby bullet train service at Lawrence Station depresses ridership
- Mistake to build *(shopping plaza on Monroe St, adjacent to Monticello apartment homes)* away from train
- *Bike lane desired along Calabazas Creek, southward, and then westward adjacent to Caltrain tracks*
- The development at the Kifer/Lawrence intersection in the City of Santa Clara will put pressure on Lawrence Expy
- Bike lanes on high speed road do not feel safe *(on Kifer Rd)*
- Bike lane too narrow and messy, bushes block bike lane *(on Kifer Rd)*
- Need sidewalk *(on Kifer Rd, heading westward toward Wolfe Rd and on Wolfe Rd)*
- Need speed reduction along Kifer Rd to make it more comfortable for pedestrians and cyclists
- Intuitive Surgical employees drive between buildings, need better non-car option to reduce congestion
- Poor sidewalk maintenance, brambles grow in cracks in sidewalk
- VTA ACE shuttle stop *(sign and light post)* is in sidewalk *(on Kifer Rd at Commercial St)*
- Attendee bikes through the neighborhood because biking on Wolfe Rd and Kifer Rd is not safe
- Curb too tall *(at end of Sonora Ct)*
- Narrow pass with bollards *(in the 1090 Kifer parking lot)*
- Three speed bumps *(in the 1090 Kifer parking lot)*
- Evelyn Ave to Wolfe Rd signal is too short, so people avoid the intersection by taking a shortcut through the residential neighborhood
- *(Biking along residential streets including Sequoia Dr and Azalea Dr is a)* safer route than Evelyn Ave
- More midblock crossings would be great *(in the residential areas southwest of the station)*
- No crosswalks between Evelyn Terrace and Wolfe Rd, so there is a lot of jaywalking
- Wolfe Rd overpass over the train tracks needs sidewalks
- Street frontage on Evelyn Ave at Pine Cone Lumber is missing sidewalks
- Change from duplex to condo development creates a parking concern *(at intersection of Evelyn/ Wolfe)*
- How will people exit *(the new development at Peninsula Building Materials)*?
- Attendee wants trees along Aster Ave
- Attendee doesn't walk because it's not safe nor pleasant to walk *(in the Plan Area)*
- Are schools being considered in traffic demand?

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Opportunities Plan Comments:

- Linear park *(along future Loop Road, along the southward extension of Corvin Rd)*
- Bike/ped crossing and path *(along Calabazas Creek to cross the Caltrain tracks)*
- Park and potential retail and dining destinations *(along the section of Sonora Ct on the future Loop Rd)*
- Sidewalk *(along Aster Ave)*
- Railroad under/overcrossing and trail *(along the western boundary of the Olympic Residential Group Townhomes development on Aster Ave and then connecting northward across the Caltrain tracks to Sonora Court)*
- Keep the existing park *(Intuitive Surgical Park at 945 Kifer Rd)*
- Bike path *(on Commercial St)*
- Extend trails so they are networked together so it is easy to connect north-south, east-west
- 2-acre park *(at Corn Palace development)*
- Bike/ped friendly *(at the intersection of Lawrence Expy and Reed Ave) (marked on Existing Conditions Plan)*
- Can these improvements link to Calabazas Creek Trail? *(marked on Existing Conditions Plan)*

Station D- Existing Road Sections & Conceptual Road Sections

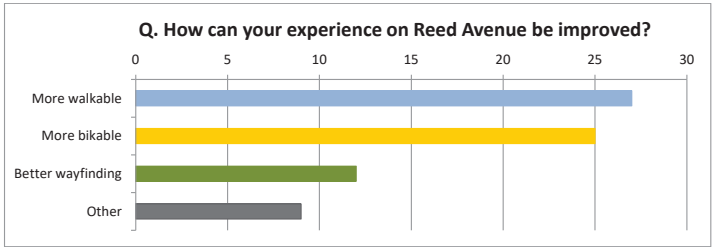


Kifer Road Comments:

- 10' foot traffic lanes (2)
- El Camino Storm Drain – trail possibility (2)
- Protected Class IV bike lanes (2)
- Protected bike lanes (2)
- Grass between sidewalks and roads
- Wider bike lane
- Protected bike lane
- Bike lane should be minimum of 8' given 45 mph speeds on Kifer, 6' bike lane + 2' protected buffer
- Lower speed limit!
- Reduce travel lane to 10' to slow cars
- Add traffic calming speed table mid-block
- Add street trees for walking

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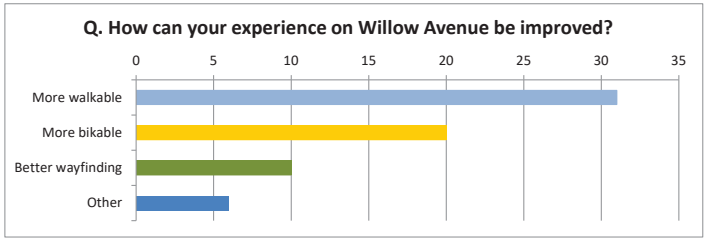
- Repurpose 2-3 car lanes for: wider sidewalk, wider bike lane (+ separation), shorter crosswalks
- Unnecessary *(existing double left-turn lane)*
- Flip so bicycle lane is protected *(existing bike lane and existing landscape in public right-of-way)*
- Bike lane too narrow, gutter should not be included in width
- Need consistent sidewalk, fill gaps
- *(Bike lane)* too narrow, too much debris
- Take advantage of new sign opportunities



Reed Avenue Comments:

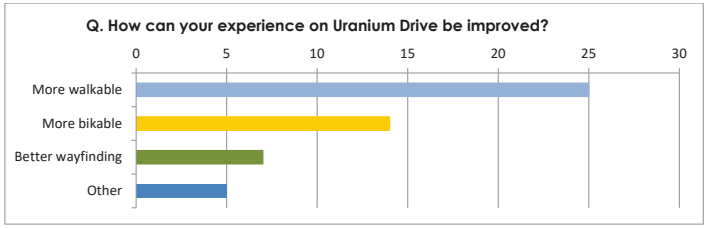
- Parking protected bike lane (5)
- Add gap between parking and bike lane for door zone (2)
- Why are these 18' lanes? (2)
- 18' lane needs → 11' (2)
- 11' lane, 8'-6" parking, 7' trees, 5' bike, 6' sidewalk
- Rethink *(locations of sidewalk, landscape, and parking)* for protected bike lane
- Red light cameras
- Narrower streets for calmer traffic, better bike & pedestrian safety
- Streets not designed for modern volumes- Timberpine, Reed/Lawrence interchange
- Need coordinated traffic control, falling apart
- Add center Class 4 bikeway
- Crosswalk lights @ Timberpine/Reed intersection, cars blow through light

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Willow Avenue Comments:

- 12 ft lanes in residential areas are too wide- encourages speeding
- Remove street parking, add bike lanes
- Reed/Willow intersection currently dangerous to cross as a pedestrian. Too wide, no crosswalk.



Sonora Court Comments:

- Very popular bike route here. Please mark it safe for biking! Don't put bike lane in the door zone (where parked cars open doors/don't let cars park here) (2)
- 10' lanes, parking protected contraflow bike lane
- Why is there parking here? *(on-street parking on Sonora Court to create a parking-protected bike lane)*
- 10-11' travel lanes
- Go for Gold. Require Class 1 bikeways on each property as it redevelops.
- Let cars keep parking here!
- Put bike lanes inside the trees next to sidewalk (away from auto traffic)
- Most beautiful street in Plan Area
- Buses would be great

Aster Avenue Comments:

- 1) Need Class 1 or Class 4 on Aster. Major route to Lawrence Station, 2) Put bike lanes next to sidewalks, not in roadway
- Protect pedestrians from cyclists!

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- Please retain the trees along Aster

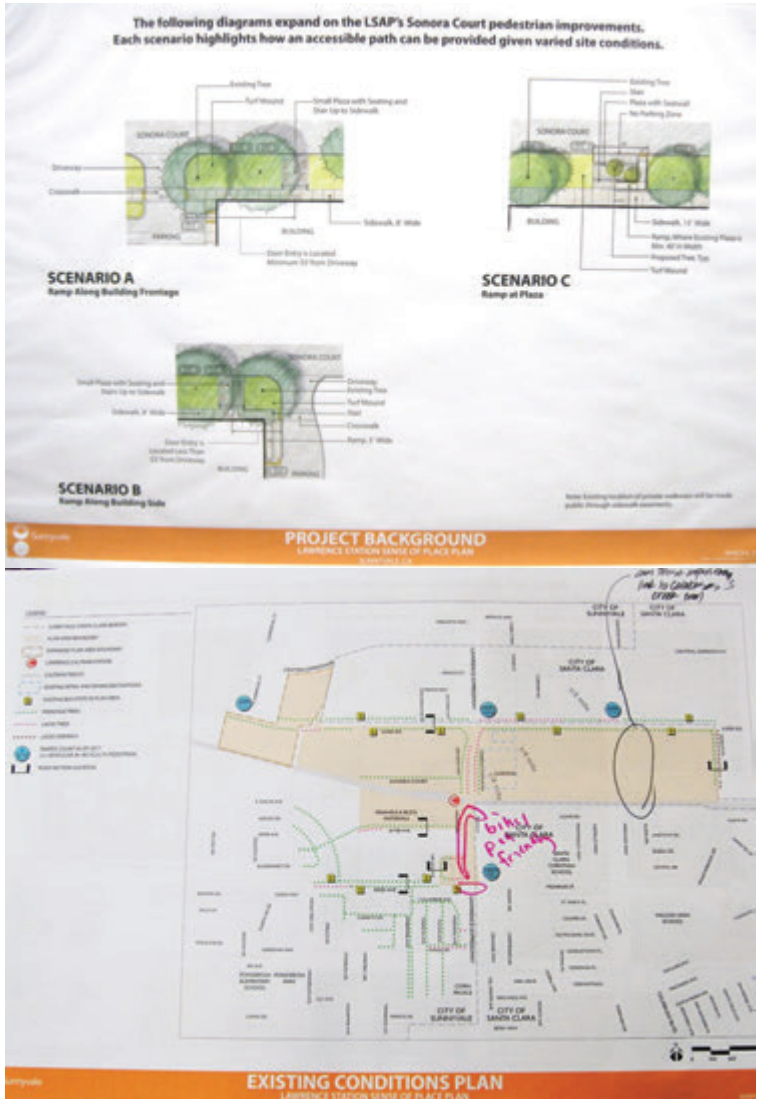
Additional questions and comments:

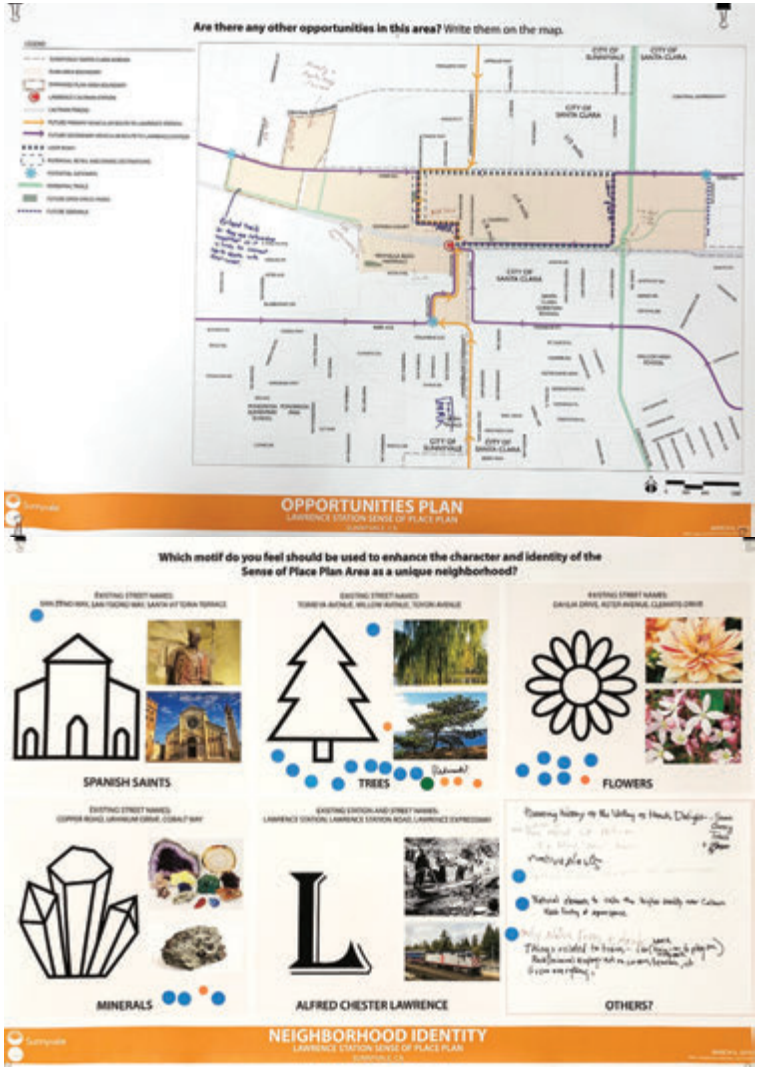
- What kind of trees are proposed? Preference for no liquidambar and no maples
- Has the City been working/ communicating with Santa Clara? Development pattern (historically) doesn't seem to be coordinated.
  - City of Sunnyvale Vice Mayor Russ Melton offered to answer questions about coordination with City of Santa Clara.
- Which station discusses housing?
  - There will be a separate meeting for housing this year, date has not been set
- Is this for new or existing development?
  - This is to set the table for what type of improvements would happen
- How many property owners are there and how will park spaces be identified?
  - Developers must follow City open space requirements.
- Has there ever been a study to do a tunnel grade separation on Lawrence?
  - Yes, a study is being led by the County.
- Will plan look at parking at Lawrence station?
  - Plan will evaluate options for on-street parking.
- Will there be additional parking at station such as a new garage?
  - There are no current plans for additional parking at the station.
- If you want to build/create a sense of place, consider looking at the lifestyle of the demographic. In old European cities, people walked everywhere-- to the market, trains stations, and city centers.

Attachments:



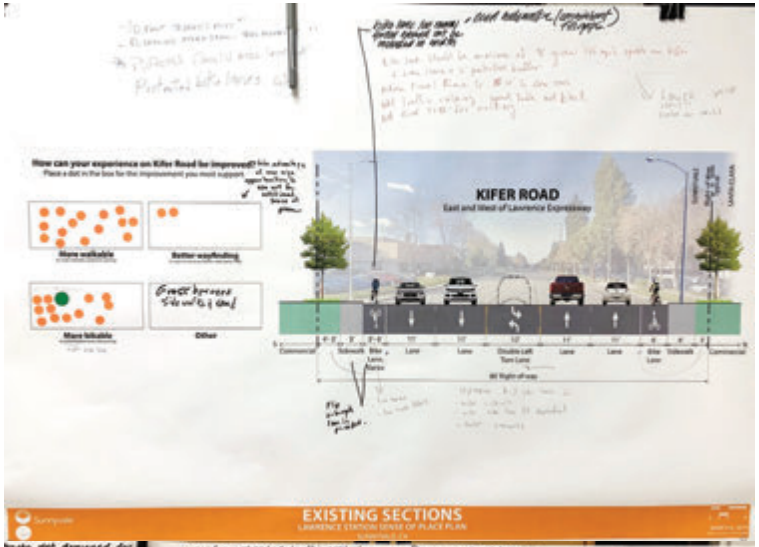
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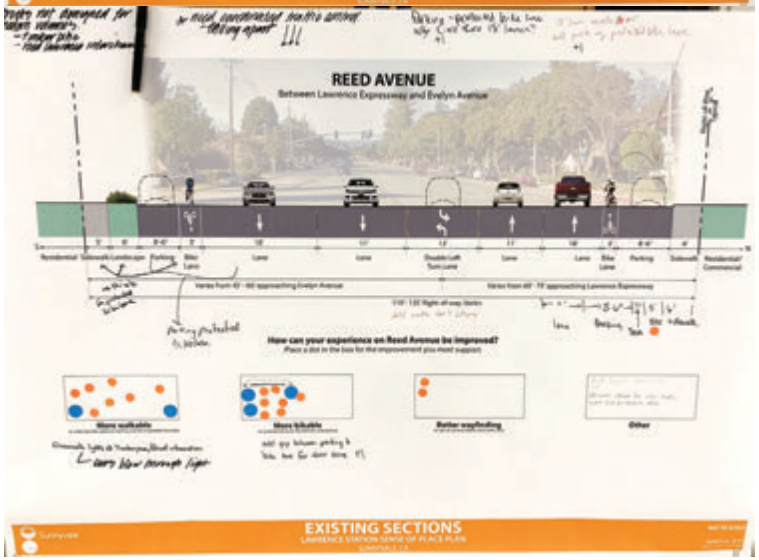

The following diagrams expand on the LSAP's Sonora Court pedestrian improvements.
Each scenario highlights how an accessible path can be provided given varied site conditions.
SCENARIO A
Ramp Along Building Frontage
SCENARIO C
Ramp at Plaza
SCENARIO B
Ramp Along Building Side
PROJECT BACKGROUND
LAWRENCE STATION SENSE OF PLACE PLAN
EXISTING CONDITIONS PLAN
LAWRENCE STATION SENSE OF PLACE PLAN

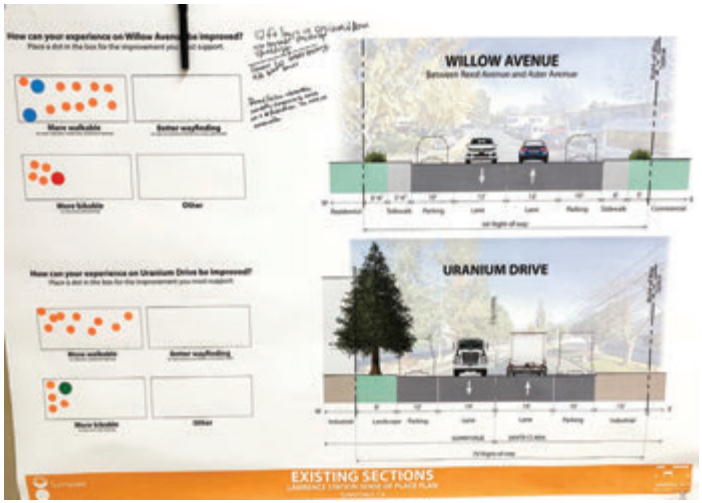

Are there any other opportunities in this area? Write them on the map.
OPPORTUNITIES PLAN
LAWRENCE STATION SENSE OF PLACE PLAN
Which motif do you feel should be used to enhance the character and identity of the Sense of Place Plan Area as a unique neighborhood?
SPANISH SAINTS
TREES
FLOWERS
MINERALS
ALFRED CHESTER LAWRENCE
OTHERS?
NEIGHBORHOOD IDENTITY
LAWRENCE STATION SENSE OF PLACE PLAN


type of architecture do you feel should be used to enhance the character and identity of the Sense of Place Plan Area as a unique neighborhood? Place a dot on your preference.
DUTCH COLONIAL
SPANISH ECLECTIC
RANCH
CONCRETE TILT-UP
OTHERS?
NEIGHBORHOOD ARCHITECTURE


Where do you go and what route do you take?
Use a GREEN dot to mark your typical destination(s).
Use a RED dot to mark any place that you consider a problem area (ex. no sidewalk, inadequate lighting, etc)
Use a BLUE pen to draw your typical route if you walk, bike, or take public transit.
Use a RED pen to draw your typical route if you drive.
SENSE OF PLACE PLAN AREA BOUNDARY
ROUTES AND DESTINATIONS


KIFER ROAD
East and West of Lawrence Expressway
EXISTING SECTIONS


REED AVENUE
Between Lawrence Expressway and Evelyn Avenue
How can your experience on Reed Avenue be improved?
EXISTING SECTIONS



The information above is Callander Associates' understanding of input received. Callander Associates is proceeding with the project based on this understanding.

Submitted by: Melinda Wang

Callander Associates

cc: All attendees

CALA

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Recreate
Educate
Live+Work
Connect
Sustain

Via Email Only

March 20, 2020

Meeting Summary
Lawrence Station Sense of Place Plan
RE: Planning Commission Study Session #1
Date: March 9, 2020
Time: 6:00 p.m. to 8:00 p.m.

Attendees:

City of Sunnyvale Planning Commission:
Daniel Howard, Chair (Howard)
David Simons, Vice Chair (Simons)
Sue Harrison (Harrison)
John Howe (Howe)
Ken Olevson (Olevson)
Ken Rheaume (Rheaume)
Carol Weiss (Weiss)

City of Sunnyvale (City):
George Schroeder (GS), Planning, gschroeder@sunnyvale.ca.gov
Andy Miner (AM), Planning, aminer@sunnyvale.ca.gov
Amber Blizinski (AB), Planning, ablinzinski@sunnyvale.ca.gov
Lillian Tsang (LT), Transportation, ltsang@sunnyvale.ca.gov

Callander Associates (CALA):
Marie Mai (CALA), mmai@callanderassociates.com
Melinda Wang (CALA), mwang@callanderassociates.com

Community Members:
Cliff Bargar, employee at Intuitive Surgical
Blake Reinhardt, VP of Construction for Intuitive Surgical
Richard Mehlinger, chair of the BPAC
James Viso, real estate broker at Kidder Matthews
Richard Scott, PS Business Parks, 1310-1380 Kifer Rd

The purpose of this meeting was to receive feedback from the Planning Commission regarding the LSAP Area updates including the Boundary Expansion, Housing Study, and the Sense of Place Plan. This summary focuses on the items discussed that pertain to the Sense of Place Plan.

BURLINGAME
1633 Bayshore Highway, Suite 133
Burlingame, CA 94010
650.375.1313

GOLD RIVER
12150 Tributary Point Drive, Suite 140
Gold River, CA 95670
916.985.4366

SAN JOSE
2025 Gateway Place, Suite 285
San Jose, CA 95110
408.275.0565

Item	*Action to take*
1. Reconsider Kifer road diet, which had been previously approved by City Council and had been shown in the LSAP report from 2015.	Pending City direction
2. The Environmental Review excludes the Kifer road diet. The former Public Works Director of Sunnyvale and Public Works Director of Santa Clara both felt the Kifer road diet was not a good idea given the anticipated increase in vehicular demand. (AM)	Noted
3. Consider Class IV bikeways on major roads, or at least in one part of the City. (Weiss)	Pending City direction. Previously evaluated by CALA.
4. Consider establishing standards for architectural styles for this Plan Area. (Simons)	Pending City direction
5. Consider splitting SOP plan into multiple maps to make content easier to consume. (Howard)	CALA
6. Evaluate how kids (K-8th) can get to school if walking or biking. (Howe)	CALA
7. Consider in-road crosswalk warning lights and/or HAWK (High-intensity Activated crossWalK) beacon to increase pedestrian visibility.	Pending City direction
8. Include specific, firm language in report stating that no tree removals are allowed along Sonora Ct.	CALA
9. Lighting style and signage style do not match. Consider lighting and signage that are more similar in style. (Rheaume)	Pending City direction
10. Consider making the wayfinding signage lower in height so that it is more pedestrian-scale. (Howard)	Pending City direction
11. Consider a gateway arch over the street for the plan area similar to the Murphy Ave sign. (Howard)	Pending City direction
12. Consider signage style or graphics that speak to local history. (Rheaume)	Pending City direction
13. Consider font size variation in signage. (Simons)	CALA

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14. Confirm tree sizes in road section graphics are realistic and appropriate to context. (Simons)	CALA
15. For the gateway signage preferences, the first-choice picks were as follows: Option A1 (dimensional letters): 2 votes, Option B: 1 vote, Option C: 2 votes.	Noted
16. Class I trail and Loop Road are desirable improvements. Reconsider Kifer Rd road diet to make Kifer Rd safer for pedestrians and cyclists. Intuitive Surgical (IS) employees often need to cross Kifer Rd to other campus buildings. (Bargar)	Noted
17. Prioritize pedestrians and reconsider the Kifer Rd road diet. Consider a median or other enhancements on Reed Ave to decrease the crossing distance and improve pedestrian access and crossing ease. (Mehlinger)	Noted

The information above is Callander Associates' understanding of items discussed at the meeting. Callander Associates is proceeding with the project based on this understanding.

Submitted by: Melinda Wang

Callander Associates

cc: All attendees

18054_SUM_StudySession#1
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APPENDIX B

Estimate of Probable Construction Costs **72**

				Kifer Road		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	1	$125,000	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$137,500	
						$262,500
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	9,040	$361,600	
2.	Curb	LF	$60	7,240	$434,400	
3.	Chatter bars	LF	$35	800	$28,000	
4.	Landscaping and irrigation	LF	$180	3,620	$651,600	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,623,200	
						$3,098,800
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	3	$150,000	
2.	Directional sign	EA	$1,000	2	$2,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	3	$120,000	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$299,200	
						$571,200
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	4,100	$4,100	
2.	Slurry seal	SY	$3	5,900	$17,700	
3.	Bike lane striping	LF	$2	16,200	$32,400	
4.	Buffer striping	LF	$5	8,100	$40,500	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$104,200	
						$198,900
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$4,132,000

				Willow Avenue		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	0	$0	
2.	Directional sign	EA	$1,000	1	$1,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	0	$0	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,100	
						$2,100
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	1,600	$1,600	
2.	Slurry seal	SY	$3	1,600	$4,800	
3.	Bike lane striping	LF	$2	4,000	$8,000	
4.	Buffer striping	LF	$5	1,600	$8,000	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$24,600	
						$47,000
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$50,000

				Reed Avenue		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	1	$50,000	
2.	Directional sign	EA	$1,000	0	$0	
3.	Electrical service and gateway sign lighting	EA	$40,000	1	$40,000	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$99,000	
						$189,000
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	600	$600	
2.	Slurry seal	SY	$3	1,200	$3,600	
3.	Bike lane striping	LF	$2	3,400	$6,800	
4.	Buffer striping	LF	$5	1,200	$6,000	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$18,700	
						$35,700
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$225,000

				Class I Shared-Use Path		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	1	$2,250,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$2,475,000	
						$4,725,000
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	0	$0	
2.	Directional sign	EA	$1,000	9	$9,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	0	$0	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$9,900	
						$18,900
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	0	$0	
2.	Slurry seal	SY	$3	0	$0	
3.	Bike lane striping	LF	$2	0	$0	
4.	Buffer striping	LF	$5	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$4,744,000

				Sonora Court		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	0	$0	
2.	Directional sign	EA	$1,000	1	$1,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	0	$0	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,100	
						$2,100
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	0	$0	
2.	Slurry seal	SY	$3	0	$0	
3.	Bike lane striping	LF	$2	4,700	$9,400	
4.	Buffer striping	LF	$5	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$10,300	
						$19,700
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$22,000

				Loop Road (includes Santa Vittoria Terrace)		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	0	$0	
2.	Directional sign	EA	$1,000	2	$2,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	0	$0	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$2,200	
						$4,200
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	0	$0	
2.	Slurry seal	SY	$3	8,200	$24,600	
3.	Bike lane striping	LF	$2	17,300	$34,600	
4.	Buffer striping	LF	$5	8,200	$41,000	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$110,200	
						$210,400
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$0	
2.	PG&E service to traffic signal	EA	$30,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
F	**ESTIMATED PROJECT TOTAL**					$215,000

				Uranium Drive		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	0	$0	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	0	$0	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	0	$0	
2.	Curb	LF	$60	0	$0	
3.	Chatter bars	LF	$35	0	$0	
4.	Landscaping and irrigation	LF	$180	0	$0	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	0	$0	
2.	Directional sign	EA	$1,000	0	$0	
3.	Electrical service and gateway sign lighting	EA	$40,000	0	$0	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$0	
						$0
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	0	$0	
2.	Slurry seal	SY	$3	1,100	$3,300	
3.	Bike lane striping	LF	$2	2,100	$4,200	
4.	Buffer striping	LF	$5	1,100	$5,500	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$14,300	
						$27,300
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$1,500,000	
2.	PG&E service to traffic signal	EA	$30,000	1	$30,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,683,000	
						$3,213,000
F	**ESTIMATED PROJECT TOTAL**					$3,241,000

				TOTAL		
Item #	Description	Unit	Cost	Qty	Item Total	Subtotal
A	**Class I Shared-Use Path**					
1.	Pedestrian/bicycle crossing near Calabazas Creek at Kifer Rd	EA	$125,000	1	$125,000	
2.	Pedestrian/bicycle crossing near Calabazas Creek at Caltrain tracks	EA	$2,250,000	1	$2,250,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$2,612,500	
						$4,988,000
B	**Landscaped Median**					
1.	Demolition (sawcutting, AC)	LF	$40	9,040	$361,600	
2.	Curb	LF	$60	7,240	$434,400	
3.	Chatter bars	LF	$35	800	$28,000	
4.	Landscaping and irrigation	LF	$180	3,620	$651,600	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,623,200	
						$3,099,000
C	**Wayfinding**					
1.	Gateway sign	EA	$50,000	4	$200,000	
2.	Directional sign	EA	$1,000	15	$15,000	
3.	Electrical service and gateway sign lighting	EA	$40,000	4	$160,000	
4.	Start-up, design, inspection, contingencies	LS	110%	Allow	$412,500	
						$788,000
D	**Bike Lane**					
1.	Demolition (existing striping, markings)	LF	$1	6,300	$6,300	
2.	Slurry seal	SY	$3	18,000	$54,000	
3.	Bike lane striping	LF	$2	47,700	$95,400	
4.	Buffer striping	LF	$5	20,200	$101,000	
5.	Start-up, design, inspection, contingencies	LS	110%	Allow	$282,300	
						$539,000
E	**Enhanced Intersection**					
1.	Traffic signal, new	LS	Allow	Allow	$1,500,000	
2.	PG&E service to traffic signal	EA	$30,000	1	$30,000	
3.	Start-up, design, inspection, contingencies	LS	110%	Allow	$1,683,000	
						$3,213,000
F	**ESTIMATED PROJECT TOTAL**					$12,627,000

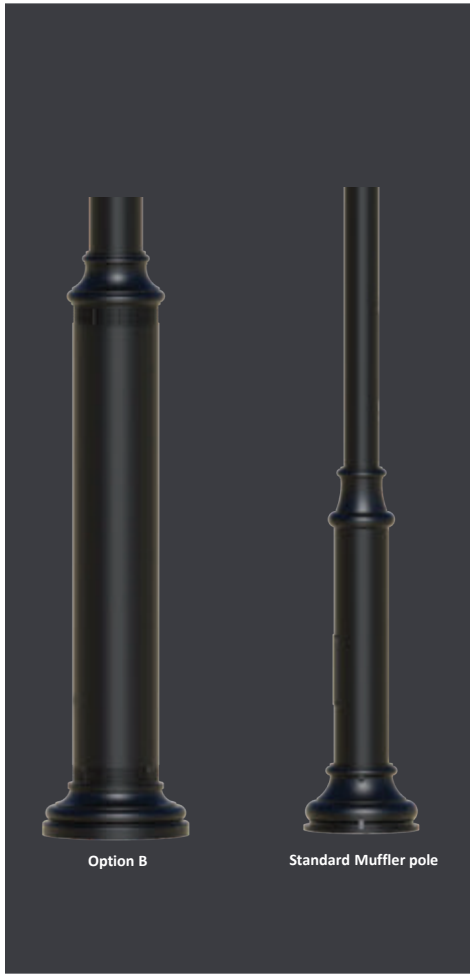
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APPENDIX C

Lighting and 5G Reference Drawings 76


Signify
Brightsites Helios solution
Sunnyvale
Jonathan Hardy, June 2020


Signify Classified - Internal
CENTRAL EXPY
CITY OF SUNNYVALE
CITY OF SANTA CLARA
COMMERCIAL ST
KIFER RD
SEMICONDUCTOR DR
SAN YSIDRO WY
LAWRENCE EXPY
COPPER RD
CITY OF SANTA CLARA
CITY OF SUNNYVALE
public R.O.W. easement for sidewalk
URANIUM DR
trail segment on Union Pacific Railroad rail spur or at rear of private property
grade-separated pedestrian/bike trail crossing
LAWRENCE STATION RD
E EVELYN AVE
AZALEA DR
AGATE DR
ASTER AVE
WILLOW AVE
SEQUOIA DR
Santa Clara Christian School
MONTICELLO WY
MARCHESE WY
Calabazas Creek
MEADOWBROOK DR
REED AVE
MONROE RD
CASSIA WY
SPRUCE DR
TIMBERPINE AVE
CITY OF SUNNYVALE
CITY OF SANTA CLARA
FORDHAM DR
Adrian Wilcox High School
signify


Option B
Standard Muffler pole

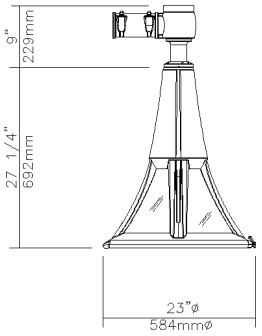

Option B
Standard Muffler pole
signify

UrbanScape




4


Signify





EPA: 1.9 sq ft / weight: 52 lb (23.6 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty **1** Luminaire **MSC-80W48LED3K-G2-LE3WF-VOLT-DMG-SMB-DH-RCD7-BKTX**

Description of Components:

Guard: In a round shape, this guard is made of four cast aluminum 356 decorative arms welded to the housing and to the access-mechanism.

Housing: In a round shape, this housing is made of cast 356 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8-16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments. The housing is complete with a watertight access cap mechanically secured with two captive Allen head screws, giving access to the driver. Rated IP66.

Access-Mechanism: Made of cast aluminum 356 technical ring with latch and hinge. The mechanism shall offer tool-free access to the Light engine.

Light Engine: LEDgine composed of 4 main components: **Heat Sink / LED Module / Optical System / Driver**
Electrical components are RoHS compliant.

Heat Sink: Made of cast aluminum optimising the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

Lens: Made of soda-lime tempered glass lens, mechanically assembled and sealed onto the ring of the access mechanism.

LED Module: Composed of 48 high-performance white LEDs. Color temperature as per ANSI/NEMA bin Warm White, 3000 Kelvin nominal (3045K +/- 175K or 2870K to 3220K), CRI 70 Min. 75 Typical.

Optical System: 0% uplight and U0 per IESNA TM-15.

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Sunnyvale - UrbanScape Combo Option 2 (Reference=L72595-1)

Driver: High power factor of 90% minimum. Electronic driver, operating range 50/60 Hz. **Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class 1**, THD of 20% max. Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees.Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees. **Driver comes with dimming compatible 0-10 volts.**

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

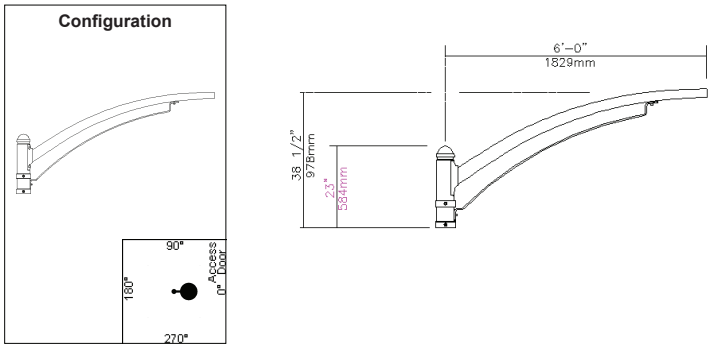
Driver Options: (DMG), Dimming compatible 0-10 volts. For applicable warranty, certification and operation guide see Lumec dimmable luminaire specification document for unapproved device installed by other. To get document, click on this link: Specification document or go on web site on this address: https://www.signify.com/b-dam/signify/en-us/brands/lumec/Lumec-un-approved-control-device-installed-by-others-7_d.pdf

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.

Adaptor: (SMB), Made of cast 356 aluminum, complete with a block connector, mechanically assembled to the bracket. Can be mounted on a 1.66"(42mm) to 2.38"(60mm) outside diameter bracket arm tubing that slip fits 6.5" (165mm) long inside the adaptor, permits an adjustment of ± 5°.

Luminaire Options: (DH), Decorative Hood, made of satin clear acrylic, mechanically assembled. **(RCD7)**, Receptacle with 7 pins enabling dimming and with two extra connections for future use (these connections are capped off at the factory - requires connections to be made in the field), can be used with a twist-lock control device or photoelectric cell or a shorting cap. Use of photocell or shorting cap is required to ensure proper illumination.

LUMEC



Qty **1** Bracket **AC6-1A-R5 9/16-BKTX**

Description of Components:

Arm: Shall be made from spun and tapered aluminum 6063-T4, tempered to T6 after welding. The tapered arm is formed into a vertically oriented ellipse of 4" (102mm) by 2 7/8" (73mm) welded onto a plate and mechanically assembled to central adaptor. The bracket end is of 2 3/8" (60mm) O.D.

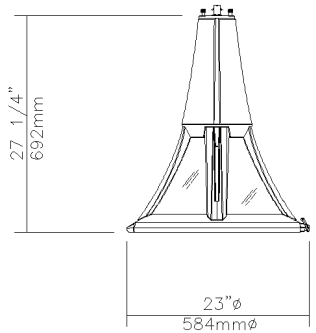
Decorative Element: Flat made of bent aluminum, 2" (51mm) wide, 0.375" (10mm) thick, mechanically assembled.

Central Adaptor: Made of cast 356 aluminum, complete with a top decorative cap. Slip-fits 9" (229mm) over a 5 9/16" (141mm) outside diameter pole or tenon. Mechanically fastened to the pole or tenon.

Note: The AC6 bracket meets the AASHTO 2001 standard specifications for structural support for luminaires.

Bracket Properties (Weight and EPA): 24 lbs (10.9 kg), 3.15 ft²

LUMEC



Qty **1** Mid-Pole Luminaire **MSC-C-140L650WW-G1-2-UNV-DMG-DH-BKTX**

Description of Components:

Guard: In a round shape, this guard is made of four cast aluminum 356 decorative arms welded to the housing and to the access-mechanism.

Housing: In a round shape, this housing is made of cast 356 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8-16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments. The housing is complete with a watertight access cap mechanically secured with two captive Allen head screws, giving access to the driver. Rated IP66.

Access-Mechanism: Made of cast aluminum 356 technical ring with latch and hinge. The mechanism shall offer tool-free access to the Light engine.

Light Engine: Light guide technology provides low-glare, uniform illumination. Composed of 140 LEDs strategically positioned on the edge of the optical plate. Light engine luminous opening size optimized to best achieve a balance between lumen output and optical performance with the need to provide visual comfort. Light engine frame ensures contact with housing to provide heat conduction and sealing against the elements. Light engine is RoHS compliant. Maximum ambient operating temperature up to 40C(104F) degrees.

LED Module: Composed of 140 high-performance white LEDs. Color temperature as per ANSI/NEMA bin Warm White, 3000 Kelvin nominal (3000K +/- 130K), CRI 70 Min.

Optical System: The advanced LED comfort optical system provides IES type II (asymmetrical) distribution. Composed of high performance UV-stabilized optical grade lens with molded micro-optics to achieve desired distribution optimized to get a

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exceptional lighting uniformity. System is rated IP66. Performance tested per LM-79 and TM-15 (IESNA) certifying its photometric performance. Street side indicated.0% uplight and U0 per IESNA TM-15.

Driver: High power factor of 95% min. Electronic driver, operating range 50/60 Hz. Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class 2, THD of 20% max.

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.

Driver: Driver comes with dimming compatible 0-10 volts. RoHS compliant.

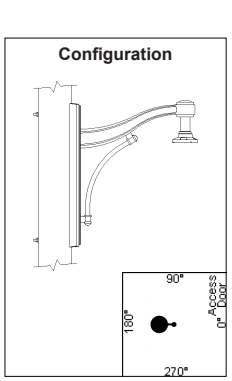
The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 6kV (min).

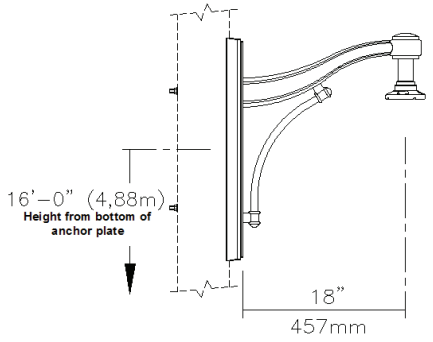
Driver Options: (DMG), Dimming compatible 0-10 volts. For applicable warranty, certification and operation guide see Lumec dimmable luminaire specification document for unapproved device installed by other. To get document, click on this link: Specification document or go on web site on this address: https://www.signify.com/b-dam/signify/en-us/brands/lumec/Lumec-un-approved-control-device-installed-by-others-7_d.pdf

Luminaire Options: (DH), Decorative Hood, made of satin clear acrylic, mechanically assembled.

Driver: Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees.

Sunnyvale - UrbanScape Combo Option 2 (Reference=L72595-1)





Qty **1** Mid-Pole Bracket **VC-F-180DEG-BKTX**

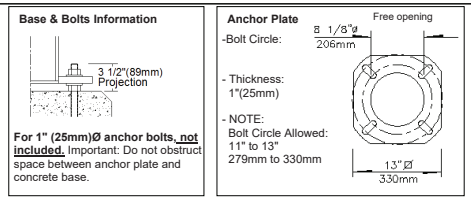
Description of Components:

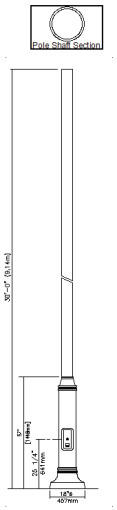
Arm: Made of cast 356 aluminum, welded to mounting plate.

Decorative Element: Made of cast 356 aluminum, welded assembly.

Mounting Plate: Made of cast 356 aluminum, mechanically assembled to pole by two through bolts.

Bracket Properties (Weight and EPA): 16 lbs (7.3 kg), 1.7 ft²





Qty **1** Pole **SSM8V-30-MPL-16-BKTX**

Description of Components:

Pole Shaft: Shall be made from a 5 9/16" (141mm) round high tensile carbon steel tubing, having a 0.250" (6.4mm) wall thickness, welded to the pole base.

Joint Cover: Two-piece round joint cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Base: Shall be made from a 8 5/8" (219mm) round high tensile carbon steel tubing base having a 0.180" (4.6mm) wall thickness, welded to both the bottom and top of the anchor plate.

Maintenance Opening: The pole shall have a 4 1/2" x 10" (114mm x 254mm) maintenance opening centered 25 1/4" (641mm) from the bottom of the anchor plate, complete with a weatherproof embossed aluminum cover and a copper ground lug.

Base Cover: Two piece round base cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Options: (**MPL**) Mid-Pole Luminaire.

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Lumec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

Pole Weight: 429 lbs (195 kg)

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Miscellaneous

Description of Components:

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, **wiring included without connector for Mid-pole luminaire**. Length supplied is from luminaire to the pole base with 6" (152mm) minimum exceeding from maintenance opening. **Wiring will be shipped in a separate box and will be installed by others.**Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding the bracket.

Hardware: All exposed screws shall be complete with Ceramic primer-seal basecoat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish: Color to be **black textured RAL9005TX (BKTX)** and in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Note: ***IMPORTANT: All missing details must be clearly specified on the return of these approval drawings. Thank you for your cooperation.***

VOLTAGE:_____

Pole Information: (R5 9/16), Bracket to be mounted on top of a 5 9/16" (141mm) outside diameter round pole or tenon.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

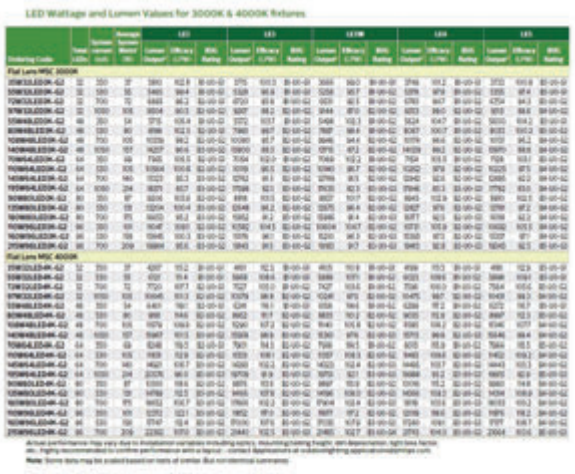
Vibration Resistance: The MSC meets the **ANSI C136.31, 2010**, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100 000 cycles)

Mechanical resistance: This design information is intended as a general guideline only. The customer is solely responsible for proper selection of pole, luminaire, accessories and foundation under the given site conditions and intended usage. The addition of any other item to the pole may dramatically impact the wind load on that pole. It is strongly recommended that a qualified professional be consulted to analyze the loads given the user's specific needs to ensure proper selection of the pole, luminaire, accessories, and foundation. Lumec assumes no responsibility for such complete analysis or product selection. Failure to insure proper site analysis, pole selection, loads and installation can result in pole failure, leading to serious injury or property damage.

Web site information details: / cULus Certification / CSA Pole Certification

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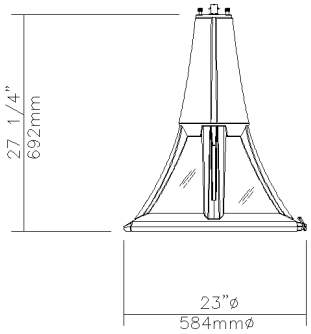
Sunnyvale - UrbanScape Combo Option 2 (Reference=L72595-1)



LED Wattage and Lumen Values for 3000K & 4000K fixtures

SPEC20200601_194450_10361_0[5]
06-26-2020 Page 9 / 9

LUMEC





EPA: 1.9 sq ft / weight: 52 lb (23.6 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty **1** Luminaire **MSC-C-140L650NW-G1-2-UNV-DMG-DH-BKTX**

Description of Components:

Guard: In a round shape, this guard is made of four cast aluminum 356 decorative arms welded to the housing and to the access-mechanism.

Housing: In a round shape, this housing is made of cast 356 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8-16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments. The housing is complete with a watertight access cap mechanically secured with two captive Allen head screws, giving access to the driver. Rated IP66.

Access-Mechanism: Made of cast aluminum 356 technical ring with latch and hinge. The mechanism shall offer tool-free access to the Light engine.

Light Engine: Light guide technology provides low-glare, uniform illumination. Composed of 140 LEDs strategically positioned on the edge of the optical plate. Light engine luminous opening size optimized to best achieve a balance between lumen output and optical performance with the need to provide visual comfort. Light engine frame ensures contact with housing to provide heat conduction and sealing against the elements. Light engine is RoHS compliant. Maximum ambient operating temperature up to 40C(104F) degrees.

LED Module: Composed of 140 high-performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (4000K +/- 130K), CRI 70 Min.

Optical System: The advanced LED comfort optical system provides IES type II (asymmetrical) distribution. Composed of high performance UV-stabilized optical grade lens with molded micro-optics to achieve desired distribution optimized to get a exceptional lighting uniformity. System is rated IP66. Performance tested per LM-79 and TM-15 (IESNA) certifying its

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Sunnyvale - Pedestrian Pendant Option (Reference=L72615-1)

photometric performance. Street side indicated.0% uplight and U0 per IESNA TM-15.

Driver: High power factor of 95% min. Electronic driver, operating range 50/60 Hz. Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class 2, THD of 20% max.Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees. **Driver comes with dimming compatible 0-10 volts. RoHS compliant.**

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 6kV (min).

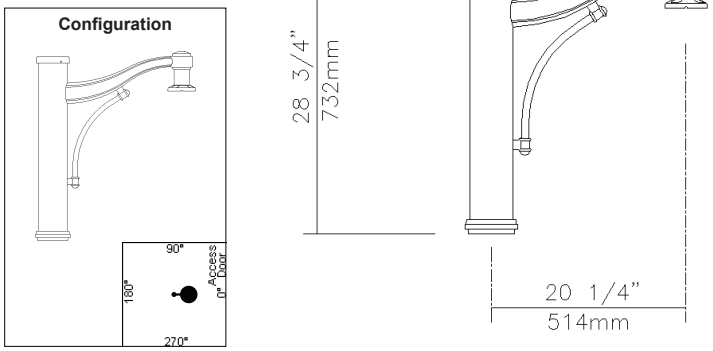
Driver Options: (DMG), Dimming compatible 0-10 volts. For applicable warranty, certification and operation guide see Lumec dimmable luminaire specification document for unapproved device installed by other. To get document, click on this link: Specification document or go on web site on this address: https://www.signify.com/b-dam/signify/en-us/brands/lumec/Lumec-un-approved-control-device-installed-by-others-7_d.pdf

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.

Luminaire Options: (DH), Decorative Hood, made of satin clear acrylic, mechanically assembled.

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Sunnyvale - Pedestrian Pendant Option (Reference=L72615-1)



Qty **1** Bracket **VC-1A-BKTX**

Description of Components:

Arm: Shall be made from cast 356 aluminum, welded to the central adaptor.

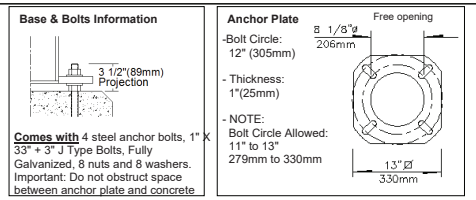
Decorative Element: Made of cast 356 aluminum, welded assembly.

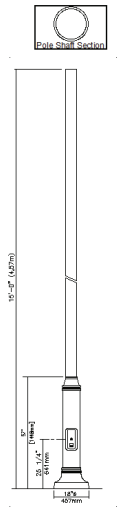
Central Adaptor: Made of cast 356 aluminum. Slip-fits 9" (229mm) over a 5 9/16" (141mm) outside diameter pole tenon. Mechanically fastened to the pole or tenon by two sets of three set-screws at 120 degrees around the bracket.

Bracket Properties (Weight and EPA): 16 lbs (7.3 kg), 1.7 ft²

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Sunnyvale - Pedestrian Pendant Option (Reference=L72615-1)





Qty **1** Pole **SSM8V-15-BKTX**

Description of Components:

Pole Shaft: Shall be made from a 5 9/16" (141mm) round high tensile carbon steel tubing, having a 0.250" (6.4mm) wall thickness, welded to the pole base.

Joint Cover: Two-piece round joint cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Base: Shall be made from a 8 5/8" (219mm) round high tensile carbon steel tubing base having a 0.180" (4.6mm) wall thickness, welded to both the bottom and top of the anchor plate.

Maintenance Opening: The pole shall have a 4 1/2" x 10" (114mm x 254mm) maintenance opening centered 25 1/4" (641mm) from the bottom of the anchor plate, complete with a weatherproof embossed aluminum cover and a copper ground lug.

Base Cover: Two piece round base cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Lumec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

Pole Weight: 219 lbs (99.5 kg)

LUMEC

Miscellaneous

Description of Components:

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding top of the bracket.

Hardware: All exposed screws shall be complete with Ceramic primer-seal basecoat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Anchor Bolts: Anchor bolts made of ASTM F1554 grade 55 steel with a minimum yield strength of 55,000 psi. Nuts made of ASTM F1554-99 grade A steel or better. The thread adjustment is ANSI class 2B regardless of the diameter of the bolts. Washers made of ASTM grade F-844 steel or better. All galvanized parts are hot-dip galvanized with minimum requirement the ACNOR G-164 standard.

Finish: Color to be **black textured RAL9005TX (BKTX)** and in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

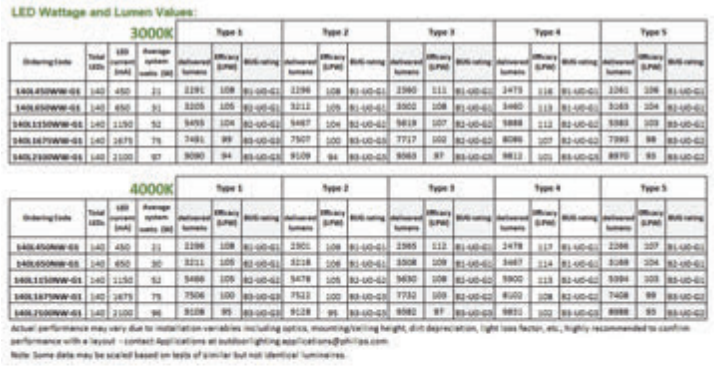
Vibration Resistance: The MSC-C meets the **ANSI C136.31, 2010**, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100 000 cycles)

Mechanical resistance: This design information is intended as a general guideline only. The customer is solely responsible for proper selection of pole, luminaire, accessories and foundation under the given site conditions and intended usage. The addition of any other item to the pole may dramatically impact the wind load on that pole. It is strongly recommended that a qualified professional be consulted to analyze the loads given the user's specific needs to ensure proper selection of the pole, luminaire, accessories, and foundation. Lumec assumes no responsibility for such complete analysis or product selection. Failure to insure proper site analysis, pole selection, loads and installation can result in pole failure, leading to serious injury or property damage.

Web site information details: / cULus Certification / CSA Pole Certification

LUMEC

LED Wattage and Lumen Values:



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Appendix C

Special-Status Plant and Wildlife Species Known to Occur in the Project Region and Their Potential for Occurrence in the ISI Project Area

Table C-1 Special-Status Botanical Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	Federal	State	CRPR		
Alkali milk-vetch *Astragalus tener* var. *tener*			1B.2	Wetland. Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0–551 feet in elevation. Blooms March–June.	**Not Expected to Occur.** Suitable annual grassland, alkali playa, vernal pool, or other suitable habitat not present within Project Area.
Brittlescale *Atriplex depressa*			1B.2	Alkali playa, wetland. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 3–1066 feet in elevation. Blooms April–October.	**Not Expected to Occur.** Suitable annual grassland, alkali playa, vernal pool, or other suitable habitat not present within Project Area.
Lesser saltscale *Atriplex minuscula*			1B.1	Alkali playa. Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy, alkaline soils. 0–738 feet in elevation. Blooms May–October.	**Not Expected to Occur.** Suitable annual grassland, alkali playa, or other suitable habitat not present within Project Area.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*			1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0–755 feet in elevation. Blooms May–October (November).	**Not Expected to Occur.** Suitable annual grassland habitat not present within Project Area.
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *palustre*			1B.2	Salt marsh, Wetland. Coastal salt marsh. Usually in coastal salt marsh with Salicornia, Distichlis, Jaumea, Spartina, etc. 0–377 feet in elevation. Blooms June–October.	**Not Expected to Occur.** Suitable salt marsh habitat not present within Project Area.
Robust spineflower *Chorizanthe robusta* var. *robusta*	E		1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 30–804 feet in elevation. Blooms April–September.	**Not Expected to Occur.** Suitable woodland, coastal dunes, coastal scrub, or chaparral habitat not present within Project Area.
Western leatherwood *Dirca occidentalis*			1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 82–1394 feet in elevation. Blooms January–March (April).	**Not Expected to Occur.** Suitable woodland, forested, or riparian habitat not present within Project Area.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*			1B.1	Vernal pools, wetland. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 3–164 feet in elevation. Blooms (June), Jul (August).	**Not Expected to Occur.** Suitable vernal pool, or other suitable habitat not present within Project Area.

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	Federal	State	CRPR		
San Joaquin spearscale *Extriplex joaquinana*			1B.2	Alkali playa. Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 3–2740 feet in elevation. Blooms April–October.	**Not Expected to Occur.** Alkali playa, vernal pool, or other suitable alkali habitat not present within Project Area.
Loma Prieta hoita *Hoita strobilina*			1B.1	Ultramafic. Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 197–3199 feet in elevation. Blooms May–July (August),(October).	**Not Expected to Occur.** Serpentine habitat not present within Project Area.
Contra Costa goldfields *Lasthenia conjugens*	E		1B.1	Alkali playa, wetland. Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 3–1476 feet in elevation. Blooms March–June.	**Not Expected to Occur.** Alkali playa, vernal pool, or other suitable alkali habitat not present within Project Area.
Arcuate bush-mallow *Malacothamnus arcuatus*			1B.2	Chaparral, cismontane woodland. Gravelly alluvium. 3–2411 feet in elevation. Blooms April–September.	**Not Expected to Occur.** Chaparral or woodland habitat not present within Project Area.
Hall's bush-mallow *Malacothamnus hallii*			1B.2	Ultramafic. Chaparral, coastal scrub. Some populations on serpentine. 33–2395 feet in elevation. Blooms May–September (October).	**Not Expected to Occur.** Chaparral, coastal scrub, or serpentine habitat not present within Project Area.
Woodland woollythreads *Monolopia gracilens*			1B.2	Ultramafic. Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, north coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 328–3937 feet in elevation. Blooms (February), March–July.	**Not Expected to Occur.** Chaparral, grassland woodland, or serpentine habitat not present within Project Area.
Prostrate vernal pool navarretia *Navarretia prostrata*			1B.1	Wetland. Coastal scrub, valley and foothill grassland, vernal pools, meadows and seeps. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. 10–4052 feet in elevation. Blooms April–July.	**Not Expected to Occur.** Suitable annual grassland, wetland, vernal pool, or other suitable habitat not present within Project Area.
Hairless popcornflower *Plagiobothrys glaber*			1A	Salt marsh, Vernal pool, Wetland. Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 16–591 feet in elevation. Blooms March–May.	**Not Expected to Occur.** Suitable marsh, wetland, vernal pool, or other suitable habitat not present within Project Area.
California alkali grass *Puccinellia simplex*			1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. 3–3002 feet in elevation. Blooms March–May.	**Not Expected to Occur.** Suitable meadows, scrub, grassland, vernal pool, or other suitable habitat not present within Project Area.
Slender-leaved pondweed *Stuckenia filiformis* ssp. *alpina*			2B.2	Wetland. Marshes and swamps. Shallow, clear water of lakes and drainage channels. 984–7054 feet in elevation. Blooms May–July.	**Not Expected to Occur.** Suitable marsh, wetland, or other suitable habitat not present within Project Area.

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence[2]
	Federal	State	CRPR		
California seablite *Suaeda californica*	E		1B.1	Wetland. Marshes and swamps. Margins of coastal salt marshes. 0–16 feet in elevation. Blooms July–October.	**Not Expected to Occur.** Suitable marsh, wetland, or other suitable habitat not present within Project Area.
Saline clover *Trifolium hydrophilum*			1B.2	Wetland. Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0–984 feet in elevation. Blooms April–June.	**Not Expected to Occur.** Suitable marsh, wetland, vernal pool, or other suitable habitat not present within Project Area.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*			1B.1	Valley and foothill grassland. Alkaline clay. 0–1181 feet in elevation. Blooms March–April.	**Not Expected to Occur.** Suitable alkaline grassland habitat not present within Project Area.

Notes: CRPR = California Rare Plant Rank; CNPS California Native Plant Society; ESA = Federal Endangered Species Act; CESA = California Endangered Species Act;

[1] Legal Status Definitions

Federal :

E Endangered (legally protected by ESA)

T Threatened (legally protected by ESA)

C Candidate (legally protected by ESA)

State:

E Endangered (legally protected by CESA)

T Threatened (legally protected by CESA)

California Rare Plant Ranks:

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA) Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNPS 2019; ISI 2018; ISI 2018b; ISI 2018c

Table C-2 Special-Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Area

Species	Status [1]		Habitat	Potential for Occurrence [2]
	Federal	State		
Invertebrates				
bay checkerspot butterfly *Euphydryas editha bayensis*	T		Coastal dunes, ultramafic, valley and foothill grassland. Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**Not Expected to Occur.** Suitable serpentine soils and suitable habitat not present within Project Area.
Crotch bumble bee *Bombus crotchii*		SCS	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum*.	**Not Expected to Occur.** Potential for suitable food plants for the species may present within the Project Area; However, there have been no documented occurrences within Santa Clara County since 1959 (CNDDB 2019). The Project Area is outside of the current range of the species (CDFW 2018).
San Bruno elfin butterfly *Callophrys mossii bayensis*	E		Valley and foothill grassland. Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is *Sedum spathulifolium*.	**Not Expected to Occur.** Suitable grassland habitat on north facing slopes within the fog belt not present within the Project Area.
western bumble bee *Bombus occidentalis*		SCS	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	**Not Expected to Occur.** Potential for suitable habitat for the species within the Project Area; However, there have been no documented occurrences within Santa Clara County since 1979 (CNDDB 2019). The Project Area is outside of the current range of the species (CDFW 2018).
Vernal pool tadpole shrimp *Lepidurus packardi*	E		Valley and foothill grassland, vernal pool, wetland. Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**Not Expected to Occur.** There is no suitable vernal pool habitat within the Project Area.
Fish				
delta smelt *Hypomesus transpacificus*	T	E	Aquatic, estuary. Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	**Not Expected to Occur.** There is no suitable estuary habitat for the species within the Project Area.
longfin smelt *Spirinchus thaleichthys*	C	SC	Aquatic, estuary. Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**Not Expected to Occur.** There is no suitable estuary habitat for the species within the Project Area

Species	Status [1]		Habitat	Potential for Occurrence [2]
	Federal	State		
steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	T		Aquatic. Sacramento/San Joaquin flowing waters. From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	**Not Expected to Occur.** No suitable stream habitat within the Project Area.
tidewater goby *Eucyclogobius newberryi*	E	SC	Aquatic, Klamath/north coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters. Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Not Expected to Occur.** No suitable lower reach stream habitat within the Project Area.
Amphibians and Reptiles				
Alameda whipsnake *Masticophis lateralis euryxanthus*	T	T	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	**Not Expected to Occur.** No suitable chaparral, scrub, woodland or grassland habitat within the Project Area.
California giant salamander *Dicamptodon ensatus*		SC	Aquatic, meadow and seep, north coast coniferous forest, and riparian forest. Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**Not Expected to Occur.** No suitable meadow, seep, north coast coniferous forest, or riparian forest habitat within the Project Area.
California red-legged frog *Rana draytonii*	T	SC	Aquatic, artificial flowing waters, artificial standing waters, freshwater marsh, marsh & swamp, riparian forest, riparian scrub, riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters. Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not Expected to Occur.** No suitable freshwater marsh, marsh & swamp, riparian forest, riparian scrub, riparian woodland habitat within the Project Area. The artificial water feature within the Project Area is drained and therefore not suitable aquatic habitat.
California tiger salamander *Ambystoma californiense*	T	T	Cismontane woodland, meadow and seep, riparian woodland, valley and foothill grassland, vernal pool, and wetlands. Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**Not Expected to Occur.** No suitable woodland, meadow, seep, riparian woodland, valley and foothill grassland, vernal pool, or wetland habitat within the Project Area. The artificial water feature within the Project Area is drained and therefore not suitable aquatic habitat.

Species	Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
foothill yellow-legged frog *Rana boylii*		E	Aquatic, chaparral, cismontane woodland, coastal scrub, Klamath/north coast flowing waters, lower montane coniferous forest, meadow and seep, riparian forest, riparian woodland, and Sacramento/San Joaquin flowing waters. Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	**Not Expected to Occur.** No suitable chaparral, cismontane woodland, coastal scrub, Klamath/north coast flowing waters, lower montane coniferous forest habitat within the Project Area. The artificial water feature within the Project Area is drained and therefore not suitable aquatic habitat.
green sea turtle *Chelonia mydas*	T		Marine bay. Marine. Completely herbivorous; needs adequate supply of seagrasses and algae.	**Not Expected to Occur.** No suitable marine habitat in the project area.
Northern California legless lizard *Anniella pulchra*		SC	Chaparral. Coastal dunes. Coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	**Not Expected to Occur.** No suitable chaparral, coastal scrub, or dune habitat within the Project Area.
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	E	E FP	Artificial standing waters, marsh and swamp, Sacramento/San Joaquin standing waters, wetland. Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	**Not Expected to Occur.** The artificial water feature within the Project Area is drained and therefore not suitable aquatic habitat. Project Area is outside of the range of the species which does not extend into Santa Clara County (USFWS 2019b).
Santa Cruz black salamander *Aneides niger*		SC	Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara counties. Adults found under rocks, talus, and damp woody debris.	**Not Expected to Occur.** No suitable chaparral, coastal scrub, or dune habitat within the Project Area.
western pond turtle *Actinemys marmorata*		SC	Aquatic, artificial flowing waters, Klamath/north coast flowing waters, Klamath/north coast standing waters, marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing and standing waters. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Not Expected to Occur.** The artificial water feature within the Project Area is drained and therefore not suitable aquatic habitat.
Birds				
Alameda song sparrow *Melospiza melodia pusillula*		SC	Salt marsh. Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	**Not Expected to Occur.** No suitable salt marsh habitat within the Project Area.
American peregrine falcon *Falco peregrinus anatum*	D	D FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**Not Expected to Occur.** Existing buildings within the Project Area are not likely tall enough to function as nesting habitat.
Black skimmer *Rynchops niger*		SC	Alkali playa, sand shore. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**Not Expected to Occur.** No suitable alkali playa or sandy shore habitat within the Project Area.

Species	Status [1]		Habitat	Potential for Occurrence [2]
	Federal	State		
burrowing owl *Athene cunicularia*		SC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Not Expected to Occur.** While this species may inhabit areas with low-growing ruderal vegetation, the landscaped and developed nature of the Project Area likely does not provide adequate burrows or foraging habitat to support the species.
California (Ridgway's) clapper rail *Rallus obsoletus obsoletus*	E	E FP	Brackish marsh, marsh and swamp, salt marsh, wetlands. Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**Not Expected to Occur.** No suitable marsh or wetland habitat within the Project Area.
California black rail *Laterallus jamaicensis coturniculus*		T FP	Brackish marsh, freshwater marsh, marsh and swamp, salt marsh, wetland. Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**Not Expected to Occur.** No suitable marsh or wetland habitat within the Project Area.
California least tern *Sternula antillarum browni*	E	E FP	Alkali playa, wetland. Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Not Expected to Occur.** No suitable alkali playa or sandy shore habitat within the Project Area.
marbled murrelet *Brachyramphus marmoratus*	T	E	Lower montane coniferous forest, old growth, redwood. Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	**Not Expected to Occur.** No suitable old growth redwood habitat within the Project Area.
northern harrier *Circus cyaneus*		SC	Coastal scrub, Great Basin grassland, marsh and swamp, riparian scrub, valley and foothill grassland, and wetlands. Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Not Expected to Occur.** No suitable grassland, scrub, or marsh habitat within the Project Area.
saltmarsh common yellowthroat *Geothlypis trichas sinuosa*		SC	Marsh and swamp. Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Expected to Occur.** No marsh or swamp habitat within the Project Area.
Swainson's hawk *Buteo swainsoni*		T	Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Not Expected to Occur.** Trees within the Project Area may provide nesting sites; however, there is no foraging habitat within the vicinity of the Project Area that would support this species.

Species	Status [1]		Habitat	Potential for Occurrence [2]
	Federal	State		
tricolored blackbird *Agelaius tricolor*		T SC	Freshwater marsh, marsh and swamp, swamp, wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not Expected to Occur.** No marsh, swamp or riparian habitat within the Project Area.
western snowy plover *Charadrius alexandrinus nivosus*	T	SC	Great Basin standing waters, sand shore, wetland. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Not Expected to Occur.** No suitable beach or similar habitat within the Project Area.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	T	E	Riparian forest. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Not Expected to Occur.** No suitable riparian habitat within the Project Area.
white-tailed kite *Elanus leucurus*		FP	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Not Expected to Occur.** Trees within the Project Area may provide nesting sites; however, there is no foraging habitat within the vicinity of the Project Area that would support this species.
yellow rail *Coturnicops noveboracensis*		SC	Freshwater marsh, meadow and seep. Summer resident in eastern Sierra Nevada in Mono County. Fresh-water marshlands.	**Not Expected to Occur.** No marsh habitat within the Project Area.
Mammals				
American badger *Taxidea taxus*		SC	Alkali marsh, alkali playa, alpine, alpine dwarf scrub, bog a fen, brackish marsh, broadleaved upland forest, chaparral, chenopod scrub, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Not Expected to Occur.** No suitable natural habitats in the Project Area that would support this species.
pallid bat *Antrozous pallidus*		SC	Chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, valley and foothill grassland. Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Could Occur.** The abandoned buildings and large trees within the Project Area could provide roosting sites for this species.
salt-marsh harvest mouse *Reithrodontomys raviventris*	E	E FP	Marsh and swamp, wetland. Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, build loosely organized nests. Requires higher areas for flood escape.	**Not Expected to Occur.** No salt marsh habitat within the Project Area.

Species	Status [1]		Habitat	Potential for Occurrence [2]
	Federal	State		
salt-marsh wandering shrew *Sorex vagrans halicoetes*		SC	Marsh and swamp, wetland. Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among Salicornia.	**Not Expected to Occur.** No salt marsh habitat within the Project Area.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*		SC	Chaparral, redwood. Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials.	**Not Expected to Occur.** No suitable natural habitats in the Project Area that would support this species.
San Joaquin kit fox *Vulpes macrotis mutica*	E	T	Chenopod scrub, valley and foothill grassland. Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Not Expected to Occur.** No suitable natural habitats in the Project Area that would support this species.
Townsend's big-eared bat *Corynorhinus townsendii*		SC	Broadleaved upland forest, chaparral, chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, lower montane coniferous forest, meadow & seep, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Could Occur.** The abandoned buildings and large trees within the Project Area could provide roosting sites for this species.

Notes:

[1] Legal Status Definitions

Federal:
E Endangered (legally protected)
T Threatened (legally protected)
C Candidate (legally protected)

State:
FP Fully protected (legally protected)
SC Species of special concern (no formal protection other than CEQA consideration)
SCS State Candidate Species (no formal protection but proposed candidate for listing under CESA)
E Endangered (legally protected)
T Threatened (legally protected)

Other:
WBWG: M Western Bat Working Group - Medium

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, has been reported by others.

Source: CDFW 2018; CNDDB 2019; ISI 2018; ISI 2018b; ISI 2018c

Appendix D

Air Quality, Greenhouse Gas Emissions, and Energy Modeling Data

LSAP Update Land Use

Land Use

Type	Sub-Type	Amount	Unit
Commercial	Office Park	1,200	1000sqft
Industrial	Manufacturing	9	1000sqft
Residential	Apartments High Rise	5,935	Dwelling Unit
Retail	Strip Mall	16.6	1000sqft

LSAP Title 24

EnergyUse	T24E	T24E - 201	NT24E	LightingEle	LightingEle	T24NG	T24NG - 2(	NT24NG
Apartment	332.81	156.4207	3054.1	741.44	348.4768	5484.45	2577.692	3155
Manufactu	1.48	1.036	3.7	3.08	2.156	19.71	13.797	6.67
Office Park	7.28	5.096	8.4	3.87	2.709	21.04	14.728	0.08
Strip Mall	2.76	1.932	2.68	5.25	3.675	2.37	1.659	0

Residential Title 24 improvement from 2016 to 2019

53%

Non-residential Title 24 improvement from 2016 to 2019

30%

ISI Land Use

1,000 KSF
43,560 SF/acre

Land Use	Square Feet/Acres				
Site Plan - North Site	Amount		Unit	Amount	Unit
Office Headquarters/Visitor Center		364,000	SF		
Employee Restaurant		13,000	SF		
Multi-purpose building		11,000	SF		
Central Utility Plant		0	SF		
Underground parking structure (two levels)	791 spaces, 395,000 SF				
Existing (modifications):					
Outdoor Sports Fields (soccor field)		24,360	SF		
Courts (basketball, volleyball)		19,240	SF		
Outdoor Dining Area		10,750	SF		
Shade Structure (picnic)		10,425	SF		
Amphitheater		9,937	SF		
Landscaping		339,044	SF		
Walkways		22,075	SF		
Surface Parking	31 spaces, 11,000 SF				
Driveways/Roadways		79,573	SF		
Total		1,309,404	SF	30	
CalEEMod Inputs- North Site					
General Office Building		375	KSF	2.869605	Lot acreage
High Turnover (Sit Down Restaurant)		13	KSF		
Enclosed Parking with Elevator		395	KSF	4.533976	Lot acreage
City Park		75	KSF		
Other Non-Asphalt Surfaces		361	KSF		
Parking Lot		11	KSF		
Other Asphalt Surfaces		80	KSF		
Total		1,309	KSF		
Site Plan - South Site					
Manufacturing/research/development facility		847,000	SF		
Employee Restaurant		16,000	SF		
Parking Garage (five levels)	1671 spaces, 550,000 SF				
Central Utility Plant		12,000	SF		
Visitor Parking Lots	57 spaces, 18,000 SF				
Pedestrian-Bicycle Path		7,735	SF		
Walkways		16,725	SF		
Driveways/Roadways		130,294	SF		
Landscaping		138,300	SF		
Total		1,736,054	SF	40	
CalEEMod Inputs - South Site					
Research & Development		847	KSF	6.481481	Lot acreage
High Turnover (Sit Down Restaurant)		16	KSF		
Unenclosed Parking with Elevator		550	KSF	2.525253	Lot acreage
General Light Industry		12	KSF		
Parking Lot		18	KSF		
Other Asphalt Surfaces		138	KSF		
Other Non-Asphalt Surfaces		155	KSF		
Total		1736.054	KSF		

ISI Demolition & Hauling

Demo

			Conversion for CalEEMod				
	Size	**Unit**	**Size**[1]	**Unit**	**Weight of Crushed asphalt (lbs/CF)**[2]	**Mass (tons)**	
Building	170,128	SF	7825.888	Tons			7,826
Asphalt	313,449	CY	11609.22222	CF	89		516
Concrete	84,165	CY	3117.222222	CF	89		139
Manmade pond	46,958	CY	1739.185185	CF	89		77
Total Demo							8,558
Total Demo per ISI Site							2,853

1. CalEEMod User's Guide Version 2016 3.2, Appendix A
2. https://www.calrecycle.ca.gov/swfacilities/cdi/tools/calculations

Hauling

	Size	**Unit**
Export	570,000	CY

ISI Batch Plant Emissions

Batch Plant Max Throughput

	Unit
401	cy/day
22	months

	Emission Factors			Calculated Emissions		
Batching Processes[1]	**PM10[2]**	**PM2.5[3]**	**Units**	**PM10[2]**	**PM2.5[3]**	**Units**
Aggregate Transfer	-	-	-	-	-	-
Sand Transfer	-	-	-	-	-	-
Cement unloading	0.000083	0.000015	lbs/cy	0.033297	0.006017	lb/day
Cement supplement unloading	0.00018	0.000034	lbs/cy	0.072209	0.01364	lb/day
weigh hopper loading	-	-	-	-	-	-
Mixer loading (central mix)	0.0117	0.001755	lbs/cy	4.69374	0.704061	lb/day
Total				**4.799246**	**0.723718**	**lb/day**

1. Controlled processess assumes controls such as baghouses, generator housing, batching methodology (wet batch versus dry batch). Emfacs are for a central mixing batch plant
2. SMAQMD 2010 (June 28). Concrete Batching Operations Policy Manual. Last updated March 31, 2011.
3. SMAQMD 2010 (June 28). Concrete Batching Operations Policy Manual. Last

Wind Speed Conversion

	Units	Source
2.2	m/sec	CalEEMod for Santa Clara County, Appendix D
3600	sec/hr	google.com
1609.3	m/mile	
4.9	mph	

Cement Moisture

23	%	Average of Tested facilities - https://www3.epa.gov/ttn/chief/ap42/ch11/bgdocs/b11s12.pdf

ISI Rock Crushing

Rock Crush Throughput

50,000	tons
30	Days
1,667	tons/day

Equipment Type	PM10		PM2.5	
	Emissions Factor (lb/ton)[1]	Daily lb/day	Emissions Factor (lb/ton)[1]	Daily lb/day
Hopper Loading	0.00052	0.8699452	0.00008	0.13173456
Primary Crusher	0.00054	0.9	0.0001	0.16666667
Conveyor Transfer	0.000046	0.07666667	0.000013	0.02166667
Screen 1	0.00074	1.23333333	0.00005	0.08333333
Conveyor Transfer	0.000046	0.07666667	0.000013	0.02166667
Conveyor Transfer to Pile	0.00052	0.8699452	0.00008	0.13173456
Conveyor Transfer	0.000046	0.07666667	0.000013	0.02166667
Secondary Crusher	0.00054	0.9	0.0001	0.16666667
Conveyor Transfer	0.000046	0.07666667	0.000013	0.02166667
Screen 2	0.00074	1.23333333	0.00005	0.08333333
Conveyor Transfer	0.000046	0.07666667	0.000013	0.02166667
Conveyor Transfer to Pile	0.00052	0.8699452	0.00008	0.13173456
Total		**7.26**		**1.00**

Aggregate Storage Piles [2]

Emissions result from several distinct processes within the stockpiling cycle: 1. loading in of materials through batch or drop operations, 2. equipment traffic in storage areas,

E(lb/ton)=(k)(0.0032)(U/5)^1.3/(M/2)^1.4

Where:	PM10	PM2.5	Unit	Source
k= Particle Size Multiplier:	0.35	0.053	lbs/ton	AP-42 Chapter 13.2.4-3, PM10 emissions
U=mean wind speed	4.9	4.9	mph	CalEEMod for Santa Clara
M=moisture content (%)	3.4	3.4	constant	AP-42 Chapter 13.2.4-3, Table 13.2.4-1, exposed ground
	0.00052	**0.00008**	**lbs/ton**	

1. EPA 2004. AP-42, Chapter 11.19.2 Crushed Stone Processing and Pulverizing Mineral Processing, Table 11.19.2-2.
2. EPA 2006.AP-42, Chapter 13.2.4 Miscellaneous Sources, Aggregate Storage Piles, Equation 1

ISI Trips

	CalEEMod default		
	Weekday	**Saturday**	**Sunday**
GeneralOffice Building	11.03	2.46	1.05
% of Weekday	100%	22%	10%
R&D	8.11	1.9	1.11
% of Weekday	100%	23%	14%

	Adjusted*		
	Weekday (Provided in TIA)	**Saturday**	**Sunday**
GeneralOffice Building	9.74	2.21	0.7
R&D	11.26	1.9	1.11

*ITE Trip Generation Manual 10th Edition

ISI Proposed EV Charging stations

1	Number of Charging Stations	155	From calcualted number of electrically connected parking spaces
2	Connections per Charging Station	2	2 Connections at each charging station
3	Average Charging Hours per Connection per Day	3	Note 1
4	Average Total Hours Charging per year for all Connections	930	Item 1 * Item 2 * Item 3 * 365
5	Typical Average Charging Rate (kWh/hr)	6	Note 2
6	Total kWh charged per year	5,580	Item 4 * Item 5
7	Total MWh charged per year	6	Item 6 / 1000
8	**Public Charging Stations**		
9	Average Efficiency of EV LDV (kWh/100 mi)	31.5	Note 3
10	Average Efficiency of EV LDV (miles per kWh)	3.2	100 mi / Item 9
11	Number of Equivalent Miles Charged per year (gasoline miles avoided)	17,856	Item 6 * Item 10
12			
13	PG&E CO2 intensity in 2024 (lbs/MWh)	160.2	Note 4
14			
15	ROG Running Only emission factor for gasoline vehicles in 2035 (g/mi)	0.00164	Note 5
16			
17	NOx running emission factor for gasoline vehicles in 2035 (g/mi)	0.01132	Note 5
18			
19	CO2 running emission factor for gasoline vehicles in 2035 (g/mi)	224.8	Note 5
20			
21			
22	**Annual ROG Emissions Saved through Charging (tons per year)**	0.000032221970	Item 11 * Item 15 converted to tons
23	**Annual NOx Emissions Saved through Charging (tons per year)**	1.7388	Item 11 * Item 17 converted to tons
24			
25	Annual CO2 Emissions Saved through Charging (tons per year)	4	Item 11 * Item 19 converted to tons
26	Annual CO2 Emissions Saved through Charging (metric tons per year)	4	Convert Item 23 to metric tons
27	Annual CO2 Emissions from Electricity required to charge (metric tons per year)	0	Item 7 * Item 13 converted to metric tons
28	**Net Annual CO2 Emissions Saved (metric tons peryear)**	**3.608**	Item 26 minus Item 27

Note 1: Drive Clean California states that it takes 4 to 6 hours to fully charge an EV. But one would not typically allow the vehicle to be empty before charging, thus assumed 3 hrs/charge.
Note 2: Drive Clean California states that EVs have battery capacities of 24 to 36 kWh and fully charge in 4 to 6 hours, so 6 kWh/hr.
Note 3: Average effeciency of 24 model year 2019 electric vehicles, per USDOE. Used only model year 2019 because vehicles will be more efficient in 2035 than in the past.
Note 4: Estimated based on 2017 Power Content Label
Note 5: From EMFAC 2017 for gasoline engines, all models and model years; calendar year 2024.

ISI Energy

EnergyUse	T24E	T24E - 2019	NT24E	LightingElect	LightingElect - 2019	T24NG	T24NG - 2019	NT24NG
City Park	0	0	0	0	0	0	0	0
Enclosed P	3.92	2.744	0.19	1.75	1.225	0	0	0
General Lig	1.96	1.372	4.16	2.7	1.89	17.03	11.921	3.84
General Ot	2.62	1.834	3.58	2.92	2.044	12.77	8.939	0.28
High Turnc	6.55	4.585	16.25	6.17	4.319	35.72	25.004	174.7
Other Aspl	0	0	0	0	0	0	0	0
Other Non	0	0	0	0	0	0	0	0
Parking Lo	0	0	0	0.35	0.245	0	0	0
Research &	1.96	1.372	4.16	2.7	1.89	17.03	11.921	3.84
Unenclose	0	0	0.19	1.75	1.225	0	0	0

Non-residential Title 24 improvement from 2016 to 2019

30%

ISI Operations Miscellaneous

Water

CalEEMod default

	Indoor	Outdoor	Unit
General Office Building	66,650,155.50	40,850,095.30	gal/year
% of Total	0.62	0.38	

Provided

	Total	Unit
	87,512,400	gal/year

Adjusted

	Indoor	Outdoor	Total (check)	Unit
General Office Building	54,257,688	33,254,712	87,512,400	gal/year

Solid Waste

Provided

Total	Unit
1,253	tons/year

Vegetation

	Trees
Existing	1,295
Preserved trees	692
Removed trees	603
New trees	603
Net New trees	0
Total ISI trees	692
Difference from Existing to Proposed	-603

Sequestration[1]

Total sequestered CO2 = ((Growing Period * Sequestration *i* * Trees *i)* / Total GHG Emissions)

Where:
Growing Period = 20 years (IPCC)
Sequestration i = Miscellaneous species class 0.0354 (MTCO2e/yr)
Trees i = Net new trees

Existing
Total Sequestered CO2 = 916.86

Proposed
Total Sequestered CO2 = 489.94

1. CAPCOA. 2010. Quantifiying Greenhouse Gas Mitigation Measures, V-1

Electricity Emission Factors

Conversion Factors	Value	Source/notes
g/MT	1000000	
g/ton	907184.74	
g/lb	453.592	
lb/ton	2000	
lb/MT	2204.622622	
kg/MT	1000	
lb/kg	2.20462	
kWh/MWh	1000	
MWh/GWh	1000	
Btu/therm	100000	
kBTU/MMBTU	1000	
MMBtu/therm	0.1	
MMBtu/MWh	3.41214148	Onlineconversion.com
gal/cubic foot	7.480519481	Onlineconversion.com
gal/Liter	3.785411784	Onlineconversion.com
gallon/acrefoot	325851.429	Onlineconversion.com
million gal/acre-feet	0.325851429	Onlineconversion.com
gal/barrel	42	Onlineconversion.com
kBTU/MJ	0.947817078	Onlineconversion.com

GWP Factors	Value	Comment
CO2	1	IPCC Fifth Assessment Report
CH4	34	
N2O	298	

Average California Electricity Emissions Factors

Year	State annual CO2 combustion output emission rate (lb/MWh)	State annual CH4 combustion output emission rate (lb/GWh)	State annual N2O combustion output emission rate (lb/GWh)	Zero Carbon Sources*	GHG-Emitting Generation Sources	Source
2009	906.9	50.6	7.3			https://www.epa.gov/energy/emissions-generation-resource-integrated-d
2010	874.9	52.5	7.6	45%	55%	https://www.epa.gov/energy/emissions-generation-resource-integrated-d
2011	874.9	52.5	7.6			2010 values
2012	881.5	50.9	6.9	38%	62%	https://www.epa.gov/energy/emissions-generation-resource-integrated-d
2013	881.5	50.9	6.9			2012 values
2014	844.8	51.7	6.3	38%	62%	https://www.epa.gov/energy/emissions-generation-resource-integrated-d
2015	844.8	51.7	6.3			2014 values
2016	452.5	26.0	3.0	50%	50%	https://www.epa.gov/sites/production/files/2018-02/egrid2016_summar
2017	436.9	25.1	2.9	48%	52%	
2018	421.3	24.2	2.8	46%	54%	
2019	405.7	23.3	2.7	44%	56%	
2020	390.1	22.4	2.6	43%	57%	
2021	374.5	21.5	2.5	41%	59%	
2022	358.9	20.6	2.4	39%	61%	
2023	343.3	19.7	2.3	38%	62%	
2024	327.7	18.8	2.2	36%	64%	
2025	312.1	17.9	2.1	34%	66%	
2026	296.5	17.0	2.0	32%	68%	
2027	280.9	16.1	1.9	31%	69%	
2028	265.3	15.2	1.8	29%	71%	
2029	249.7	14.3	1.7	27%	73%	
2030	234.1	13.4	1.6	26%	74%	
2031	218.4	12.6	1.4	24%	76%	
2032	202.8	11.7	1.3	22%	78%	
2033	187.2	10.8	1.2	21%	79%	
2034	171.6	9.9	1.1	19%	81%	
2035	156.0	9.0	1.0	17%	83%	
2036	140.4	8.1	0.9	15%	85%	
2037	124.8	7.2	0.8	14%	86%	
2038	109.2	6.3	0.7	12%	88%	
2039	93.6	5.4	0.6	10%	90%	
2040	78.0	4.5	0.5	9%	91%	
2041	62.4	3.6	0.4	7%	93%	
2042	46.8	2.7	0.3	5%	95%	
2043	31.2	1.8	0.2	3%	97%	
2044	15.6	0.9	0.1	2%	98%	
2045	0.0	0.0	0.0	100%	0%	

Note: Projections from 2017 - 2045 based upon state legislative requirements under SB100 for all retail electricity generation to be zero-carbon by 2045. Projections can be replaced with actual repored figures from eGrid in future updates to this inventory.

* Averages used in projections to normalize for year-to-year variability in hydropower production

** Zero-Carbon Sources include all GHG neutral sources of electricity generation including nuclear, hydropower, biomass, wind, solar and geothermal.

Electricity emission factors - by utility

Utility	Year	GHG-free mix*	lb CO2/MWh	lb CH4/MWh	lb N2O/MWh	lb CO2e/MWh	Notes	Source
PG&E	2008	not available	641.000	0.051	0.007	644.9	GHG-Free percentage n	https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
PG&E	2009	not available	575.000	0.051	0.007	578.9	2010 values - no PCL for	https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
PG&E	2010	55%	445.000	0.053	0.008	449.0	http://ww2.energy.ca.g	https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
PG&E	2011	59%	393.000	0.053	0.008	397.0	http://ww2.energy.ca.g	https://www.sec.gov/Archives/edgar/data/75488/000100498013000013/form10k.htm
PG&E	2012	51%	445.000	0.051	0.007	448.8	http://ww2.energy.ca.g	https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
PG&E	2013	54%	427.000	0.051	0.007	430.8	http://ww2.energy.ca.g	CO2: SEC 10-k Form
PG&E	2014	56%	435.000	0.052	0.006	438.6	http://ww2.energy.ca.g	CO2: SEC 10-k Form
PG&E	2015	59%	405.000	0.052	0.006	408.6	http://ww2.energy.ca.g	CO2: SEC 10-k Form
PG&E	2016	69%	294.000	0.026	0.003	295.8	http://ww2.energy.ca.g	CO2: SEC 10-k Form. CH4 and
PG&E	2017	78%	210.0	0.025	0.003	211.7	http://ww2.energy.ca.g	CO2: SEC 10-k Form
PG&E	2018	78%	206.0	0.024	0.003	207.7	Assume power mix sam	CO2: SEC 10-k Form
PG&E	2019	79%	198.4	0.023	0.003	200.0	GHG-Free percentage interpolated based on 2017 PCL	
PG&E	2020	80%	190.7	0.022	0.003	192.3		
PG&E	2021	80%	183.1	0.022	0.002	184.6		
PG&E	2022	81%	175.5	0.021	0.002	176.9		
PG&E	2023	82%	167.9	0.020	0.002	169.2		
PG&E	2024	83%	160.2	0.019	0.002	161.5		
PG&E	2025	84%	152.6	0.018	0.002	153.8		
PG&E	2026	85%	145.0	0.017	0.002	146.1		
PG&E	2027	85%	137.3	0.016	0.002	138.4		
PG&E	2028	86%	129.7	0.015	0.002	130.7		
PG&E	2029	87%	122.1	0.014	0.002	123.1		
PG&E	2030	88%	114.4	0.013	0.002	115.4		
PG&E	2031	89%	106.8	0.013	0.001	107.7		
PG&E	2032	89%	99.2	0.012	0.001	100.0		
PG&E	2033	90%	91.6	0.011	0.001	92.3		
PG&E	2034	91%	83.9	0.010	0.001	84.6		
PG&E	2035	92%	76.3	0.009	0.001	76.9		
PG&E	2036	93%	68.7	0.008	0.001	69.2		
PG&E	2037	93%	61.0	0.007	0.001	61.5		
PG&E	2038	94%	53.4	0.006	0.001	53.8		
PG&E	2039	95%	45.8	0.005	0.001	46.1		
PG&E	2040	96%	38.1	0.004	0.001	38.5		
PG&E	2041	97%	30.5	0.004	0.000	30.8		
PG&E	2042	98%	22.9	0.003	0.000	23.1		
PG&E	2043	98%	15.3	0.002	0.000	15.4		
PG&E	2044	99%	7.6	0.001	0.000	7.7		
PG&E	2045	100%	0.0	0.000	0.000	0.0		

*This is the percentage of power provided by large hydro, renewables, and nuclear, and other resources that emit either no GHGs or a negligible amount of GHGs. Percentage based on published power mix from CEC's Power Content Label for each utility.

LSAP SAFE Rule Adjustment Factors

EMFAC2014 Adjustment Factors for Gasoline LD/MD Vehicles					
Calendar Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust
enter year --> 2035	1.0103	1.0179	1.007	1.0362	1.0285

(*Includes LDA, LDT1, LDT2 and MDV vehicle categories)

Original CalEEMod Emission Factors from 'tblVehicleEF' Tab (paste values below)

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003356	0.002294	0.016324	0.248035	0.012127	0	0	0.82822	0
A	CH4_RUNEX	0.001407	0.002217	0.002255	0.003691	0.006057	0.004903	0.002447	0.057474	0.003611	0.233349	0.456342	0.004009	0.005606
A	CH4_STREX	0.001188	0.00215	0.002015	0.004687	0.007289	0.002373	0.028264	0.054094	0.020603	0.052132	0.153267	0.052078	0.014612
A	CO_IDLEX	0	0	0	0	0.131443	0.11801	0.380502	1.394551	0.242848	0	0	9.243297	0
A	CO_RUNEX	0.272009	0.376949	0.417386	0.54826	0.496065	0.438726	0.229946	0.94522	0.268729	2.417998	17.19966	0.277617	0.274615
A	CO_STREX	0.455313	0.670041	0.674405	1.097136	1.290421	0.838792	3.306837	4.325276	3.871589	7.856915	10.40767	6.901346	3.319613
A	CO2_NBIO_IDLEX	0	0	0	0	8.872501	13.42934	127.0481	4009.915	100.5824	0	0	979.8635	0
A	CO2_NBIO_RUNEX	165.2529	211.8446	242.2376	327.5477	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
A	CO2_NBIO_STREX	37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
A	NOx_IDLEX	0	0	0	0	0.056541	0.056035	0.318978	11.7188	0.22258	0	0	2.548197	0
A	NOx_RUNEX	0.020132	0.029777	0.031248	0.05144	0.305741	0.115757	0.98515	1.464932	0.774529	2.704117	1.133015	1.014917	0.710166
A	NOx_STREX	0.018331	0.029662	0.032269	0.072606	0.498995	0.212131	9.600555	19.10012	2.674971	12.38707	0.315684	10.24085	0.559951
A	PM10_IDLEX	0	0	0	0	0.000714	0.000938	0.000034	0.0023	0.00002	0	0	0.000491	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
A	PM10_RUNEX	0.000814	0.001012	0.000965	0.001057	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
A	PM10_STREX	0.00134	0.001611	0.001533	0.001641	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
A	PM25_IDLEX	0	0	0	0	0.000684	0.000897	0.000033	0.0022	0.000019	0	0	0.00047	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
A	PM25_RUNEX	0.000749	0.00093	0.000888	0.000973	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
A	PM25_STREX	0.001232	0.001481	0.001409	0.001508	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
A	ROG_DIURN	0.012629	0.025463	0.022204	0.046441	0.00132	0.000456	0.000618	0.000112	0.001186	0.003062	0.87381	0.004109	0.320359
A	ROG_HTSK	0.042473	0.069076	0.051095	0.105109	0.053937	0.014282	0.028542	0.004928	0.014861	0.044584	0.596966	0.035854	0.022862
A	ROG_IDLEX	0	0	0	0	0.012688	0.010875	0.025267	0.363481	0.032228	0	0	1.108833	0
A	ROG_RESTL	0.011495	0.023	0.021391	0.045923	0.000775	0.000284	0.000387	0.000071	0.00055	0.001836	0.457896	0.001955	0.14036
A	ROG_RUNEX	0.003526	0.005494	0.005606	0.009259	0.089401	0.090021	0.039265	0.081602	0.036454	0.130408	2.10552	0.044925	0.029166
A	ROG_RUNLS	0.028822	0.057855	0.045004	0.07312	0.128033	0.029131	0.015048	0.000458	0.036407	0.01196	0.417549	0.0198	0.003797
A	ROG_STREX	0.016022	0.029	0.027172	0.063203	0.098303	0.032001	0.214445	0.073751	0.250564	0.703063	2.086788	0.373807	0.197056
A	SO2_IDLEX	0	0	0	0	0.000088	0.000131	0.001225	0.037288	0.000971	0	0	0.009676	0
A	SO2_RUNEX	0.001653	0.002121	0.002425	0.003275	0.00607	0.006477	0.011133	0.013756	0.012273	0.015978	0.002063	0.00952	0.011619
A	SO2_STREX	0.000385	0.000499	0.000564	0.000758	0.000265	0.000226	0.000664	0.000199	0.000714	0.001504	0.000651	0.000757	0.000618
A	TOG_DIURN	0.012629	0.025463	0.022204	0.046441	0.00132	0.000456	0.000618	0.000112	0.001186	0.003062	0.87381	0.004109	0.320359
A	TOG_HTSK	0.042473	0.069076	0.051095	0.105109	0.053937	0.014282	0.028542	0.004928	0.014861	0.044584	0.596966	0.035854	0.022862
A	TOG_IDLEX	0	0	0	0	0.016926	0.013985	0.035949	0.422036	0.045155	0	0	1.611503	0
A	TOG_RESTL	0.011495	0.023	0.021391	0.045923	0.000775	0.000284	0.000387	0.000071	0.00055	0.001836	0.457896	0.001955	0.14036
A	TOG_RUNEX	0.005128	0.008015	0.008171	0.013466	0.103485	0.10313	0.045259	0.146744	0.04322	0.37632	2.643212	0.052867	0.037017
A	TOG_RUNLS	0.028822	0.057855	0.045004	0.07312	0.128033	0.029131	0.015048	0.000458	0.036407	0.01196	0.417549	0.0198	0.003797
A	TOG_STREX	0.017542	0.031752	0.02975	0.0692	0.107629	0.035037	0.23479	0.080748	0.274336	0.769766	2.273195	0.409272	0.215752
S	CH4_IDLEX	0	0	0	0	0.003356	0.002294	0.015166	0.23375	0.01211	0	0	0.828118	0
S	CH4_RUNEX	0.00157	0.002468	0.002512	0.004106	0.006124	0.004928	0.002471	0.057519	0.003684	0.233566	0.445091	0.004082	0.005768
S	CH4_STREX	0.000988	0.001786	0.001717	0.003929	0.006867	0.002325	0.026509	0.050734	0.019275	0.046129	0.13036	0.04374	0.01367
S	CO_IDLEX	0	0	0	0	0.131443	0.11801	0.26317	1.013339	0.236395	0	0	9.2002	0
S	CO_RUNEX	0.321598	0.443572	0.491836	0.644341	0.499389	0.440155	0.231033	0.955457	0.271926	2.427484	16.67898	0.280783	0.281981
S	CO_STREX	0.361923	0.531986	0.563036	0.895115	1.200772	0.783073	3.039744	3.975923	3.529098	6.389908	9.013808	5.069494	3.025952

S	CO2_NBIO_IDLEX	0	0	0	0	8.872501	13.42934	134.732	4248.15	105.6175	0	0	1019.388	0
S	CO2_NBIO_RUNEX	178.1502	227.9995	260.7342	351.777	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
S	CO2_NBIO_STREX	37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
S	NOx_IDLEX	0	0	0	0	0.056541	0.056035	0.32926	12.09577	0.229664	0	0	2.627019	0
S	NOx_RUNEX	0.018142	0.026758	0.028092	0.046207	0.291594	0.110505	0.946141	1.408448	0.741574	2.586614	0.99987	0.972862	0.674989
S	NOx_STREX	0.016317	0.026403	0.029334	0.065173	0.466387	0.207738	9.569204	19.07792	2.632958	12.30513	0.290822	10.20519	0.522258
S	PM10_IDLEX	0	0	0	0	0.000714	0.000938	0.000029	0.001939	0.000017	0	0	0.000414	0
S	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
S	PM10_PMTW	0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
S	PM10_RUNEX	0.000814	0.001012	0.000965	0.001057	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
S	PM10_STREX	0.00134	0.001611	0.001533	0.001641	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
S	PM25_IDLEX	0	0	0	0	0.000684	0.000897	0.000028	0.001855	0.000016	0	0	0.000396	0
S	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
S	PM25_PMTW	0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
S	PM25_RUNEX	0.000749	0.00093	0.000888	0.000973	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
S	PM25_STREX	0.001232	0.001481	0.001409	0.001508	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
S	ROG_DIURN	0.028912	0.05773	0.050218	0.103368	0.002881	0.000997	0.001347	0.000241	0.002583	0.006729	2.246632	0.00884	0.699574
S	ROG_HTSK	0.045981	0.076383	0.057069	0.115725	0.059158	0.015552	0.030767	0.005272	0.015751	0.050005	0.824552	0.036639	0.024772
S	ROG_IDLEX	0	0	0	0	0.012688	0.010875	0.023508	0.342547	0.031892	0	0	1.107666	0
S	ROG_RESTL	0.023429	0.045965	0.043149	0.090457	0.001518	0.000562	0.000764	0.00014	0.001106	0.003704	1.235897	0.003844	0.280486
S	ROG_RUNEX	0.00393	0.006114	0.006242	0.010286	0.089565	0.090084	0.039323	0.081713	0.036634	0.130945	2.051603	0.045105	0.029566
S	ROG_RUNLS	0.026664	0.053328	0.041459	0.067746	0.123972	0.028082	0.014434	0.000438	0.035194	0.0107	0.384874	0.017013	0.003681
S	ROG_STREX	0.013321	0.024086	0.023157	0.05299	0.092606	0.031354	0.201125	0.06917	0.234414	0.622102	1.774815	0.31396	0.184356
S	SO2_IDLEX	0	0	0	0	0.000088	0.000131	0.001297	0.039504	0.001019	0	0	0.010053	0
S	SO2_RUNEX	0.001782	0.002283	0.00261	0.003518	0.00607	0.006477	0.011133	0.013757	0.012273	0.015979	0.002052	0.00952	0.011619
S	SO2_STREX	0.000383	0.000496	0.000562	0.000754	0.000264	0.000225	0.00066	0.000193	0.000708	0.001478	0.000619	0.000727	0.000613
S	TOG_DIURN	0.028912	0.05773	0.050218	0.103368	0.002881	0.000997	0.001347	0.000241	0.002583	0.006729	2.246632	0.00884	0.699574
S	TOG_HTSK	0.045981	0.076383	0.057069	0.115725	0.059158	0.015552	0.030767	0.005272	0.015751	0.050005	0.824552	0.036639	0.024772
S	TOG_IDLEX	0	0	0	0	0.016926	0.013985	0.033436	0.39773	0.044773	0	0	1.610173	0
S	TOG_RESTL	0.023429	0.045965	0.043149	0.090457	0.001518	0.000562	0.000764	0.00014	0.001106	0.003704	1.235897	0.003844	0.280486
S	TOG_RUNEX	0.005719	0.008919	0.009099	0.014965	0.103725	0.103221	0.045345	0.146906	0.043483	0.377104	2.575999	0.053131	0.037601
S	TOG_RUNLS	0.026664	0.053328	0.041459	0.067746	0.123972	0.028082	0.014434	0.000438	0.035194	0.0107	0.384874	0.017013	0.003681
S	TOG_STREX	0.014585	0.026371	0.025354	0.058017	0.101392	0.034329	0.220207	0.075732	0.256654	0.681123	1.933399	0.343747	0.201846
W	CH4_IDLEX	0	0	0	0	0.003356	0.002294	0.017487	0.267763	0.012151	0	0	0.82836	0
W	CH4_RUNEX	0.001366	0.002154	0.00219	0.003586	0.006003	0.004883	0.002429	0.05744	0.003554	0.233185	0.470649	0.003951	0.005481
W	CH4_STREX	0.001343	0.002431	0.002245	0.00527	0.007653	0.002414	0.029714	0.056869	0.021674	0.057198	0.175392	0.059588	0.015371
W	CO_IDLEX	0	0	0	0	0.131443	0.11801	0.500078	1.920986	0.251759	0	0	9.302812	0
W	CO_RUNEX	0.266378	0.369488	0.409018	0.537506	0.493462	0.437607	0.229123	0.937539	0.266308	2.410968	18.39411	0.275131	0.269037
W	CO_STREX	0.531869	0.783004	0.765647	1.262346	1.378134	0.894078	3.548392	4.641225	4.177025	9.198466	11.9251	8.745974	3.581502
W	CO2_NBIO_IDLEX	0	0	0	0	8.872501	13.42934	116.8035	3680.924	93.62911	0	0	925.2816	0
W	CO2_NBIO_RUNEX	163.1281	209.1831	239.1904	323.556	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
W	CO2_NBIO_STREX	37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
W	NOx_IDLEX	0	0	0	0	0.056541	0.056035	0.304812	11.19823	0.212798	0	0	2.439348	0
W	NOx_RUNEX	0.021984	0.032541	0.034144	0.056199	0.312404	0.118181	1.001639	1.490612	0.789288	2.753543	1.213265	1.033676	0.727012
W	NOx_STREX	0.019888	0.032179	0.034536	0.078341	0.528072	0.216064	9.62756	19.11924	2.711695	12.45376	0.335658	10.27105	0.592899
W	PM10_IDLEX	0	0	0	0	0.000714	0.000938	0.000042	0.002798	0.000024	0	0	0.000598	0
W	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
W	PM10_PMTW	0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
W	PM10_RUNEX	0.000814	0.001012	0.000965	0.001057	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
W	PM10_STREX	0.00134	0.001611	0.001533	0.001641	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
W	PM25_IDLEX	0	0	0	0	0.000684	0.000897	0.00004	0.002677	0.000023	0	0	0.000572	0
W	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
W	PM25_PMTW	0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
W	PM25_RUNEX	0.000749	0.00093	0.000888	0.000973	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
W	PM25_STREX	0.001232	0.001481	0.001409	0.001508	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
W	ROG_DIURN	0.006213	0.012806	0.011125	0.023655	0.000708	0.000243	0.000331	0.00006	0.000659	0.001776	0.3849	0.00232	0.177893
W	ROG_HTSK	0.043685	0.071651	0.053132	0.108763	0.055754	0.014699	0.029263	0.005038	0.015169	0.046535	0.686548	0.036182	0.023559
W	ROG_IDLEX	0	0	0	0	0.012688	0.010875	0.027089	0.39239	0.032692	0	0	1.110446	0
W	ROG_RESTL	0.005755	0.011708	0.010754	0.023487	0.000429	0.000155	0.000212	0.000039	0.00032	0.001096	0.180995	0.00115	0.082187
W	ROG_RUNEX	0.003424	0.005337	0.005445	0.008998	0.089267	0.089971	0.039219	0.081518	0.036314	0.130003	2.173486	0.04478	0.028857
W	ROG_RUNLS	0.034948	0.071179	0.055289	0.08897	0.143983	0.032733	0.016997	0.000517	0.039952	0.01539	0.515509	0.025207	0.004168
W	ROG_STREX	0.018108	0.032788	0.030273	0.071078	0.103212	0.032561	0.225444	0.077534	0.263588	0.77138	2.388125	0.427708	0.2073
W	SO2_IDLEX	0	0	0	0	0.000088	0.000131	0.001128	0.034229	0.000905	0	0	0.009155	0
W	SO2_RUNEX	0.001632	0.002094	0.002394	0.003235	0.00607	0.006477	0.011133	0.013756	0.012273	0.015978	0.002084	0.00952	0.011619
W	SO2_STREX	0.000386	0.0005	0.000565	0.00076	0.000267	0.000227	0.000668	0.000204	0.000719	0.001527	0.000684	0.000788	0.000622
W	TOG_DIURN	0.006213	0.012806	0.011125	0.023655	0.000708	0.000243	0.000331	0.00006	0.000659	0.001776	0.3849	0.00232	0.177893
W	TOG_HTSK	0.043685	0.071651	0.053132	0.108763	0.055754	0.014699	0.029263	0.005038	0.015169	0.046535	0.686548	0.036182	0.023559
W	TOG_IDLEX	0	0	0	0	0.016926	0.013985	0.038534	0.455603	0.045684	0	0	1.613339	0
W	TOG_RESTL	0.005755	0.011708	0.010754	0.023487	0.000429	0.000155	0.000212	0.000039	0.00032	0.001096	0.180995	0.00115	0.082187
W	TOG_RUNEX	0.00498	0.007785	0.007936	0.013084	0.103291	0.103057	0.045193	0.146621	0.043016	0.375728	2.728073	0.052657	0.036565
W	TOG_RUNLS	0.034948	0.071179	0.055289	0.08897	0.143983	0.032733	0.016997	0.000517	0.039952	0.01539	0.515509	0.025207	0.004168
W	TOG_STREX	0.019826	0.035899	0.033145	0.077821	0.113004	0.03565	0.246833	0.08489	0.288596	0.844564	2.601394	0.468286	0.226967

Adjusted CalEEMod Emission Factors (copy into CalEEMod 'tblVehicleEF', paste as values)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0	0	0	0	0.003356	0.002294	0.016324	0.248035	0.012127	0	0	0.82822	0
0.001407	0.002217	0.002255	0.003691	0.006057	0.004903	0.002447	0.057474	0.003611	0.233349	0.456342	0.004009	0.005606
0.001188	0.00215	0.002015	0.004687	0.007289	0.002373	0.028264	0.054094	0.020603	0.052132	0.153267	0.052078	0.014612
0	0	0	0	0.131443	0.11801	0.380502	1.394551	0.242848	0	0	9.243297	0
0.279761	0.387692	0.4292815	0.563885	0.496065	0.438726	0.229946	0.94522	0.268729	2.417998	17.19966	0.277617	0.274615
0.468289	0.689137	0.69362554	1.128404	1.290421	0.838792	3.306837	4.325276	3.871589	7.856915	10.40767	6.901346	3.319613
0	0	0	0	8.872501	13.42934	127.0481	4009.915	100.5824	0	0	979.8635	0
165.2529	211.8446	242.2376	327.5477	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
0	0	0	0	0.056541	0.056035	0.318978	11.7188	0.22258	0	0	2.548197	0
0.020339	0.030084	0.03156985	0.05197	0.305741	0.115757	0.98515	1.464932	0.774529	2.704117	1.133015	1.014917	0.710166
0.01852	0.029968	0.03260137	0.073354	0.498995	0.212131	9.600555	19.10012	2.674971	12.38707	0.315684	10.24085	0.559951
0	0	0	0	0.000714	0.000938	0.000034	0.0023	0.00002	0	0	0.000491	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
0.000843	0.001049	0.00099993	0.001095	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
0.001389	0.001669	0.00158849	0.0017	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
0	0	0	0	0.000684	0.000897	0.000033	0.0022	0.000019	0	0	0.00047	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
0.000776	0.000964	0.00092015	0.001008	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
0.001277	0.001535	0.00146001	0.001563	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
0.012629	0.025463	0.022204	0.046441	0.00132	0.000456	0.000618	0.000112	0.001186	0.003062	0.87381	0.004109	0.320359
0.042473	0.069076	0.051095	0.105109	0.053937	0.014282	0.028542	0.004928	0.014861	0.044584	0.596966	0.035854	0.022862
0	0	0	0	0.012688	0.010875	0.025267	0.363481	0.032228	0	0	1.108833	0
0.011495	0.023	0.021391	0.045923	0.000775	0.000284	0.000387	0.000071	0.00055	0.001836	0.457896	0.001955	0.14036
0.003551	0.005532	0.00564524	0.009324	0.089401	0.090021	0.039265	0.081602	0.036454	0.130408	2.10552	0.044925	0.029166
0.029338	0.058891	0.04580957	0.074429	0.128033	0.029131	0.015048	0.000458	0.036407	0.01196	0.417549	0.0198	0.003797
0.016134	0.029203	0.0273622	0.063645	0.098303	0.032001	0.214445	0.073751	0.250564	0.703063	2.086788	0.373807	0.197056
0	0	0	0	0.000088	0.000131	0.001225	0.037288	0.000971	0	0	0.009676	0
0.001653	0.002121	0.002425	0.003275	0.00607	0.006477	0.011133	0.013756	0.012273	0.015978	0.002063	0.00952	0.011619
0.000385	0.000499	0.000564	0.000758	0.000265	0.000226	0.000664	0.000199	0.000714	0.001504	0.000651	0.000757	0.000618
0.012629	0.025463	0.022204	0.046441	0.00132	0.000456	0.000618	0.000112	0.001186	0.003062	0.87381	0.004109	0.320359
0.042473	0.069076	0.051095	0.105109	0.053937	0.014282	0.028542	0.004928	0.014861	0.044584	0.596966	0.035854	0.022862
0	0	0	0	0.016926	0.013985	0.035949	0.422036	0.045155	0	0	1.611503	0
0.011495	0.023	0.021391	0.045923	0.000775	0.000284	0.000387	0.000071	0.00055	0.001836	0.457896	0.001955	0.14036
0.005164	0.008071	0.0082282	0.01356	0.103485	0.10313	0.045259	0.146744	0.04322	0.37632	2.643212	0.052867	0.037017
0.029338	0.058891	0.04580957	0.074429	0.128033	0.029131	0.015048	0.000458	0.036407	0.01196	0.417549	0.0198	0.003797
0.017665	0.031974	0.02995825	0.069684	0.107629	0.035037	0.23479	0.080748	0.274336	0.769766	2.273195	0.409272	0.215752
0	0	0	0	0.003356	0.002294	0.015166	0.23375	0.01211	0	0	0.828118	0
0.00157	0.002468	0.002512	0.004106	0.006124	0.004928	0.002471	0.057519	0.003684	0.233566	0.445091	0.004082	0.005768
0.000988	0.001786	0.001717	0.003929	0.006867	0.002325	0.026509	0.050734	0.019275	0.046129	0.13036	0.04374	0.01367
0	0	0	0	0.131443	0.11801	0.26317	1.013339	0.236395	0	0	9.2002	0
0.330764	0.456214	0.50585333	0.662705	0.499389	0.440155	0.231033	0.955457	0.271926	2.427484	16.67898	0.280783	0.281981
0.372238	0.547148	0.57908253	0.920626	1.200772	0.783073	3.039744	3.975923	3.529098	6.389908	9.013808	5.069494	3.025952

0	0	0	0	8.872501	13.42934	134.732	4248.15	105.6175	0	0	1019.388	0
178.1502	227.9995	260.7342	351.777	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
0	0	0	0	0.056541	0.056035	0.32926	12.09577	0.229664	0	0	2.627019	0
0.018329	0.027034	0.02838135	0.046683	0.291594	0.110505	0.946141	1.408448	0.741574	2.586614	0.99987	0.972862	0.674989
0.016485	0.026675	0.02963614	0.065844	0.466387	0.207738	9.569204	19.07792	2.632958	12.30513	0.290822	10.20519	0.522258
0	0	0	0	0.000714	0.000938	0.000029	0.001939	0.000017	0	0	0.000414	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
0.000843	0.001049	0.00099993	0.001095	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
0.001389	0.001669	0.00158849	0.0017	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
0	0	0	0	0.000684	0.000897	0.000028	0.001855	0.000016	0	0	0.000396	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
0.000776	0.000964	0.00092015	0.001008	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
0.001277	0.001535	0.00146001	0.001563	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
0.028912	0.05773	0.050218	0.103368	0.002881	0.000997	0.001347	0.000241	0.002583	0.006729	2.246632	0.00884	0.699574
0.045981	0.076383	0.057069	0.115725	0.059158	0.015552	0.030767	0.005272	0.015751	0.050005	0.824552	0.036639	0.024772
0	0	0	0	0.012688	0.010875	0.023508	0.342547	0.031892	0	0	1.107666	0
0.023429	0.045965	0.043149	0.090457	0.001518	0.000562	0.000764	0.00014	0.001106	0.003704	1.235897	0.003844	0.280486
0.003958	0.006157	0.00628569	0.010358	0.089565	0.090084	0.039323	0.081713	0.036634	0.130945	2.051603	0.045105	0.029566
0.027141	0.054283	0.04220112	0.068959	0.123972	0.028082	0.014434	0.000438	0.035194	0.0107	0.384874	0.017013	0.003681
0.013414	0.024255	0.0233191	0.053361	0.092606	0.031354	0.201125	0.06917	0.234414	0.622102	1.774815	0.31396	0.184356
0	0	0	0	0.000088	0.000131	0.001297	0.039504	0.001019	0	0	0.010053	0
0.001782	0.002283	0.00261	0.003518	0.00607	0.006477	0.011133	0.013757	0.012273	0.015979	0.002052	0.00952	0.011619
0.000383	0.000496	0.000562	0.000754	0.000264	0.000225	0.00066	0.000193	0.000708	0.001478	0.000619	0.000727	0.000613
0.028912	0.05773	0.050218	0.103368	0.002881	0.000997	0.001347	0.000241	0.002583	0.006729	2.246632	0.00884	0.699574
0.045981	0.076383	0.057069	0.115725	0.059158	0.015552	0.030767	0.005272	0.015751	0.050005	0.824552	0.036639	0.024772
0	0	0	0	0.016926	0.013985	0.033436	0.39773	0.044773	0	0	1.610173	0
0.023429	0.045965	0.043149	0.090457	0.001518	0.000562	0.000764	0.00014	0.001106	0.003704	1.235897	0.003844	0.280486
0.005759	0.008981	0.00916269	0.01507	0.103725	0.103221	0.045345	0.146906	0.043483	0.377104	2.575999	0.053131	0.037601
0.027141	0.054283	0.04220112	0.068959	0.123972	0.028082	0.014434	0.000438	0.035194	0.0107	0.384874	0.017013	0.003681
0.014687	0.026556	0.02553148	0.058423	0.101392	0.034329	0.220207	0.075732	0.256654	0.681123	1.933399	0.343747	0.201846
0	0	0	0	0.003356	0.002294	0.017487	0.267763	0.012151	0	0	0.82836	0
0.001366	0.002154	0.00219	0.003586	0.006003	0.004883	0.002429	0.05744	0.003554	0.233185	0.470649	0.003951	0.005481
0.001343	0.002431	0.002245	0.00527	0.007653	0.002414	0.029714	0.056869	0.021674	0.057198	0.175392	0.059588	0.015371
0	0	0	0	0.131443	0.11801	0.500078	1.920986	0.251759	0	0	9.302812	0
0.27397	0.380018	0.42067501	0.552825	0.493462	0.437607	0.229123	0.937539	0.266308	2.410968	18.39411	0.275131	0.269037
0.547027	0.80532	0.78746794	1.298323	1.378134	0.894078	3.548392	4.641225	4.177025	9.198466	11.9251	8.745974	3.581502
0	0	0	0	8.872501	13.42934	116.8035	3680.924	93.62911	0	0	925.2816	0
163.1281	209.1831	239.1904	323.556	622.3267	666.8051	1159.341	1480.238	1261.599	1875.793	171.8251	984.9589	1173.298
37.75915	48.79895	55.34654	73.95533	24.22467	21.23495	60.62838	12.84723	64.56366	136.0061	41.94992	63.78272	56.01982
0	0	0	0	0.056541	0.056035	0.304812	11.19823	0.212798	0	0	2.439348	0
0.02221	0.032876	0.03449568	0.056778	0.312404	0.118181	1.001639	1.490612	0.789288	2.753543	1.213265	1.033676	0.727012
0.020093	0.03251	0.03489172	0.079148	0.528072	0.216064	9.62756	19.11924	2.711695	12.45376	0.335658	10.27105	0.592899
0	0	0	0	0.000714	0.000938	0.000042	0.002798	0.000024	0	0	0.000598	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061089	0.13034	0.511061	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010536	0.010842	0.012	0.035457	0.012	0.012	0.004	0.010274	0.012883
0.000843	0.001049	0.00099993	0.001095	0.00798	0.007961	0.002905	0.005441	0.002704	0.053951	0.002212	0.003988	0.007844
0.001389	0.001669	0.00158849	0.0017	0.000518	0.000375	0.000853	0.000153	0.000989	0.001562	0.003318	0.001261	0.000869
0	0	0	0	0.000684	0.000897	0.00004	0.002677	0.000023	0	0	0.000572	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026181	0.05586	0.219026	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002634	0.002711	0.003	0.008864	0.003	0.003	0.001	0.002569	0.003221
0.000776	0.000964	0.00092015	0.001008	0.007605	0.007593	0.002773	0.005205	0.002564	0.051576	0.002062	0.003792	0.007464
0.001277	0.001535	0.00146001	0.001563	0.000476	0.000345	0.000784	0.000141	0.000909	0.001436	0.003098	0.00116	0.000799
0.006213	0.012806	0.011125	0.023655	0.000708	0.000243	0.000331	0.00006	0.000659	0.001776	0.3849	0.00232	0.177893
0.043685	0.071651	0.053132	0.108763	0.055754	0.014699	0.029263	0.005038	0.015169	0.046535	0.686548	0.036182	0.023559
0	0	0	0	0.012688	0.010875	0.027089	0.39239	0.032692	0	0	1.110446	0
0.005755	0.011708	0.010754	0.023487	0.000429	0.000155	0.000212	0.000039	0.00032	0.001096	0.180995	0.00115	0.082187
0.003448	0.005374	0.00548312	0.009061	0.089267	0.089971	0.039219	0.081518	0.036314	0.130003	2.173486	0.04478	0.028857
0.035574	0.072453	0.05627867	0.090563	0.143983	0.032733	0.016997	0.000517	0.039952	0.01539	0.515509	0.025207	0.004168
0.018235	0.033018	0.03048491	0.071576	0.103212	0.032561	0.225444	0.077534	0.263588	0.77138	2.388125	0.427708	0.2073
0	0	0	0	0.000088	0.000131	0.001128	0.034229	0.000905	0	0	0.009155	0
0.001632	0.002094	0.002394	0.003235	0.00607	0.006477	0.011133	0.013756	0.012273	0.015978	0.002084	0.00952	0.011619
0.000386	0.0005	0.000565	0.00076	0.000267	0.000227	0.000668	0.000204	0.000719	0.001527	0.000684	0.000788	0.000622
0.006213	0.012806	0.011125	0.023655	0.000708	0.000243	0.000331	0.00006	0.000659	0.001776	0.3849	0.00232	0.177893
0.043685	0.071651	0.053132	0.108763	0.055754	0.014699	0.029263	0.005038	0.015169	0.046535	0.686548	0.036182	0.023559
0	0	0	0	0.016926	0.013985	0.038534	0.455603	0.045684	0	0	1.613339	0
0.005755	0.011708	0.010754	0.023487	0.000429	0.000155	0.000212	0.000039	0.00032	0.001096	0.180995	0.00115	0.082187
0.005015	0.007839	0.00799155	0.013176	0.103291	0.103057	0.045193	0.146621	0.043016	0.375728	2.728073	0.052657	0.036565
0.035574	0.072453	0.05627867	0.090563	0.143983	0.032733	0.016997	0.000517	0.039952	0.01539	0.515509	0.025207	0.004168
0.019965	0.03615	0.03337702	0.078366	0.113004	0.03565	0.246833	0.08489	0.288596	0.844564	2.601394	0.468286	0.226967

ISI Project SAFE Rule Adjustement Factors

EMFAC2014 Adjustment Factors for Gasoline LD/MD Vehicles					
Calendar Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust
enter year --> 2024	1.001	1.0014	1.0005	1.0105	1.0041

(*Includes LDA, LDT1, LDT2 and MDV vehicle categories)

Original CalEEMod Emission Factors from 'tblVehicleEF' Tab (paste values below)

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005113	0.003197	0.016075	0.332169	0.011983	0	0	0.824001	0
A	CH4_RUNEX	0.003046	0.006985	0.004589	0.008459	0.015781	0.00702	0.004066	0.054356	0.005841	0.232325	0.449433	0.015725	0.023341
A	CH4_STREX	0.004144	0.009716	0.005782	0.01338	0.017931	0.005937	0.043511	0.074824	0.024581	0.041144	0.160097	0.074341	0.022182
A	CO_IDLEX	0	0	0	0	0.145436	0.121123	0.371012	1.573762	0.242968	0	0	8.25057	0
A	CO_RUNEX	0.467068	0.913232	0.648619	0.974237	0.942622	0.527591	0.330968	0.919429	0.41273	4.19219	18.47266	0.949108	1.610586
A	CO_STREX	0.984505	2.054707	1.315859	2.429656	2.416308	1.094639	5.400481	3.67154	4.814858	7.2449	10.20524	9.298157	5.159004
A	CO2_NBIO_IDLEX	0	0	0	0	8.981251	13.92959	133.3651	4319.245	100.2088	0	0	1096.829	0
A	CO2_NBIO_RUNEX	224.3132	281.9703	319.721989	429.37784	679.87715	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
A	CO2_NBIO_STREX	52.961268	66.02559	74.635941	98.570305	31.446055	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
A	NOx_IDLEX	0	0	0	0	0.072237	0.094831	0.359649	13.62512	0.214428	0	0	7.836265	0
A	NOx_RUNEX	0.038903	0.088734	0.063226	0.117173	1.003237	0.589361	1.101028	1.926563	0.905934	8.635792	1.144796	3.377224	1.201255
A	NOx_STREX	0.055354	0.112615	0.094625	0.209072	0.944255	0.408237	10.18285	19.36911	2.682598	14.3148	0.318596	11.88074	0.771978
A	PM10_IDLEX	0	0	0	0	0.000857	0.001212	0.000108	0.007279	0.000019	0	0	0.00699	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
A	PM10_RUNEX	0.001595	0.002103	0.001651	0.001768	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
A	PM10_STREX	0.002218	0.002826	0.002314	0.002443	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
A	PM25_IDLEX	0	0	0	0	0.00082	0.001159	0.000103	0.006964	0.000019	0	0	0.006688	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
A	PM25_RUNEX	0.001469	0.001936	0.001519	0.001629	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
A	PM25_STREX	0.00204	0.002598	0.002127	0.002246	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982
A	ROG_DIURN	0.025802	0.07445	0.037578	0.058746	0.002537	0.000747	0.000831	0.000095	0.001172	0.001896	0.899079	0.003352	0.735322
A	ROG_HTSK	0.083318	0.189537	0.098577	0.158559	0.101316	0.028103	0.039423	0.00491	0.015269	0.029362	0.682722	0.035427	0.062668
A	ROG_IDLEX	0	0	0	0	0.016071	0.012893	0.024655	0.407027	0.031987	0	0	0.979924	0
A	ROG_RESTL	0.022522	0.05935	0.035652	0.056221	0.001308	0.000408	0.00044	0.000059	0.000518	0.000995	0.486738	0.001493	0.259274
A	ROG_RUNEX	0.007646	0.017374	0.011385	0.021151	0.11529	0.101317	0.043869	0.087498	0.043425	0.452959	2.18281	0.103292	0.07886
A	ROG_RUNLS	0.035861	0.13891	0.068118	0.103507	0.315958	0.062939	0.020463	0.000409	0.031545	0.007118	0.578099	0.016443	0.020294
A	ROG_STREX	0.05588	0.131038	0.07798	0.180446	0.241822	0.080073	0.322211	0.087524	0.301315	0.554875	2.1829	0.464131	0.299151
A	SO2_IDLEX	0	0	0	0	0.00009	0.000136	0.001285	0.040349	0.000968	0	0	0.010752	0
A	SO2_RUNEX	0.002246	0.00283	0.003202	0.004298	0.006668	0.006803	0.011391	0.014451	0.012562	0.018053	0.002067	0.010093	0.011976
A	SO2_STREX	0.000546	0.000696	0.000768	0.001028	0.00036	0.000255	0.000702	0.000177	0.000751	0.001202	0.000679	0.00073	0.000674
A	TOG_DIURN	0.025802	0.07445	0.037578	0.058746	0.002537	0.000747	0.000831	0.000095	0.001172	0.001896	0.899079	0.003352	0.735322
A	TOG_HTSK	0.083318	0.189537	0.098577	0.158559	0.101316	0.028103	0.039423	0.00491	0.015269	0.029362	0.682722	0.035427	0.062668
A	TOG_IDLEX	0	0	0	0	0.022212	0.017009	0.034957	0.473351	0.044851	0	0	1.416893	0
A	TOG_RESTL	0.022522	0.05935	0.035652	0.056221	0.001308	0.000408	0.00044	0.000059	0.000518	0.000995	0.486738	0.001493	0.259274
A	TOG_RUNEX	0.011118	0.025319	0.016603	0.030782	0.140601	0.117418	0.05176	0.150083	0.052866	0.726221	2.714498	0.127391	0.107427
A	TOG_RUNLS	0.035861	0.13891	0.068118	0.103507	0.315958	0.062939	0.020463	0.000409	0.031545	0.007118	0.578099	0.016443	0.020294
A	TOG_STREX	0.061181	0.143469	0.085378	0.197564	0.264765	0.08767	0.35278	0.095827	0.329902	0.607518	2.376088	0.508165	0.327532
S	CH4_IDLEX	0	0	0	0	0.005113	0.003197	0.014935	0.313039	0.011966	0	0	0.823766	0
S	CH4_RUNEX	0.003394	0.007706	0.005104	0.009389	0.016225	0.007109	0.004145	0.054405	0.005989	0.23348	0.43693	0.01614	0.02447
S	CH4_STREX	0.003439	0.008003	0.0048	0.011085	0.016875	0.005637	0.040805	0.070169	0.022995	0.036262	0.134855	0.062439	0.020698
S	CO_IDLEX	0	0	0	0	0.145436	0.121123	0.25671	1.143567	0.236712	0	0	8.152064	0
S	CO_RUNEX	0.55161	1.058853	0.762949	1.141861	0.961542	0.531471	0.335387	0.929034	0.420458	4.215073	17.83915	0.972854	1.677423
S	CO_STREX	0.781105	1.615409	1.045102	1.92542	2.237486	1.018493	4.963843	3.3748	4.388456	5.86248	8.949976	6.83011	4.685913
S	CO2_NBIO_IDLEX	0	0	0	0	8.981251	13.92959	141.4246	4575.855	105.1915	0	0	1145.295	0
S	CO2_NBIO_RUNEX	241.77149	303.1115	344.023226	461.13253	679.87715	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
S	CO2_NBIO_STREX	52.961268	66.02559	74.635941	98.570305	31.446055	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
S	NOx_IDLEX	0	0	0	0	0.072237	0.094831	0.371238	14.06341	0.221253	0	0	8.085734	0
S	NOx_RUNEX	0.035027	0.079086	0.056749	0.105043	0.956447	0.564938	1.055885	1.853419	0.865516	8.287769	1.009147	3.233742	1.131352
S	NOx_STREX	0.049272	0.100243	0.084252	0.186121	0.88251	0.386405	10.13131	19.34898	2.629995	14.2499	0.292806	11.83055	0.719791
S	PM10_IDLEX	0	0	0	0	0.000857	0.001212	0.000091	0.006137	0.000016	0	0	0.005893	0
S	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
S	PM10_PMTW	0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
S	PM10_RUNEX	0.001595	0.002103	0.001651	0.001768	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
S	PM10_STREX	0.002218	0.002826	0.002314	0.002443	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
S	PM25_IDLEX	0	0	0	0	0.00082	0.001159	0.000087	0.005872	0.000016	0	0	0.005638	0
S	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
S	PM25_PMTW	0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
S	PM25_RUNEX	0.001469	0.001936	0.001519	0.001629	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
S	PM25_STREX	0.00204	0.002598	0.002127	0.002246	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982

S	ROG_DIURN	0.058949	0.171327	0.084512	0.131193	0.005672	0.00167	0.001902	0.000213	0.002599	0.004306	2.316631	0.007372	1.646056
S	ROG_HTSK	0.09142	0.213955	0.108614	0.173121	0.11193	0.031212	0.044021	0.005276	0.016343	0.033406	0.903951	0.036595	0.067577
S	ROG_IDLEX	0	0	0	0	0.016071	0.012893	0.022944	0.383586	0.031659	0	0	0.977588	0
S	ROG_RESTL	0.045792	0.120891	0.071297	0.111623	0.002662	0.000835	0.000938	0.000123	0.001076	0.002142	1.321188	0.003066	0.534774
S	ROG_RUNEX	0.008508	0.019159	0.012659	0.023454	0.11639	0.101538	0.044064	0.087619	0.04379	0.455816	2.112368	0.104318	0.081653
S	ROG_RUNLS	0.033574	0.12851	0.063051	0.09625	0.30639	0.060933	0.019728	0.000396	0.030557	0.006465	0.540304	0.014122	0.019792
S	ROG_STREX	0.046382	0.107936	0.064732	0.149501	0.227581	0.076026	0.302175	0.082079	0.281874	0.489032	1.83857	0.389822	0.27913
S	SO2_IDLEX	0	0	0	0	0.00009	0.000136	0.00136	0.042746	0.001015	0	0	0.011215	0
S	SO2_RUNEX	0.002421	0.003043	0.003446	0.004618	0.006668	0.006803	0.011391	0.014451	0.012562	0.018054	0.002054	0.010093	0.011977
S	SO2_STREX	0.000542	0.000688	0.000764	0.001019	0.000357	0.000254	0.000694	0.000172	0.000743	0.001178	0.000648	0.000689	0.000666
S	TOG_DIURN	0.058949	0.171327	0.084512	0.131193	0.005672	0.00167	0.001902	0.000213	0.002599	0.004306	2.316631	0.007372	1.646056
S	TOG_HTSK	0.09142	0.213955	0.108614	0.173121	0.11193	0.031212	0.044021	0.005276	0.016343	0.033406	0.903951	0.036595	0.067577
S	TOG_IDLEX	0	0	0	0	0.022212	0.017009	0.032519	0.44609	0.044479	0	0	1.414234	0
S	TOG_RESTL	0.045792	0.120891	0.071297	0.111623	0.002662	0.000835	0.000938	0.000123	0.001076	0.002142	1.321188	0.003066	0.534774
S	TOG_RUNEX	0.012376	0.027922	0.018462	0.034142	0.142206	0.11774	0.052045	0.150259	0.053399	0.73039	2.629074	0.128888	0.111503
S	TOG_RUNLS	0.033574	0.12851	0.063051	0.09625	0.30639	0.060933	0.019728	0.000396	0.030557	0.006465	0.540304	0.014122	0.019792
S	TOG_STREX	0.050782	0.118176	0.070874	0.163684	0.249173	0.083239	0.330843	0.089866	0.308616	0.535429	2.001378	0.426807	0.305612
W	CH4_IDLEX	0	0	0	0	0.005113	0.003197	0.017221	0.358587	0.012006	0	0	0.824324	0
W	CH4_RUNEX	0.00296	0.006836	0.004462	0.008245	0.015432	0.006949	0.004005	0.054319	0.005727	0.231504	0.464909	0.015394	0.022513
W	CH4_STREX	0.004688	0.011053	0.006542	0.01516	0.01885	0.006197	0.045751	0.078682	0.025862	0.045309	0.18489	0.08506	0.023443
W	CO_IDLEX	0	0	0	0	0.145436	0.121123	0.487793	2.167842	0.251607	0	0	8.386601	0
W	CO_RUNEX	0.457562	0.899358	0.635948	0.956757	0.9279	0.524563	0.327629	0.912224	0.406888	4.175444	19.86559	0.930468	1.561402
W	CO_STREX	1.150965	2.412449	1.53741	2.842283	2.591734	1.16959	5.796359	3.940334	5.1957	8.51975	11.64411	11.78342	5.601378
W	CO2_NBIO_IDLEX	0	0	0	0	8.981251	13.92959	122.6026	3964.879	93.32787	0	0	1029.9	0
W	CO2_NBIO_RUNEX	221.437	278.4874	315.718428	424.14634	679.87715	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
W	CO2_NBIO_STREX	52.961268	66.02559	74.635941	98.570305	31.446055	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
W	NOx_IDLEX	0	0	0	0	0.072237	0.094831	0.343676	13.01988	0.205004	0	0	7.491761	0
W	NOx_RUNEX	0.042468	0.097103	0.069108	0.128078	1.025458	0.600166	1.120535	1.959443	0.92454	8.774729	1.22679	3.443062	1.237323
W	NOx_STREX	0.060052	0.122135	0.102635	0.226779	0.999113	0.427709	10.22724	19.38646	2.728577	14.36762	0.33928	11.92324	0.817568
W	PM10_IDLEX	0	0	0	0	0.000857	0.001212	0.000132	0.008857	0.000024	0	0	0.008505	0
W	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
W	PM10_PMTW	0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
W	PM10_RUNEX	0.001595	0.002103	0.001651	0.001768	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
W	PM10_STREX	0.002218	0.002826	0.002314	0.002443	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
W	PM25_IDLEX	0	0	0	0	0.00082	0.001159	0.000126	0.008474	0.000023	0	0	0.008137	0
W	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
W	PM25_PMTW	0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
W	PM25_RUNEX	0.001469	0.001936	0.001519	0.001629	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
W	PM25_STREX	0.00204	0.002598	0.002127	0.002246	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982
W	ROG_DIURN	0.012838	0.03675	0.01896	0.02988	0.001292	0.000385	0.000418	0.00005	0.000635	0.001055	0.391506	0.001848	0.371786
W	ROG_HTSK	0.087026	0.204598	0.102745	0.164803	0.111895	0.030351	0.041505	0.005087	0.015725	0.032688	0.817916	0.035924	0.074531
W	ROG_IDLEX	0	0	0	0	0.016071	0.012893	0.026435	0.439398	0.032439	0	0	0.98315	0
W	ROG_RESTL	0.011288	0.029626	0.018033	0.028554	0.000695	0.000218	0.000229	0.000032	0.000296	0.000564	0.18606	0.000862	0.144978
W	ROG_RUNEX	0.007433	0.017008	0.011069	0.020626	0.114428	0.101141	0.043718	0.087407	0.043143	0.450926	2.26742	0.102473	0.076811
W	ROG_RUNLS	0.042441	0.169999	0.082975	0.125128	0.350936	0.070215	0.023139	0.000458	0.03459	0.008897	0.688425	0.020983	0.021751
W	ROG_STREX	0.063221	0.149068	0.088225	0.204449	0.254213	0.08358	0.338801	0.092037	0.317019	0.611038	2.521154	0.531056	0.316151
W	SO2_IDLEX	0	0	0	0	0.00009	0.000136	0.001184	0.037039	0.000902	0	0	0.010114	0
W	SO2_RUNEX	0.002217	0.002795	0.003162	0.004246	0.006668	0.006802	0.011391	0.014451	0.012562	0.018053	0.002092	0.010093	0.011975
W	SO2_STREX	0.000549	0.000702	0.000772	0.001035	0.000363	0.000257	0.000709	0.000181	0.000757	0.001224	0.000712	0.000771	0.000682
W	TOG_DIURN	0.012838	0.03675	0.01896	0.02988	0.001292	0.000385	0.000418	0.00005	0.000635	0.001055	0.391506	0.001848	0.371786
W	TOG_HTSK	0.087026	0.204598	0.102745	0.164803	0.111895	0.030351	0.041505	0.005087	0.015725	0.032688	0.817916	0.035924	0.074531
W	TOG_IDLEX	0	0	0	0	0.022212	0.017009	0.037474	0.510997	0.045366	0	0	1.420565	0
W	TOG_RESTL	0.011288	0.029626	0.018033	0.028554	0.000695	0.000218	0.000229	0.000032	0.000296	0.000564	0.18606	0.000862	0.144978
W	TOG_RUNEX	0.010806	0.024784	0.016142	0.030015	0.139344	0.117161	0.05154	0.149949	0.052455	0.723255	2.817602	0.126196	0.104437
W	TOG_RUNLS	0.042441	0.169999	0.082975	0.125128	0.350936	0.070215	0.023139	0.000458	0.03459	0.008897	0.688425	0.020983	0.021751
W	TOG_STREX	0.069219	0.163209	0.096595	0.223844	0.278332	0.091509	0.370944	0.100769	0.347096	0.66901	2.744158	0.581439	0.346146

Adjusted CalEEMod Emission Factors (copy into CalEEMod 'tblVehicleEF', paste as values)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0	0	0	0	0.005113	0.003197	0.016075	0.332169	0.011983	0	0	0.824001	0
0.003046	0.006985	0.004589	0.008459	0.015781	0.00702	0.004066	0.054356	0.005841	0.232325	0.449433	0.015725	0.023341
0.004144	0.009716	0.005782	0.01338	0.017931	0.005937	0.043511	0.074824	0.024581	0.041144	0.160097	0.074341	0.022182
0	0	0	0	0.145436	0.121123	0.371012	1.573762	0.242968	0	0	8.25057	0
0.468983	0.916976	0.65127834	0.978231	0.942622	0.527591	0.330968	0.919429	0.41273	4.19219	18.47266	0.949108	1.610586
0.988541	2.063131	1.32125402	2.439618	2.416308	1.094639	5.400481	3.67154	4.814858	7.2449	10.20524	9.298157	5.159004
0	0	0	0	8.981251	13.92959	133.3651	4319.245	100.2088	0	0	1096.829	0
224.3132	281.9703	319.721989	429.3778	679.8771	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
52.96127	66.02559	74.635941	98.57031	31.44606	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
0	0	0	0	0.072237	0.094831	0.359649	13.62512	0.214428	0	0	7.836265	0
0.038942	0.088823	0.06328923	0.11729	1.003237	0.589361	1.101028	1.926563	0.905934	8.635792	1.144796	3.377224	1.201255
0.055409	0.112728	0.09471963	0.209281	0.944255	0.408237	10.18285	19.36911	2.682598	14.3148	0.318596	11.88074	0.771978
0	0	0	0	0.000857	0.001212	0.000108	0.007279	0.000019	0	0	0.00699	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
0.001612	0.002125	0.00166834	0.001787	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
0.002241	0.002856	0.0023383	0.002469	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
0	0	0	0	0.00082	0.001159	0.000103	0.006964	0.000019	0	0	0.006688	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
0.001484	0.001956	0.00153495	0.001646	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
0.002061	0.002625	0.00214933	0.00227	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982
0.025802	0.07445	0.037578	0.058746	0.002537	0.000747	0.000831	0.000095	0.001172	0.001896	0.899079	0.003352	0.735322
0.083318	0.189537	0.098577	0.158559	0.101316	0.028103	0.039423	0.00491	0.015269	0.029362	0.682722	0.035427	0.062668
0	0	0	0	0.016071	0.012893	0.024655	0.407027	0.031987	0	0	0.979924	0
0.022522	0.05935	0.035652	0.056221	0.001308	0.000408	0.00044	0.000059	0.000518	0.000995	0.486738	0.001493	0.259274
0.00765	0.017383	0.01139069	0.021162	0.11529	0.101317	0.043869	0.087498	0.043425	0.452959	2.18281	0.103292	0.07886
0.035911	0.139104	0.06821337	0.103652	0.315958	0.062939	0.020463	0.000409	0.031545	0.007118	0.578099	0.016443	0.020294
0.055908	0.131104	0.07801899	0.180536	0.241822	0.080073	0.322211	0.087524	0.301315	0.554875	2.1829	0.464131	0.299151
0	0	0	0	0.00009	0.000136	0.001285	0.040349	0.000968	0	0	0.010752	0
0.002246	0.00283	0.003202	0.004298	0.006668	0.006803	0.011391	0.014451	0.012562	0.018053	0.002067	0.010093	0.011976
0.000546	0.000696	0.000768	0.001028	0.00036	0.000255	0.000702	0.000177	0.000751	0.001202	0.000679	0.00073	0.000674
0.025802	0.07445	0.037578	0.058746	0.002537	0.000747	0.000831	0.000095	0.001172	0.001896	0.899079	0.003352	0.735322
0.083318	0.189537	0.098577	0.158559	0.101316	0.028103	0.039423	0.00491	0.015269	0.029362	0.682722	0.035427	0.062668
0	0	0	0	0.022212	0.017009	0.034957	0.473351	0.044851	0	0	1.416893	0
0.022522	0.05935	0.035652	0.056221	0.001308	0.000408	0.00044	0.000059	0.000518	0.000995	0.486738	0.001493	0.259274
0.011124	0.025332	0.0166113	0.030797	0.140601	0.117418	0.05176	0.150083	0.052866	0.726221	2.714498	0.127391	0.107427
0.035911	0.139104	0.06821337	0.103652	0.315958	0.062939	0.020463	0.000409	0.031545	0.007118	0.578099	0.016443	0.020294
0.061212	0.143541	0.08542069	0.197663	0.264765	0.08767	0.35278	0.095827	0.329902	0.607518	2.376088	0.508165	0.327532
0	0	0	0	0.005113	0.003197	0.014935	0.313039	0.011966	0	0	0.823766	0
0.003394	0.007706	0.005104	0.009389	0.016225	0.007109	0.004145	0.054405	0.005989	0.23348	0.43693	0.01614	0.02447
0.003439	0.008003	0.0048	0.011085	0.016875	0.005637	0.040805	0.070169	0.022995	0.036262	0.134855	0.062439	0.020698
0	0	0	0	0.145436	0.121123	0.25671	1.143567	0.236712	0	0	8.152064	0
0.553872	1.063194	0.76607709	1.146543	0.961542	0.531471	0.335387	0.929034	0.420458	4.215073	17.83915	0.972854	1.677423
0.784308	1.622032	1.04938692	1.933314	2.237486	1.018493	4.963843	3.3748	4.388456	5.86248	8.949976	6.83011	4.685913
0	0	0	0	8.981251	13.92959	141.4246	4575.855	105.1915	0	0	1145.295	0
241.7715	303.1115	344.023226	461.1325	679.8771	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
52.96127	66.02559	74.635941	98.57031	31.44606	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
0	0	0	0	0.072237	0.094831	0.371238	14.06341	0.221253	0	0	8.085734	0
0.035062	0.079165	0.05680575	0.105148	0.956447	0.564938	1.055885	1.853419	0.865516	8.287769	1.009147	3.233742	1.131352
0.049321	0.100343	0.08433625	0.186307	0.88251	0.386405	10.13131	19.34898	2.629995	14.2499	0.292806	11.83055	0.719791
0	0	0	0	0.000857	0.001212	0.000091	0.006137	0.000016	0	0	0.005893	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
0.001612	0.002125	0.00166834	0.001787	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
0.002241	0.002856	0.0023383	0.002469	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
0	0	0	0	0.00082	0.001159	0.000087	0.005872	0.000016	0	0	0.005638	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
0.001484	0.001956	0.00153495	0.001646	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
0.002061	0.002625	0.00214933	0.00227	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982

0.058949	0.171327	0.084512	0.131193	0.005672	0.00167	0.001902	0.000213	0.002599	0.004306	2.316631	0.007372	1.646056
0.09142	0.213955	0.108614	0.173121	0.11193	0.031212	0.044021	0.005276	0.016343	0.033406	0.903951	0.036595	0.067577
0	0	0	0	0.016071	0.012893	0.022944	0.383586	0.031659	0	0	0.977588	0
0.045792	0.120891	0.071297	0.111623	0.002662	0.000835	0.000938	0.000123	0.001076	0.002142	1.321188	0.003066	0.534774
0.008512	0.019169	0.01266533	0.023466	0.11639	0.101538	0.044064	0.087619	0.04379	0.455816	2.112368	0.104318	0.081653
0.033621	0.12869	0.06313927	0.096385	0.30639	0.060933	0.019728	0.000396	0.030557	0.006465	0.540304	0.014122	0.019792
0.046405	0.10799	0.06476437	0.149576	0.227581	0.076026	0.302175	0.082079	0.281874	0.489032	1.83857	0.389822	0.27913
0	0	0	0	0.00009	0.000136	0.00136	0.042746	0.001015	0	0	0.011215	0
0.002421	0.003043	0.003446	0.004618	0.006668	0.006803	0.011391	0.014451	0.012562	0.018054	0.002054	0.010093	0.011977
0.000542	0.000688	0.000764	0.001019	0.000357	0.000254	0.000694	0.000172	0.000743	0.001178	0.000648	0.000689	0.000666
0.058949	0.171327	0.084512	0.131193	0.005672	0.00167	0.001902	0.000213	0.002599	0.004306	2.316631	0.007372	1.646056
0.09142	0.213955	0.108614	0.173121	0.11193	0.031212	0.044021	0.005276	0.016343	0.033406	0.903951	0.036595	0.067577
0	0	0	0	0.022212	0.017009	0.032519	0.44609	0.044479	0	0	1.414234	0
0.045792	0.120891	0.071297	0.111623	0.002662	0.000835	0.000938	0.000123	0.001076	0.002142	1.321188	0.003066	0.534774
0.012382	0.027936	0.01847123	0.034159	0.142206	0.11774	0.052045	0.150259	0.053399	0.73039	2.629074	0.128888	0.111503
0.033621	0.12869	0.06313927	0.096385	0.30639	0.060933	0.019728	0.000396	0.030557	0.006465	0.540304	0.014122	0.019792
0.050807	0.118235	0.07090944	0.163766	0.249173	0.083239	0.330843	0.089866	0.308616	0.535429	2.001378	0.426807	0.305612
0	0	0	0	0.005113	0.003197	0.017221	0.358587	0.012006	0	0	0.824324	0
0.00296	0.006836	0.004462	0.008245	0.015432	0.006949	0.004005	0.054319	0.005727	0.231504	0.464909	0.015394	0.022513
0.004688	0.011053	0.006542	0.01516	0.01885	0.006197	0.045751	0.078682	0.025862	0.045309	0.18489	0.08506	0.023443
0	0	0	0	0.145436	0.121123	0.487793	2.167842	0.251607	0	0	8.386601	0
0.459438	0.903045	0.63855539	0.96068	0.9279	0.524563	0.327629	0.912224	0.406888	4.175444	19.86559	0.930468	1.561402
1.155684	2.42234	1.54371338	2.853936	2.591734	1.16959	5.796359	3.940334	5.1957	8.51975	11.64411	11.78342	5.601378
0	0	0	0	8.981251	13.92959	122.6026	3964.879	93.32787	0	0	1029.9	0
221.437	278.4874	315.718428	424.1463	679.8771	699.6854	1186.246	1548.076	1290.885	2047.051	170.0497	1045.139	1207.034
52.96127	66.02559	74.635941	98.57031	31.44606	23.60841	60.76969	11.68238	66.63819	107.1611	44.74474	56.98506	58.42781
0	0	0	0	0.072237	0.094831	0.343676	13.01988	0.205004	0	0	7.491761	0
0.04251	0.0972	0.06917711	0.128206	1.025458	0.600166	1.120535	1.959443	0.92454	8.774729	1.22679	3.443062	1.237323
0.060112	0.122257	0.10273764	0.227006	0.999113	0.427709	10.22724	19.38646	2.728577	14.36762	0.33928	11.92324	0.817568
0	0	0	0	0.000857	0.001212	0.000132	0.008857	0.000024	0	0	0.008505	0
0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060892	0.13034	0.58537	0.01176	0.7448	0.13034
0.008	0.008	0.008	0.008	0.010145	0.010779	0.012	0.035345	0.012	0.012	0.004	0.010485	0.012881
0.001612	0.002125	0.00166834	0.001787	0.013715	0.012454	0.00311	0.006141	0.002755	0.190317	0.002029	0.01806	0.021097
0.002241	0.002856	0.0023383	0.002469	0.000905	0.0004	0.000874	0.000108	0.000836	0.001106	0.003522	0.000922	0.001068
0	0	0	0	0.00082	0.001159	0.000126	0.008474	0.000023	0	0	0.008137	0
0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026097	0.05586	0.250873	0.00504	0.3192	0.05586
0.002	0.002	0.002	0.002	0.002536	0.002695	0.003	0.008836	0.003	0.003	0.001	0.002621	0.00322
0.001484	0.001956	0.00153495	0.001646	0.013079	0.011892	0.002969	0.005875	0.002616	0.182054	0.001896	0.017261	0.020132
0.002061	0.002625	0.00214933	0.00227	0.000832	0.000368	0.000804	0.000099	0.000769	0.001017	0.003311	0.000848	0.000982
0.012838	0.03675	0.01896	0.02988	0.001292	0.000385	0.000418	0.00005	0.000635	0.001055	0.391506	0.001848	0.371786
0.087026	0.204598	0.102745	0.164803	0.111895	0.030351	0.041505	0.005087	0.015725	0.032688	0.817916	0.035924	0.074531
0	0	0	0	0.016071	0.012893	0.026435	0.439398	0.032439	0	0	0.98315	0
0.011288	0.029626	0.018033	0.028554	0.000695	0.000218	0.000229	0.000032	0.000296	0.000564	0.18606	0.000862	0.144978
0.007437	0.017017	0.01107453	0.020636	0.114428	0.101141	0.043718	0.087407	0.043143	0.450926	2.26742	0.102473	0.076811
0.0425	0.170237	0.08309117	0.125303	0.350936	0.070215	0.023139	0.000458	0.03459	0.008897	0.688425	0.020983	0.021751
0.063253	0.149143	0.08826911	0.204551	0.254213	0.08358	0.338801	0.092037	0.317019	0.611038	2.521154	0.531056	0.316151
0	0	0	0	0.00009	0.000136	0.001184	0.037039	0.000902	0	0	0.010114	0
0.002217	0.002795	0.003162	0.004246	0.006668	0.006802	0.011391	0.014451	0.012562	0.018053	0.002092	0.010093	0.011975
0.000549	0.000702	0.000772	0.001035	0.000363	0.000257	0.000709	0.000181	0.000757	0.001224	0.000712	0.000771	0.000682
0.012838	0.03675	0.01896	0.02988	0.001292	0.000385	0.000418	0.00005	0.000635	0.001055	0.391506	0.001848	0.371786
0.087026	0.204598	0.102745	0.164803	0.111895	0.030351	0.041505	0.005087	0.015725	0.032688	0.817916	0.035924	0.074531
0	0	0	0	0.022212	0.017009	0.037474	0.510997	0.045366	0	0	1.420565	0
0.011288	0.029626	0.018033	0.028554	0.000695	0.000218	0.000229	0.000032	0.000296	0.000564	0.18606	0.000862	0.144978
0.010811	0.024796	0.01615007	0.03003	0.139344	0.117161	0.05154	0.149949	0.052455	0.723255	2.817602	0.126196	0.104437
0.0425	0.170237	0.08309117	0.125303	0.350936	0.070215	0.023139	0.000458	0.03459	0.008897	0.688425	0.020983	0.021751
0.069254	0.163291	0.0966433	0.223956	0.278332	0.091509	0.370944	0.100769	0.347096	0.66901	2.744158	0.581439	0.346146

LSAP Emissions Summary
Greenhouse Gas Emissions Summary - Operations 2035

Adopted 2016 LSAP EIR 2035 (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	**CO2e**	**Percent of Total**
Area Sources	0	1.21E+02	1.21E+02	2.87E-02	1.70E-03	122	1%
Energy Use	0	2,636.25	2,636.25	1.46E-01	4.33E-02	2,653	15%
Mobile Sources	0	11,026.44	11,026.44	3.27E-01	0	11,035	63%
Waste Generation	1,325.53	0	1,325.53	78.3366	0	3,284	19%
Water/Wastewater	93.3854	8.09E+01	174.3166	9.60E+00	2.28E-01	482	3%
Total	1,325.53	13,783.69	15,109.22	78.84	0.05	17,575.73	100%

Updated LSAP - Total Annual Emissions 2035 (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	**CO2e**	**Percent of Total**
Area Sources	0	3.09E+02	3.09E+02	7.31E-02	4.35E-03	312	1%
Energy Use	0	4,186.47	4,186.47	2.20E-01	6.94E-02	4,213	16%
Mobile Sources	0	18,885.84	18,885.84	5.37E-01	0	18,899	72%
Waste Generation	786.53	0	786.53	46.4824	0	1,949	7%
Water/Wastewater	153.1145	1.33E+02	286.1781	1.57E+01	3.73E-01	791	3%
Total	939.64	23,514.48	24,454.12	63.05	0.45	26,163.63	100%

Net Emission Rates (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	**CO2e**	**Percent of Total**
Area Sources	0	1.88E+02	1.88E+02	4.44E-02	2.65E-03	190	2%
Energy Use	0	1,550.22	1,550.22	7.37E-02	2.61E-02	1,560	18%
Mobile Sources	0	7,859.41	7,859.41	2.10E-01	0	7,865	92%
Waste Generation	-539.00	0	-539.00	-31.8542	0	-1,335	-16%
Water/Wastewater	59.7291	5.21E+01	111.8615	6.14E+00	1.46E-01	309	4%
Total	-479.27	9,649.86	9,170.58	-25.38	0.17	8,587.90	100%

Efficiency-Based Threshold

City-Based Threshold

	2030	2035	2050
City GHG Emissions Target[1] (MTCO2e/yr)	437,685	378,128	199,458
Population[2]	-	174,500	-
Jobs[2]	-	123,010	-
Service Population[3]	-	297,510	-
City Efficiency Threshold (MTCO2e/yr/SP)	-	**1.27**	-

2016 LSAP EIR - Remodel-GHG Emissions Summary[4]

	2030	2035	2050
2016 LSAP EIR - Remodel - GHG Emissions (MTCO2e/yr)	-	17,576	-
Population[5]	-	5,622	-
Jobs[5]	-	3,459	-
Service Population[3]	-	9,081	-
2016 LSAP EIR Efficiency Metric (MTCO2e/yr/SP)	-	**1.94**	-

LSAP Update-GHG Emissions Summary

	2030	2035	2050
LSAP Update - GHG Emissions (MTCO2e/yr)	-	26,164	-
Population[6]	-	14,363	-
Jobs[7]	-	6,959	-
Service Population[3]	-	21,322	-
LSAP Update Efficiency Metric (MTCO2e/yr/SP)	-	**1.23**	-
Sunnyvale CAP Target Exceeded?		**No**	

1. City of Sunnyvale 2019 CAP Playbook. 2035 Emission interpolated.
2. City of Sunnyvale General Plan Land Use and Transportation Element (April 2017).
3. Service Population = Population + Jobs
4. The 2016 LSAP EIR was remodeled using CalEEMod's most updated model and most update to date policies such as 2019 Title 24 Building Energy Efficiency Standards, the State's renewable energy standards, and the SAFE Rule.
5. Adopted 2016 LSAP EIR
6. Plan population was estimated by applying a 2.42 residents per dwelling unit factor, as applied in 2016 EIR, to the proposed increase in residential units.

7. Estimated number of jobs evaluated in the 2016 LSAP EIR plus the addition of 3,500 jobs due to the implementation of the ISI project within the LSAP boundary.

ISI Project Emissions Calculations

Total and Annual Emissions Summary - Construction - Unmitigated (for AQ and GHG Analysis)

	tons										MT			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Total	10.69	39.15	40.05	0.19	9.51	0.15	10.64	2.64	0.14	2.78	17395.91	0.99	0.00	17420.76

	tons										MT			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Total Onsite	7.07	1.26	12.00	0.02	0.46	0.03	0.49	0.18	0.03	0.20	1623.86	0.45	0.00	1635.01
Total Offsite	3.62	37.89	28.05	0.17	9.05	0.12	9.17	2.47	0.11	2.73	15772.05	0.55	0.00	15785.75

	tons/year										MT/year			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Total 2020	0.01	0.08	0.38	0.00	0.07	0.00	0.07	0.03	0.00	0.03	67.80	0.02	0.00	68.23
Total 2021	1.35	13.20	13.92	0.06	2.93	0.05	2.98	0.82	0.05	0.87	5485.37	0.32	0.00	5493.43
Total 2022	4.56	17.50	14.88	0.08	3.74	0.06	3.81	1.04	0.06	1.10	7144.60	0.38	0.00	7154.17
Total 2023	4.78	8.36	10.87	0.05	2.76	0.03	2.79	0.75	0.03	0.78	4698.14	0.27	0.00	4704.94

	tons/year										MT/year			
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
2020 Onsite	0.01	0.03	0.36	0.00	0.07	0.00	0.07	0.03	0.00	0.03	52.83	0.02	0.00	53.24
2020 Offsite	0.00	0.05	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	14.97	0.00	0.00	14.99
2021 Onsite	0.07	0.42	4.10	0.01	0.10	0.01	0.11	0.04	0.01	0.05	528.10	0.15	0.00	531.74
2021 Offsite	1.27	12.78	9.82	0.05	2.84	0.04	2.88	0.78	0.04	0.82	4957.28	0.18	0.00	4961.69
2022 Onsite	3.10	0.43	3.74	0.01	0.17	0.01	0.18	0.06	0.01	0.07	540.24	0.14	0.00	543.86
2022 Offsite	1.46	17.07	11.15	0.07	3.57	0.05	3.62	0.97	0.05	1.02	6604.36	0.24	0.00	6610.31
2023 Onsite	3.89	0.38	3.80	0.01	0.12	0.01	0.13	0.04	0.01	0.05	502.70	0.14	0.00	506.18
2023 Offsite	0.89	7.99	7.07	0.04	2.64	0.02	2.66	0.72	0.02	0.74	4195.44	0.13	0.00	4198.76

SUMMARY OF MODELING RESULTS

Demolition - 2020

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.0159	0.0000	0.0159	0.0024	0.0000	0.0024	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0030	0.0130	0.1513	0.0003		0.0004	0.0004		0.0004	0.0004	22.0991	0.0062	0.0000	22.2550
Hauling	0.0014	0.0499	0.0102	0.0001	0.0056	0.0002	0.0058	0.0015	0.0002	0.0016	13.1067	0.0006	0.0000	13.1217
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0003	0.0002	0.0024	0.0000	0.0007	0.0000	0.0007	0.0002	0.0000	0.0002	0.6632	0.0000	0.0000	0.6636
Total	0.0048	0.0631	0.1639	0.0004	0.0222	0.0006	0.0228	0.0041	0.0006	0.0046	35.8690	0.0069	0.0000	36.0405
TOTAL ONSITE	0.0030	0.0130	0.1513	0.0003	0.0159	0.0004	0.0163	0.0024	0.0004	0.0028	22.0991	0.0062	0.0000	22.2550
TOTAL OFFSITE	0.0018	0.0501	0.0126	0.0002	0.0063	0.0002	0.0065	0.0017	0.0002	0.0018	13.7699	0.0006	0.0000	13.7853

Demolition - 2021

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.0232	0.0000	0.0232	0.0035	0.0000	0.0035	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0044	0.0190	0.2212	0.0004		0.0006	0.0006		0.0006	0.0006	32.3007	0.0091	0.0000	32.5280
Hauling	0.0020	0.0672	0.0146	0.0002	0.0060	0.0002	0.0062	0.0016	0.0002	0.0018	18.9129	0.0009	0.0000	18.9344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0004	0.0003	0.0033	0.0000	0.0010	0.0000	0.0011	0.0003	0.0000	0.0003	0.9356	0.0000	0.0000	0.9361
Total	0.0068	0.0865	0.2391	0.0006	0.0302	0.0008	0.0310	0.0054	0.0008	0.0062	52.1492	0.0100	0.0000	52.3985
TOTAL ONSITE	0.0044	0.0190	0.2212	0.0004	0.0232	0.0006	0.0238	0.0035	0.0006	0.0041	32.3007	0.0091	0.0000	32.5280
TOTAL OFFSITE	0.0024	0.0675	0.0179	0.0002	0.0070	0.0002	0.0072	0.0019	0.0002	0.0021	19.8485	0.0009	0.0000	19.8705

Site Preparation - 2020

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.0502	0.0000	0.0502	0.0276	0.0000	0.0276	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0030	0.0131	0.1357	0.0003		0.0004	0.0004		0.0004	0.0004	21.7299	0.0070	0.0000	21.9056
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0004	0.0003	0.0029	0.0000	0.0009	0.0000	0.0009	0.0002	0.0000	0.0002	0.7958	0.0000	0.0000	0.7963
Total	0.0034	0.0134	0.1386	0.0003	0.0511	0.0004	0.0515	0.0278	0.0004	0.0282	22.5257	0.0071	0.0000	22.7019
TOTAL ONSITE	0.0030	0.0131	0.1357	0.0003	0.0502	0.0004	0.0506	0.0276	0.0004	0.0280	21.7299	0.0070	0.0000	21.9056
TOTAL OFFSITE	0.0004	0.0003	0.0029	0.0000	0.0009	0.0000	0.0009	0.0002	0.0000	0.0002	0.7958	0.0000	0.0000	0.7963

Site Preparation - 2021

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.0734	0.0000	0.0734	0.0403	0.0000	0.0403	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0044	0.0192	0.1983	0.0004		0.0006	0.0006		0.0006	0.0006	31.7639	0.0103	0.0000	32.0207
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0005	0.0004	0.0039	0.0000	0.0013	0.0000	0.0013	0.0003	0.0000	0.0003	1.1227	0.0000	0.0000	1.1233
Total	0.0050	0.0196	0.2022	0.0004	0.0747	0.0006	0.0753	0.0406	0.0006	0.0412	32.8866	0.0103	0.0000	33.1440

TOTAL ONSITE	0.0044	0.0192	0.1983	0.0004	0.0734	0.0006	0.0740	0.0403	0.0006	0.0409	31.7639	0.0103	0.0000	32.0207
TOTAL OFFSITE	0.0005	0.0004	0.0039	0.0000	0.0013	0.0000	0.0013	0.0003	0.0000	0.0003	1.1227	0.0000	0.0000	1.1233

Trenching - 2020

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0013	0.0055	0.0776	0.0001		0.0002	0.0002		0.0002	0.0002	9.0021	0.0029	0.0000	9.0749
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0002	0.0001	0.0015	0.0000	0.0004	0.0000	0.0004	0.0001	0.0000	0.0001	0.4081	0.0000	0.0000	0.4083
Total	0.0015	0.0056	0.0791	0.0001	0.0004	0.0002	0.0006	0.0001	0.0002	0.0003	9.4102	0.0029	0.0000	9.4832

TOTAL ONSITE	0.0013	0.0055	0.0776	0.0001	0.0000	0.0002	0.0002	0.0000	0.0002	0.0002	9.0021	0.0029	0.0000	9.0749
TOTAL OFFSITE	0.0002	0.0001	0.0015	0.0000	0.0004	0.0000	0.0004	0.0001	0.0000	0.0001	0.4081	0.0000	0.0000	0.4083

Trenching - 2021

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0242	0.1049	1.4930	0.0020		0.0032	0.0032		0.0032	0.0032	173.3296	0.0561	0.0000	174.7311
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0036	0.0025	0.0264	0.0001	0.0085	0.0001	0.0085	0.0023	0.0001	0.0023	7.5831	0.0002	0.0000	7.5874
Total	0.0278	0.1074	1.5194	0.0021	0.0085	0.0033	0.0117	0.0023	0.0033	0.0055	180.9127	0.0563	0.0000	182.3185

TOTAL ONSITE	0.0242	0.1049	1.4930	0.0020	0.0000	0.0032	0.0032	0.0000	0.0032	0.0032	173.3296	0.0561	0.0000	174.7311
TOTAL OFFSITE	0.0036	0.0025	0.0264	0.0001	0.0085	0.0001	0.0085	0.0023	0.0001	0.0023	7.5831	0.0002	0.0000	7.5874

Building Construction - 2021

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0411	0.2805	2.1913	0.0034		0.0051	0.0051		0.0051	0.0051	290.7044	0.0701	0.0000	292.4578
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3839	12.0968	3.2201	0.0318	0.7254	0.0268	0.7522	0.2119	0.0257	0.2375	3049.2681	0.1329	0.0000	3052.5902
Worker	0.8819	0.6106	6.5485	0.0208	2.0938	0.0143	2.1081	0.5605	0.0132	0.5736	1879.4527	0.0427	0.0000	1880.5213
Total	1.3069	12.9879	11.9599	0.0560	2.8192	0.0462	2.8654	0.7724	0.0440	0.8162	5219.4252	0.2457	0.0000	5225.5693

TOTAL ONSITE	0.0411	0.2805	2.1913	0.0034	0.0000	0.0051	0.0051	0.0000	0.0051	0.0051	290.7044	0.0701	0.0000	292.4578
TOTAL OFFSITE	1.2658	12.7074	9.7686	0.0526	2.8192	0.0411	2.8603	0.7724	0.0389	0.8111	4928.7208	0.1756	0.0000	4933.1115

Building Construction - 2022

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0426	0.2905	2.2698	0.0035		0.0053	0.0053		0.0053	0.0053	301.2425	0.0722	0.0000	303.0467
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3711	11.8449	3.1415	0.0326	0.7514	0.0242	0.7756	0.2195	0.0231	0.2426	3128.3861	0.1314	0.0000	3131.6720
Worker	0.8526	0.5674	6.2347	0.0207	2.1689	0.0145	2.1833	0.5806	0.0133	0.5939	1876.1268	0.0397	0.0000	1877.1195
Total	1.2663	12.7028	11.6460	0.0568	2.9203	0.0440	2.9642	0.8001	0.0417	0.8418	5305.7554	0.2433	0.0000	5311.8382

TOTAL ONSITE	0.0426	0.2905	2.2698	0.0035	0.0000	0.0053	0.0053	0.0000	0.0053	0.0053	301.2425	0.0722	0.0000	303.0467
TOTAL OFFSITE	1.2237	12.4123	9.3762	0.0533	2.9203	0.0387	2.9589	0.8001	0.0364	0.8365	5004.5129	0.1711	0.0000	5008.7915

Building Construction - 2023

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0287	0.1955	1.5278	0.0024		0.0036	0.0036		0.0036	0.0036	202.8289	0.0483	0.0000	204.0352
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1882	6.0421	1.8992	0.0213	0.5058	0.0071	0.5129	0.1477	0.0067	0.1545	2045.7785	0.0753	0.0000	2047.6614
Worker	0.5373	0.3435	3.8610	0.0134	1.4598	0.0096	1.4694	0.3908	0.0088	0.3996	1214.8106	0.0240	0.0000	1215.4095
Total	0.7542	6.5811	7.2880	0.0371	1.9656	0.0202	1.9859	0.5385	0.0191	0.5577	3463.4180	0.1476	0.0000	3467.1061

TOTAL ONSITE	0.0287	0.1955	1.5278	0.0024	0.0000	0.0036	0.0036	0.0000	0.0036	0.0036	202.8289	0.0483	0.0000	204.0352
TOTAL OFFSITE	0.7255	6.3856	5.7602	0.0347	1.9656	0.0166	1.9823	0.5385	0.0155	0.5541	3260.5891	0.0993	0.0000	3263.0709

Architectural Coating - 2022

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Arch. Coating	3.02E+00					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0021	0.0091	0.1301	0.0002		0.0003	0.0003		0.0003	0.0003	18.1281	0.0012	0.0000	18.1576
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0931	0.0620	0.6807	0.0023	0.2368	0.0016	0.2384	0.0634	0.0015	0.0648	204.8409	0.0043	0.0000	204.9493
Total	3.1185	0.0711	0.8108	0.0025	0.2368	0.0019	0.2387	0.0634	0.0017	0.0651	222.9690	0.0055	0.0000	223.1069

TOTAL ONSITE	3.0254	0.0091	0.1301	0.0002	0.0000	0.0003	0.0003	0.0000	0.0003	0.0003	18.1281	0.0012	0.0000	18.1576
TOTAL OFFSITE	0.0931	0.0620	0.6807	0.0023	0.2368	0.0016	0.2384	0.0634	0.0015	0.0648	204.8409	0.0043	0.0000	204.9493

Architectural Coating - 2023

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Arch. Coating	3.81E+00					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0027	0.0115	0.1640	0.0003		0.0004	0.0004		0.0004	0.0004	22.8516	0.0014	0.0000	22.8858
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1099	0.0702	0.7895	0.0028	0.2985	0.0020	0.3005	0.0799	0.0018	0.0817	248.4066	0.0049	0.0000	248.5291
Total	3.9237	0.0817	0.9535	0.0030	0.2985	0.0023	0.3009	0.0799	0.0022	0.0821	271.2582	0.0063	0.0000	271.4149

TOTAL ONSITE	3.8138	0.0115	0.1640	0.0003	0.0000	0.0004	0.0004	0.0000	0.0004	0.0004	22.8516	0.0014	0.0000	22.8858
TOTAL OFFSITE	0.1099	0.0702	0.7895	0.0028	0.2985	0.0020	0.3005	0.0799	0.0018	0.0817	248.4066	0.0049	0.0000	248.5291

Grading - 2022

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.1734	0.0000	0.1734	0.0648	0.0000	0.0648	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.1337	1.3365	0.0025		0.0041	0.0041		0.0041	0.0041	220.8649	0.0714	0.0000	222.6507
Hauling	0.1382	4.5950	1.0717	0.0143	0.4053	0.0134	0.4187	0.1088	0.0128	0.1216	1389.8812	0.0625	0.0000	1391.4432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0023	0.0016	0.0170	0.0001	0.0059	0.0000	0.0060	0.0016	0.0000	0.0016	5.1248	0.0001	0.0000	5.1275
Total	0.1713	4.7303	2.4252	0.0169	0.5846	0.0176	0.6022	0.1752	0.0170	0.1921	1615.8709	0.1340	0.0000	1619.2214
TOTAL ONSITE	0.0308	0.1337	1.3365	0.0025	0.1734	0.0041	0.1775	0.0648	0.0041	0.0689	220.8649	0.0714	0.0000	222.6507
TOTAL OFFSITE	0.1405	4.5966	1.0887	0.0144	0.4112	0.0134	0.4247	0.1104	0.0128	0.1232	1395.0060	0.0626	0.0000	1396.5707

Grading - 2023

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Fugitive Dust					0.1219	0.0000	0.1219	0.0365	0.0000	0.0365	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0156	0.0677	0.6765	0.0013		0.0021	0.0021		0.0021	0.0021	111.7970	0.0362	0.0000	112.7010
Hauling	0.0479	1.5298	0.4932	0.0070	0.3659	0.0028	0.3687	0.0946	0.0027	0.0972	676.4156	0.0285	0.0000	677.1273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0011	0.0007	0.0079	0.0000	0.0030	0.0000	0.0030	0.0008	0.0000	0.0008	2.4955	0.0001	0.0000	2.4967
Total	0.0646	1.5982	1.1776	0.0083	0.4908	0.0049	0.4957	0.1319	0.0048	0.1366	790.7081	0.0648	0.0000	792.3250
TOTAL ONSITE	0.0156	0.0677	0.6765	0.0013	0.1219	0.0021	0.1240	0.0365	0.0021	0.0386	111.7970	0.0362	0.0000	112.7010
TOTAL OFFSITE	0.0490	1.5305	0.5011	0.0070	0.3689	0.0028	0.3717	0.0954	0.0027	0.0980	678.9111	0.0286	0.0000	679.6240

Paving - 2023

Unmitigated Construction

	tons/yr										MT/yr			
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO2	CH4	N2O	CO2e
Off-Road	0.0231	0.1003	1.4269	0.0019		0.0031	0.0031		0.0031	0.0031	165.2215	0.0534	0.0000	166.5574
Paving	0.0074					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0033	0.0021	0.0239	0.0001	0.0091	0.0001	0.0091	0.0024	0.0001	0.0025	7.5322	0.0002	0.0000	7.5359
Total	0.0339	0.1024	1.4508	0.0020	0.0091	0.0032	0.0122	0.0024	0.0031	0.0056	172.7537	0.0536	0.0000	174.0933
TOTAL ONSITE	0.0305	0.1003	1.4269	0.0019	0.0000	0.0031	0.0031	0.0000	0.0031	0.0031	165.2215	0.0534	0.0000	166.5574
TOTAL OFFSITE	0.0033	0.0021	0.0239	0.0001	0.0091	0.0001	0.0091	0.0024	0.0001	0.0025	7.5322	0.0002	0.0000	7.5359

Concrete Batch Plant

Unmitigated Construction

	Calculated Emissions		
Batching Processes[1]	**PM10**	**PM2.5**	**Units**
Aggregate Transfer	-	-	-
Sand Transfer	-	-	-
Cement unloading	0.0332965	0.0060174	lb/day
Cement supplement unloa	0.0722093	0.0136395	lb/day
weigh hopper loading	-	-	-
Mixer loading (central mix)	4.69374	0.704061	lb/day
Total	**4.7992458**	**0.723718**	**lb/day**
	0.00240	0.00036	tons/day
	0.87586	0.13208	tons/year

1. Refer to modeling assumptions

Rock Crushing

Unmitigated Construction

	Calculated Emissions		
Equipment Type	**PM10**	**PM2.5**	**Units**
Hopper Loading	0.87	0.13	lb/day
Primary Crusher	0.90	0.17	lb/day
Conveyor Transfer	0.08	0.02	lb/day
Screen 1	1.23	0.08	lb/day
Conveyor Transfer	0.08	0.02	lb/day
Conveyor Transfer to Pile	0.87	0.13	lb/day
Conveyor Transfer	0.08	0.02	lb/day
Secondary Crusher	0.90	0.17	lb/day
Conveyor Transfer	0.08	0.02	lb/day
Screen 2	1.23	0.08	lb/day
Conveyor Transfer	0.08	0.02	lb/day
Conveyor Transfer to Pile	0.87	0.13	lb/day
Total	7.26	1.00	lb/day
	0.00363	0.00050	tons/day
	0.10890	0.01505	tons/year

Average Daily Emissions Summary - Construction - Unmitigated

Construction Schedule

	Start Date	End Date	Working Days (5 Days per week)	Hours per Day
2020	12/15/2020	12/31/2020	13	8
2021	1/1/2021	12/31/2021	261	8
2022	1/1/2022	12/31/2022	260	8
2023	1/1/2023	11/1/2023	218	8
Total Working Days	12/15/2020	12/31/2022	752	8

	lb/day									
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Average Daily Emissions (Calculated from total construction emissions)	28.43	104.13	106.53	0.50	25.30	0.39	28.31	7.03	0.37	7.40
BAAQMD Threshold	54	54	NA	NA	BMP	82	NA	BMP	54	NA
Exceeds Threshold	No	**Yes**	NA	NA	NA	No	NA	NA	No	NA

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite	18.80	3.36	31.91	0.05	1.22	0.08	1.30	0.47	0.08	0.54
Total Offsite	9.63	100.76	74.61	0.45	24.08	0.31	24.39	6.57	0.29	7.25

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total 2020	1.48	12.63	58.72	0.12	11.34	0.18	11.52	4.92	0.17	5.10
Total 2021	10.32	101.16	106.67	0.45	22.47	0.39	22.86	6.29	0.37	6.66
Total 2022	35.05	134.65	114.48	0.59	28.78	0.49	29.27	7.99	0.46	8.45
Total 2023	43.82	76.73	99.72	0.46	25.36	0.28	25.64	6.91	0.27	7.17

Criteria Air Pollutant Emissions Summary - Operations 2024 - Annual Emissions

Existing Land Use - Total Annual Emissions 2020 (tons/year)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	0.4649	1.00E-05	9.70E-04	0.00E+00		0.00E+00	0.00E+00		0.00E+00	0.00E+00
Energy Use	1.13E-02	0.1027	0.0863	6.20E-04		7.81E-03	7.81E-03		7.81E-03	7.81E-03
Mobile Sources	0.2424	1.0156	2.8682	8.98E-03	0.7819	9.00E-03	0.7909	2.09E-01	8.44E-03	2.18E-01
Stationary						0.00E+00	0		0.00E+00	0.00E+00
Waste Generation						0	0		0	0
Water/Wastewater						0	0		0	0
Total	0.72	1.12	2.96	0.01	0.78	0.02	0.80	0.21	0.02	0.23

Proprosed Project - Total Annual Emissions 2024 (tons/year)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area	5.043	2.50E-04	2.79E-02	0.00E+00		1.00E-04	1.00E-04		1.00E-04	1.00E-04
Energy - No Natural Gas	0.00E+00	0	0	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00
Mobile	1.977	7.612	23.0997	8.54E-02	8.4276	6.72E-02	8.4947	2.26E+00	6.25E-02	2.32E+00
Stationary	0.0985	0.4403	0.2511	4.70E-04		1.45E-02	0.0145		1.45E-02	1.45E-02
Waste Generation						0	0		0	0
Water/Wastewater						0	0		0	0
EV Chargers	-3.22E-05	-1.738751745								
Total	7.12	6.31	23.38	0.09	8.43	0.08	8.51	2.26	0.08	2.33

Net Annual Emissions (tons/year)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	4.5781	0.00024	0.02693	0	0	0.0001	0.0001	0	0.0001	0.0001
Energy Use	-1.13E-02	-0.1027	-0.0863	-0.00062	0	-0.00781	-0.00781	0	-0.00781	-0.00781
Mobile Sources	1.7346	6.5964	20.2315	0.07642	7.6457	0.0582	7.7038	2.0464	0.05406	2.1004
Stationary	0.0985	0.4403	0.2511	0.00047	0	0.0145	0.0145	0	0.0145	0.0145
Waste Generation	0	0	0	0	0	0	0	0	0	0
Water/Wastewater	0	0	0	0	0	0	0	0	0	0
EV Chargers	-0.7186322	-1.738751745								
Total	5.68	5.20	20.42	0.08	7.65	0.06	7.71	2.05	0.06	2.11

Criteria Air Pollutant Emissions Summary - Operations 2024 - Daily Emissions

Existing Land Use - Total AnnualEmission Rates 2024 (lb/day)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area	3	0	0	0	0	0	0	0	0	0
Energy	0	1	0	0	0	0	0	0	0	0
Mobile	1	6	16	0	4	0	4	1	0	1
Stationary	0	0	0	0	0	0	0	0	0	0
Waste Generation	0	0	0	0	0	0	0	0	0	0
Water/Wastewater	0	0	0	0	0	0	0	0	0	0
Total	4	6	16	0	4	0	4	1	0	1

Proprosed Project - Daily Emission (lb/day)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area	28	0	0	0	0	0	0	0	0	0
Energy - No Natural Gas	0	0	0	0	0	0	0	0	0	0
Mobile	11	42	127	0	46	0	47	12	0	13
Stationary	1	2	1	0	0	0	0	0	0	0
Waste Generation	0	0	0	0	0	0	0	0	0	0
Water/Wastewater	0	0	0	0	0	0	0	0	0	0
EV Chargers	0	-10								
Total	39	35	128	0	46	0	47	12	0	13

Net Annual Emissions (lb/day)

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	25	0	0	0	0	0	0	0	0	0
Energy Use	0	-1	0	0	0	0	0	0	0	0
Mobile Sources	10	36	111	0	42	0	42	11	0	12
Stationary	1	2	1	0	0	0	0	0	0	0
Waste Generation	0	0	0	0	0	0	0	0	0	0
Water/Wastewater	0	0	0	0	0	0	0	0	0	0
EV Chargers	-4	-10								
Total	31	28	112	0	42	0	42	11	0	12
BAAQMD Threshold (Daily)	54	54	NA	NA	NA	82	NA	NA	54	NA
Exceeds Threshold	No	No	NA	NA	NA	No	NA	NA	No	NA

Note: Annual emissions divided by 365 days/year to obtain average daily emissions.

Greenhouse Gas Emissions Summary - Operations 2024

Existing Land Use - 2020 (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	Percent of Total
Area	0	1.88E-03	1.88E-03	1.00E-05	0	0.00	0%
Energy (natural gas + electricity)	0	298.67	298.67	2.37E-02	4.99E-03	300.75	103%
Mobile	0	821.28	821.28	2.96E-02	0	822.02	281%
Stationary							0%
Waste Generation	19.8221	0	19.8221	1.17E+00	0.00E+00	49.11	17%
Water/Wastewater	6	12	18	1	0	37.69	13%
EV Chargers							0%
Vegetation						-916.86	-
Total	25.7427	1132.14478	1157.88748	1.83431	0.01959	292.71	100%

Proposed Project - 2024 (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	Percent of Total
Area	0	5.44E-02	5.44E-02	1.40E-04	0	0	0%
Energy (electricity only)			967.68	1.15E-01	1.21E-02	1,542	16%
Mobile	0	7,829.70	7,829.70	2.44E-01	0	7,836	81%
Stationary	0	45.70	45.70	6.41E-03	0	46	0%
Waste Generation	254.3477	0	254.3477	1.50E+01	0.00E+00	630	7%
Water/Wastewater	14	25	39	1	0	84	1%
EV Chargers						-4	0%
Vegetation						-490	-
Total	268.1185	7900.462	9136.2611	16.81395	0.0458	9,644	100%

Net Emission Rates from Proposed Project (MT/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	Percent of Total
Area	0	0.05252	0.05252	0.00013	0	0	0%
Energy (natural gas + electricity)	0	-298.667	669.0136	0.0911	0.00711	1,241	13%
Mobile	0	7008.425	7008.425	0.2141	0	7,014	75%
Stationary	0	45.6957	45.6957	0.00641	0	46	0%
Waste Generation	234.5256	0	234.5256	13.86	0	581	6%
Water/Wastewater	7.8502	12.811	20.6612	0.8079	0.0191	47	0%
EV Chargers						-4	0%
Vegetation						427	5%
Total	242.3758	6768.31722	7978.37362	14.97964	0.02621	9,352	100%

Construction

Construction	MT/yr
Unmitigated	**Const.**
2020	68
2021	5,493
2022	7,154
2023	4,705
Total Construction	17,421

Electricity and Natural Gas Conversions

Electricity

Land Use	KWh/yr	MT/yr	kWh/MTCO2e/yr
City Park	-230571		
Enclosed Parking with Elevator	1.62E+06		
General Light Industry	-136779		
General Office Building	5.77E+06		
High Turnover (Sit Down Restaurant)	175016		
High Turnover (Sit Down Restaurant)	268613		
Other Asphalt Surfaces	-230571		
Other Non- Asphalt Surfaces	-230571		
Parking Lot	-224271		
Parking Lot	-226721		
Research & Development	6.39E+06		
Unenclosed Parking with Elevator	836429		
TOTAL	13,778,064	974	0.0000707

Natural Gas

Land Use	kBTU/yr	KWh/Yr	MTCO2e/yr
City Park	0	0	0
Enclosed Parking with Elevator	0	0	0
General Light Industry	245604	71982.415	5.089369768
General Office Building	4.30E+06	1261392.15	89.18415768
High Turnover (Sit Down Restaurant)	2.47E+06	722989.449	51.11749368
High Turnover (Sit Down Restaurant)	3.04E+06	889832.943	62.91382244
Other Asphalt Surfaces	0	0	0
Other Non- Asphalt Surfaces	0	0	0
Parking Lot	0	0	0
Research & Development	1.73E+07	5080744.43	359.2236674
Unenclosed Parking with Elevator	0	0	0
TOTAL	27,387,924	8,026,941	568

kBTU --> KWh	3.412

LSAP Update - Santa Clara County, Annual

LSAP Update

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments High Rise	5,935.00	Dwelling Unit	95.73	5,935,000.00	14363
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population factor of 2.42 residents per dwelling unit applied

Construction Phase - Construction not modeled

Vehicle Trips -

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - Solid waste generation per Section 3.11

Mobile Land Use Mitigation - Transit Accessibility mitigation applied as a PDF

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.67
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	890.25	1,899.20
tblFireplaces	NumberWood	1,008.95	0.00
tblLandUse	Population	16,974.00	14,363.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblVehicleEF	HHD	4,248.15	4,248.15
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85

tblVehicleEF	HHD	12.10	12.10
tblVehicleEF	HHD	3,680.92	3,680.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.20	11.20
tblVehicleEF	HHD	19.12	19.12
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.46	0.47
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4005e-004
tblVehicleEF	LDA	1.3400e-003	1.3829e-003
tblVehicleEF	LDA	7.4900e-004	7.7297e-004
tblVehicleEF	LDA	1.2320e-003	1.2714e-003
tblVehicleEF	LDA	3.5260e-003	3.5436e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	5.1280e-003	5.1536e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.32	0.34
tblVehicleEF	LDA	0.36	0.38
tblVehicleEF	LDA	178.15	178.15
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
tblVehicleEF	LDA	1.3400e-003	1.4334e-003
tblVehicleEF	LDA	7.4900e-004	8.0083e-004
tblVehicleEF	LDA	1.2320e-003	1.3179e-003

tblVehicleEF	LDA	3.9300e-003	3.9778e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	5.7190e-003	5.7878e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.53	0.56
tblVehicleEF	LDA	163.13	163.13
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
tblVehicleEF	LDA	1.3400e-003	1.4334e-003
tblVehicleEF	LDA	7.4900e-004	8.0083e-004
tblVehicleEF	LDA	1.2320e-003	1.3179e-003
tblVehicleEF	LDA	3.4240e-003	3.4652e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	4.9800e-003	5.0401e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDT1	0.38	0.39
tblVehicleEF	LDT1	0.67	0.69
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0444e-003
tblVehicleEF	LDT1	1.6110e-003	1.6626e-003
tblVehicleEF	LDT1	9.3000e-004	9.5976e-004
tblVehicleEF	LDT1	1.4810e-003	1.5284e-003

tblVehicleEF	LDT1	5.4940e-003	5.5215e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	8.0150e-003	8.0551e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.44	0.47
tblVehicleEF	LDT1	0.53	0.56
tblVehicleEF	LDT1	228.00	228.00
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003
tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	6.1140e-003	6.1878e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	8.9190e-003	9.0259e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.37	0.39
tblVehicleEF	LDT1	0.78	0.82
tblVehicleEF	LDT1	209.18	209.18
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003

tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	5.3370e-003	5.4009e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	7.7850e-003	7.8782e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT2	0.42	0.43
tblVehicleEF	LDT2	0.67	0.69
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	9.9588e-004
tblVehicleEF	LDT2	1.5330e-003	1.5821e-003
tblVehicleEF	LDT2	8.8800e-004	9.1642e-004
tblVehicleEF	LDT2	1.4090e-003	1.4541e-003
tblVehicleEF	LDT2	5.6060e-003	5.6340e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	8.1710e-003	8.2119e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.49	0.52
tblVehicleEF	LDT2	0.56	0.59
tblVehicleEF	LDT2	260.73	260.73
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003

tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	6.2420e-003	6.3174e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	9.0990e-003	9.2088e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.41	0.43
tblVehicleEF	LDT2	0.77	0.81
tblVehicleEF	LDT2	239.19	239.19
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003
tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	5.4450e-003	5.5104e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	7.9360e-003	8.0320e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81

tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	18.39	18.39
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MDV	0.55	0.56
tblVehicleEF	MDV	1.10	1.12
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0908e-003
tblVehicleEF	MDV	1.6410e-003	1.6935e-003
tblVehicleEF	MDV	9.7300e-004	1.0041e-003
tblVehicleEF	MDV	1.5080e-003	1.5563e-003
tblVehicleEF	MDV	9.2590e-003	9.3053e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.68
tblVehicleEF	MDV	0.90	0.94
tblVehicleEF	MDV	351.78	351.78
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.57
tblVehicleEF	MDV	1.26	1.33
tblVehicleEF	MDV	323.56	323.56
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	8.9980e-003	9.1063e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02

tblVehicleEF	MHD	134.73	134.73
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblWoodstoves	NumberCatalytic	118.70	0.00
tblWoodstoves	NumberNoncatalytic	118.70	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	34.1207	0.7115	44.0115	3.6300e-003		0.2610	0.2610		0.2610	0.2610	0.0000	309.1011	309.1011	0.0731	4.3500e-003	312.2246
Energy	0.2804	2.4493	1.4076	0.0153		0.1938	0.1938		0.1938	0.1938	0.0000	4,186.4664	4,186.4664	0.2197	0.0694	4,212.6315
Mobile	4.4671	21.7612	53.6465	0.2546	31.4907	0.1379	31.6286	8.4272	0.1282	8.5554	0.0000	23,475.2610	23,475.2610	0.6432	0.0000	23,491.3407
Waste						0.0000	0.0000		0.0000	0.0000	786.5271	0.0000	786.5271	46.4824	0.0000	1,948.5875
Water						0.0000	0.0000		0.0000	0.0000	191.3931	158.4317	349.8248	19.6766	0.4662	980.6797
Total	**38.8682**	**24.9220**	**99.0657**	**0.2735**	**31.4907**	**0.5926**	**32.0833**	**8.4272**	**0.5829**	**9.0101**	**977.9201**	**28,129.2602**	**29,107.1803**	**67.0950**	**0.5400**	**30,945.4639**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	34.1207	0.7115	44.0115	3.6300e-003		0.2610	0.2610		0.2610	0.2610	0.0000	309.1011	309.1011	0.0731	4.3500e-003	312.2246
Energy	0.2804	2.4493	1.4076	0.0153		0.1938	0.1938		0.1938	0.1938	0.0000	4,186.4664	4,186.4664	0.2197	0.0694	4,212.6315
Mobile	4.0844	19.9974	44.8360	0.2047	24.8024	0.1132	24.9156	6.6373	0.1051	6.7425	0.0000	18,885.8449	18,885.8449	0.5374	0.0000	18,899.2790
Waste						0.0000	0.0000		0.0000	0.0000	786.5271	0.0000	786.5271	46.4824	0.0000	1,948.5875
Water						0.0000	0.0000		0.0000	0.0000	153.1145	133.0637	286.1781	15.7420	0.3731	790.9054
Total	**38.4855**	**23.1581**	**90.2551**	**0.2237**	**24.8024**	**0.5679**	**25.3703**	**6.6373**	**0.5599**	**7.1972**	**939.6415**	**23,514.4760**	**24,454.1175**	**63.0546**	**0.4468**	**26,163.6278**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.98**	**7.08**	**8.89**	**18.23**	**21.24**	**4.17**	**20.92**	**21.24**	**3.95**	**20.12**	**3.91**	**16.41**	**15.99**	**6.02**	**17.25**	**15.45**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0844	19.9974	44.8360	0.2047	24.8024	0.1132	24.9156	6.6373	0.1051	6.7425	0.0000	18,885.8449	18,885.8449	0.5374	0.0000	18,899.2790
Unmitigated	4.4671	21.7612	53.6465	0.2546	31.4907	0.1379	31.6286	8.4272	0.1282	8.5554	0.0000	23,475.2610	23,475.2610	0.6432	0.0000	23,491.3407

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	24,927.00	29,556.30	21662.75	58,021,971	45,698,685
Manufacturing	34.38	13.41	5.58	79,615	62,706
Office Park	13,704.00	1,968.00	912.00	25,563,723	20,134,244
Strip Mall	735.71	697.86	339.14	1,037,446	817,103
Total	39,401.09	32,235.57	22,919.47	84,702,755	66,712,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,411.1587	1,411.1587	0.1665	0.0185	1,420.8315
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,411.1587	1,411.1587	0.1665	0.0185	1,420.8315
NaturalGas Mitigated	0.2804	2.4493	1.4076	0.0153		0.1938	0.1938		0.1938	0.1938	0.0000	2,775.3077	2,775.3077	0.0532	0.0509	2,791.7999
NaturalGas Unmitigated	0.2804	2.4493	1.4076	0.0153		0.1938	0.1938		0.1938	0.1938	0.0000	2,775.3077	2,775.3077	0.0532	0.0509	2,791.7999

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	3.40235e+007	0.1835	1.5678	0.6671	0.0100		0.1268	0.1268		0.1268	0.1268	0.0000	1,815.6243	1,815.6243	0.0348	0.0333	1,826.4137
Manufacturing	184230	9.9000e-004	9.0300e-003	7.5900e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8312	9.8312	1.9000e-004	1.8000e-004	9.8896
Office Park	1.7772e+007	0.0958	0.8712	0.7318	5.2300e-003		0.0662	0.0662		0.0662	0.0662	0.0000	948.3816	948.3816	0.0182	0.0174	954.0174
Strip Mall	27556	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4705	1.4705	3.0000e-005	3.0000e-005	1.4792
Total		**0.2804**	**2.4493**	**1.4076**	**0.0153**		**0.1938**	**0.1938**		**0.1938**	**0.1938**	**0.0000**	**2,775.3076**	**2,775.3076**	**0.0532**	**0.0509**	**2,791.7999**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	3.40235e+007	0.1835	1.5678	0.6671	0.0100		0.1268	0.1268		0.1268	0.1268	0.0000	1,815.6243	1,815.6243	0.0348	0.0333	1,826.4137
Manufacturing	184230	9.9000e-004	9.0300e-003	7.5900e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8312	9.8312	1.9000e-004	1.8000e-004	9.8896
Office Park	1.7772e+007	0.0958	0.8712	0.7318	5.2300e-003		0.0662	0.0662		0.0662	0.0662	0.0000	948.3816	948.3816	0.0182	0.0174	954.0174
Strip Mall	27556	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4705	1.4705	3.0000e-005	3.0000e-005	1.4792
Total		**0.2804**	**2.4493**	**1.4076**	**0.0153**		**0.1938**	**0.1938**		**0.1938**	**0.1938**	**0.0000**	**2,775.3076**	**2,775.3076**	**0.0532**	**0.0509**	**2,791.7999**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.11227e+007	731.0364	0.0862	9.5800e-003	736.0473
Manufacturing	62100	2.1492	2.5000e-004	3.0000e-005	2.1640
Office Park	1.9452e+007	673.2162	0.0794	8.8200e-003	677.8308
Strip Mall	137448	4.7570	5.6000e-004	6.0000e-005	4.7896
Total		**1,411.1587**	**0.1665**	**0.0185**	**1,420.8316**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.11227e+007	731.0364	0.0862	9.5800e-003	736.0473
Manufacturing	62100	2.1492	2.5000e-004	3.0000e-005	2.1640
Office Park	1.9452e+007	673.2162	0.0794	8.8200e-003	677.8308
Strip Mall	137448	4.7570	5.6000e-004	6.0000e-005	4.7896
Total		**1,411.1587**	**0.1665**	**0.0185**	**1,420.8316**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	34.1207	0.7115	44.0115	3.6300e-003		0.2610	0.2610		0.2610	0.2610	0.0000	309.1011	309.1011	0.0731	4.3500e-003	312.2246
Unmitigated	34.1207	0.7115	44.0115	3.6300e-003		0.2610	0.2610		0.2610	0.2610	0.0000	309.1011	309.1011	0.0731	4.3500e-003	312.2246

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.8170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	27.9657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0240	0.2047	0.0871	1.3100e-003		0.0166	0.0166		0.0166	0.0166	0.0000	237.0948	237.0948	4.5400e-003	4.3500e-003	238.5037
Landscaping	1.3140	0.5067	43.9244	2.3300e-003		0.2444	0.2444		0.2444	0.2444	0.0000	72.0063	72.0063	0.0686	0.0000	73.7208
Total	**34.1207**	**0.7115**	**44.0115**	**3.6400e-003**		**0.2610**	**0.2610**		**0.2610**	**0.2610**	**0.0000**	**309.1011**	**309.1011**	**0.0731**	**4.3500e-003**	**312.2246**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.8170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	27.9657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0240	0.2047	0.0871	1.3100e-003		0.0166	0.0166		0.0166	0.0166	0.0000	237.0948	237.0948	4.5400e-003	4.3500e-003	238.5037
Landscaping	1.3140	0.5067	43.9244	2.3300e-003		0.2444	0.2444		0.2444	0.2444	0.0000	72.0063	72.0063	0.0686	0.0000	73.7208
Total	**34.1207**	**0.7115**	**44.0115**	**3.6400e-003**		**0.2610**	**0.2610**		**0.2610**	**0.2610**	**0.0000**	**309.1011**	**309.1011**	**0.0731**	**4.3500e-003**	**312.2246**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	286.1781	15.7420	0.3731	790.9054
Unmitigated	349.8248	19.6766	0.4662	980.6797

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	386.689 / 243.782	224.6236	12.6123	0.2989	628.9901
Manufacturing	2.08125 / 0	1.0500	0.0679	1.6100e-003	3.2253
Office Park	213.28 / 130.72	123.4395	6.9563	0.1648	346.4669
Strip Mall	1.2296 / 0.753628	0.7117	0.0401	9.5000e-004	1.9975
Total		**349.8248**	**19.6766**	**0.4663**	**980.6797**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	309.351 / 228.912	183.8036	10.0903	0.2391	507.3248
Manufacturing	1.665 / 0	0.8400	0.0543	1.2900e-003	2.5803
Office Park	170.624 / 122.746	100.9526	5.5653	0.1319	279.3896
Strip Mall	0.983683 / 0.707657	0.5820	0.0321	7.6000e-004	1.6107
Total		**286.1781**	**15.7420**	**0.3731**	**790.9054**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	786.5271	46.4824	0.0000	1,948.5875
Unmitigated	786.5271	46.4824	0.0000	1,948.5875

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	2730.1	554.1856	32.7514	0.0000	1,372.9714
Manufacturing	11.16	2.2654	0.1339	0.0000	5.6124
Office Park	1116	226.5379	13.3880	0.0000	561.2381
Strip Mall	17.43	3.5381	0.2091	0.0000	8.7656
Total		**786.5271**	**46.4824**	**0.0000**	**1,948.5875**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	2730.1	554.1856	32.7514	0.0000	1,372.9714
Manufacturing	11.16	2.2654	0.1339	0.0000	5.6124
Office Park	1116	226.5379	13.3880	0.0000	561.2381
Strip Mall	17.43	3.5381	0.2091	0.0000	8.7656
Total		**786.5271**	**46.4824**	**0.0000**	**1,948.5875**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

LSAP Update

Santa Clara County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments High Rise	5,935.00	Dwelling Unit	95.73	5,935,000.00	14363
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population factor of 2.42 residents per dwelling unit applied

Construction Phase - Construction not modeled

Vehicle Trips -

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - Solid waste generation per Section 3.11

Mobile Land Use Mitigation - Transit Accessibility mitigation applied as a PDF

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.67
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	890.25	1,899.20
tblFireplaces	NumberWood	1,008.95	0.00
tblLandUse	Population	16,974.00	14,363.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblVehicleEF	HHD	4,248.15	4,248.15
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85

tblVehicleEF	HHD	12.10	12.10
tblVehicleEF	HHD	3,680.92	3,680.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.20	11.20
tblVehicleEF	HHD	19.12	19.12
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.46	0.47
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4005e-004
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tblVehicleEF	LDA	7.4900e-004	7.7297e-004
tblVehicleEF	LDA	1.2320e-003	1.2714e-003
tblVehicleEF	LDA	3.5260e-003	3.5436e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	5.1280e-003	5.1536e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.32	0.34
tblVehicleEF	LDA	0.36	0.38
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tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
tblVehicleEF	LDA	1.3400e-003	1.4334e-003
tblVehicleEF	LDA	7.4900e-004	8.0083e-004
tblVehicleEF	LDA	1.2320e-003	1.3179e-003

tblVehicleEF	LDA	3.9300e-003	3.9778e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	5.7190e-003	5.7878e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.53	0.56
tblVehicleEF	LDA	163.13	163.13
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
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tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	4.9800e-003	5.0401e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDT1	0.38	0.39
tblVehicleEF	LDT1	0.67	0.69
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0444e-003
tblVehicleEF	LDT1	1.6110e-003	1.6626e-003
tblVehicleEF	LDT1	9.3000e-004	9.5976e-004
tblVehicleEF	LDT1	1.4810e-003	1.5284e-003

tblVehicleEF	LDT1	5.4940e-003	5.5215e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	8.0150e-003	8.0551e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.44	0.47
tblVehicleEF	LDT1	0.53	0.56
tblVehicleEF	LDT1	228.00	228.00
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003
tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	6.1140e-003	6.1878e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	8.9190e-003	9.0259e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.37	0.39
tblVehicleEF	LDT1	0.78	0.82
tblVehicleEF	LDT1	209.18	209.18
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003

tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	5.3370e-003	5.4009e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	7.7850e-003	7.8782e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT2	0.42	0.43
tblVehicleEF	LDT2	0.67	0.69
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	9.9588e-004
tblVehicleEF	LDT2	1.5330e-003	1.5821e-003
tblVehicleEF	LDT2	8.8800e-004	9.1642e-004
tblVehicleEF	LDT2	1.4090e-003	1.4541e-003
tblVehicleEF	LDT2	5.6060e-003	5.6340e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	8.1710e-003	8.2119e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.49	0.52
tblVehicleEF	LDT2	0.56	0.59
tblVehicleEF	LDT2	260.73	260.73
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003

tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	6.2420e-003	6.3174e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	9.0990e-003	9.2088e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.41	0.43
tblVehicleEF	LDT2	0.77	0.81
tblVehicleEF	LDT2	239.19	239.19
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003
tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	5.4450e-003	5.5104e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	7.9360e-003	8.0320e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81

tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	18.39	18.39
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MDV	0.55	0.56
tblVehicleEF	MDV	1.10	1.12
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0908e-003
tblVehicleEF	MDV	1.6410e-003	1.6935e-003
tblVehicleEF	MDV	9.7300e-004	1.0041e-003
tblVehicleEF	MDV	1.5080e-003	1.5563e-003
tblVehicleEF	MDV	9.2590e-003	9.3053e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.68
tblVehicleEF	MDV	0.90	0.94
tblVehicleEF	MDV	351.78	351.78
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.57
tblVehicleEF	MDV	1.26	1.33
tblVehicleEF	MDV	323.56	323.56
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	8.9980e-003	9.1063e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02

tblVehicleEF	MHD	134.73	134.73
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblWoodstoves	NumberCatalytic	118.70	0.00
tblWoodstoves	NumberNoncatalytic	118.70	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Energy	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
Mobile	34.7572	143.6727	390.5728	1.8119	219.6152	0.9525	220.5677	58.6049	0.8853	59.4902		184,053.7405	184,053.7405	4.7848		184,173.3594
Total	**234.8262**	**199.4790**	**901.9747**	**2.1562**	**219.6152**	**7.7016**	**227.3168**	**58.6049**	**7.6344**	**66.2394**	**0.0000**	**248,620.1086**	**248,620.1086**	**6.8454**	**1.1676**	**249,139.1717**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Energy	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
Mobile	32.1470	132.4780	322.3491	1.4564	172.9711	0.7817	173.7528	46.1578	0.7263	46.8841		148,020.7165	148,020.7165	3.9789		148,120.1883
Total	**232.2160**	**188.2843**	**833.7511**	**1.8007**	**172.9711**	**7.5308**	**180.5019**	**46.1578**	**7.4754**	**53.6332**	**0.0000**	**212,587.0846**	**212,587.0846**	**6.0395**	**1.1676**	**213,086.0006**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.11**	**5.61**	**7.56**	**16.49**	**21.24**	**2.22**	**20.59**	**21.24**	**2.08**	**19.03**	**0.00**	**14.49**	**14.49**	**11.77**	**0.00**	**14.47**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	32.1470	132.4780	322.3491	1.4564	172.9711	0.7817	173.7528	46.1578	0.7263	46.8841		148,020.7165	148,020.7165	3.9789		148,120.1883
Unmitigated	34.7572	143.6727	390.5728	1.8119	219.6152	0.9525	220.5677	58.6049	0.8853	59.4902		184,053.7405	184,053.7405	4.7848		184,173.3594

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	24,927.00	29,556.30	21662.75	58,021,971	45,698,685
Manufacturing	34.38	13.41	5.58	79,615	62,706
Office Park	13,704.00	1,968.00	912.00	25,563,723	20,134,244
Strip Mall	735.71	697.86	339.14	1,037,446	817,103
Total	39,401.09	32,235.57	22,919.47	84,702,755	66,712,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
NaturalGas Unmitigated	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	93215.1	1.0053	8.5904	3.6555	0.0548		0.6945	0.6945		0.6945	0.6945		10,966.4835	10,966.4835	0.2102	0.2011	11,031.6519
Manufacturing	504.74	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3811	59.3811	1.1400e-003	1.0900e-003	59.7340
Office Park	48690.4	0.5251	4.7736	4.0098	0.0286		0.3628	0.3628		0.3628	0.3628		5,728.2836	5,728.2836	0.1098	0.1050	5,762.3240
Strip Mall	75.4959	8.1000e-004	7.4000e-003	6.2200e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8819	8.8819	1.7000e-004	1.6000e-004	8.9347
Total		**1.5366**	**13.4209**	**7.7131**	**0.0838**		**1.0617**	**1.0617**		**1.0617**	**1.0617**		**16,763.0302**	**16,763.0302**	**0.3213**	**0.3073**	**16,862.6445**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	93.2151	1.0053	8.5904	3.6555	0.0548		0.6945	0.6945		0.6945	0.6945		10,966.4835	10,966.4835	0.2102	0.2011	11,031.6519
Manufacturing	0.50474	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3811	59.3811	1.1400e-003	1.0900e-003	59.7340
Office Park	48.6904	0.5251	4.7736	4.0098	0.0286		0.3628	0.3628		0.3628	0.3628		5,728.2836	5,728.2836	0.1098	0.1050	5,762.3240
Strip Mall	0.0754959	8.1000e-004	7.4000e-003	6.2200e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8819	8.8819	1.7000e-004	1.6000e-004	8.9347
Total		**1.5366**	**13.4209**	**7.7131**	**0.0838**		**1.0617**	**1.0617**		**1.0617**	**1.0617**		**16,763.0302**	**16,763.0302**	**0.3213**	**0.3073**	**16,862.6445**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Unmitigated	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	26.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	153.2368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.3011	36.7551	15.6405	0.2346		2.9717	2.9717		2.9717	2.9717	0.0000	46,921.4118	46,921.4118	0.8993	0.8602	47,200.2423
Landscaping	14.6001	5.6304	488.0484	0.0259		2.7158	2.7158		2.7158	2.7158		881.9261	881.9261	0.8400		902.9256
Total	**198.5324**	**42.3855**	**503.6888**	**0.2605**		**5.6875**	**5.6875**		**5.6875**	**5.6875**	**0.0000**	**47,803.3379**	**47,803.3379**	**1.7393**	**0.8602**	**48,103.1678**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	26.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	153.2368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.3011	36.7551	15.6405	0.2346		2.9717	2.9717		2.9717	2.9717	0.0000	46,921.4118	46,921.4118	0.8993	0.8602	47,200.2423
Landscaping	14.6001	5.6304	488.0484	0.0259		2.7158	2.7158		2.7158	2.7158		881.9261	881.9261	0.8400		902.9256
Total	**198.5324**	**42.3855**	**503.6888**	**0.2605**		**5.6875**	**5.6875**		**5.6875**	**5.6875**	**0.0000**	**47,803.3379**	**47,803.3379**	**1.7393**	**0.8602**	**48,103.1678**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

LSAP Update - Santa Clara County, Winter

LSAP Update

Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments High Rise	5,935.00	Dwelling Unit	95.73	5,935,000.00	14363
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population factor of 2.42 residents per dwelling unit applied

Construction Phase - Construction not modeled

Vehicle Trips -

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - Solid waste generation per Section 3.11

Mobile Land Use Mitigation - Transit Accessibility mitigation applied as a PDF

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.67
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	890.25	1,899.20
tblFireplaces	NumberWood	1,008.95	0.00
tblLandUse	Population	16,974.00	14,363.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblVehicleEF	HHD	4,248.15	4,248.15
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85

tblVehicleEF	HHD	12.10	12.10
tblVehicleEF	HHD	3,680.92	3,680.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.20	11.20
tblVehicleEF	HHD	19.12	19.12
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.46	0.47
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4005e-004
tblVehicleEF	LDA	1.3400e-003	1.3829e-003
tblVehicleEF	LDA	7.4900e-004	7.7297e-004
tblVehicleEF	LDA	1.2320e-003	1.2714e-003
tblVehicleEF	LDA	3.5260e-003	3.5436e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	5.1280e-003	5.1536e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.32	0.34
tblVehicleEF	LDA	0.36	0.38
tblVehicleEF	LDA	178.15	178.15
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
tblVehicleEF	LDA	1.3400e-003	1.4334e-003
tblVehicleEF	LDA	7.4900e-004	8.0083e-004
tblVehicleEF	LDA	1.2320e-003	1.3179e-003

tblVehicleEF	LDA	3.9300e-003	3.9778e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	5.7190e-003	5.7878e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.53	0.56
tblVehicleEF	LDA	163.13	163.13
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.6998e-004
tblVehicleEF	LDA	1.3400e-003	1.4334e-003
tblVehicleEF	LDA	7.4900e-004	8.0083e-004
tblVehicleEF	LDA	1.2320e-003	1.3179e-003
tblVehicleEF	LDA	3.4240e-003	3.4652e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	4.9800e-003	5.0401e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDT1	0.38	0.39
tblVehicleEF	LDT1	0.67	0.69
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0444e-003
tblVehicleEF	LDT1	1.6110e-003	1.6626e-003
tblVehicleEF	LDT1	9.3000e-004	9.5976e-004
tblVehicleEF	LDT1	1.4810e-003	1.5284e-003

tblVehicleEF	LDT1	5.4940e-003	5.5215e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	8.0150e-003	8.0551e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.44	0.47
tblVehicleEF	LDT1	0.53	0.56
tblVehicleEF	LDT1	228.00	228.00
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003
tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	6.1140e-003	6.1878e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	8.9190e-003	9.0259e-003
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.37	0.39
tblVehicleEF	LDT1	0.78	0.82
tblVehicleEF	LDT1	209.18	209.18
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0826e-003
tblVehicleEF	LDT1	1.6110e-003	1.7224e-003

tblVehicleEF	LDT1	9.3000e-004	9.9485e-004
tblVehicleEF	LDT1	1.4810e-003	1.5841e-003
tblVehicleEF	LDT1	5.3370e-003	5.4009e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	7.7850e-003	7.8782e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT2	0.42	0.43
tblVehicleEF	LDT2	0.67	0.69
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	9.9588e-004
tblVehicleEF	LDT2	1.5330e-003	1.5821e-003
tblVehicleEF	LDT2	8.8800e-004	9.1642e-004
tblVehicleEF	LDT2	1.4090e-003	1.4541e-003
tblVehicleEF	LDT2	5.6060e-003	5.6340e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	8.1710e-003	8.2119e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.49	0.52
tblVehicleEF	LDT2	0.56	0.59
tblVehicleEF	LDT2	260.73	260.73
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003

tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	6.2420e-003	6.3174e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	9.0990e-003	9.2088e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.41	0.43
tblVehicleEF	LDT2	0.77	0.81
tblVehicleEF	LDT2	239.19	239.19
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	9.6500e-004	1.0320e-003
tblVehicleEF	LDT2	1.5330e-003	1.6388e-003
tblVehicleEF	LDT2	8.8800e-004	9.4944e-004
tblVehicleEF	LDT2	1.4090e-003	1.5067e-003
tblVehicleEF	LDT2	5.4450e-003	5.5104e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	7.9360e-003	8.0320e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81

tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	18.39	18.39
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MDV	0.55	0.56
tblVehicleEF	MDV	1.10	1.12
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0908e-003
tblVehicleEF	MDV	1.6410e-003	1.6935e-003
tblVehicleEF	MDV	9.7300e-004	1.0041e-003
tblVehicleEF	MDV	1.5080e-003	1.5563e-003
tblVehicleEF	MDV	9.2590e-003	9.3053e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.68
tblVehicleEF	MDV	0.90	0.94
tblVehicleEF	MDV	351.78	351.78
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.57
tblVehicleEF	MDV	1.26	1.33
tblVehicleEF	MDV	323.56	323.56
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.1300e-003
tblVehicleEF	MDV	1.6410e-003	1.7544e-003
tblVehicleEF	MDV	9.7300e-004	1.0403e-003
tblVehicleEF	MDV	1.5080e-003	1.6130e-003
tblVehicleEF	MDV	8.9980e-003	9.1063e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02

tblVehicleEF	MHD	134.73	134.73
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblWoodstoves	NumberCatalytic	118.70	0.00
tblWoodstoves	NumberNoncatalytic	118.70	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Energy	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
Mobile	29.7941	148.1441	380.5749	1.6949	219.6152	0.9545	220.5697	58.6049	0.8872	59.4922		172,214.0220	172,214.0220	4.8793		172,336.0040
Total	**229.8631**	**203.9505**	**891.9768**	**2.0392**	**219.6152**	**7.7036**	**227.3188**	**58.6049**	**7.6364**	**66.2413**	**0.0000**	**236,780.3901**	**236,780.3901**	**6.9399**	**1.1676**	**237,301.8164**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Energy	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
Mobile	27.1859	135.7151	320.0529	1.3617	172.9711	0.7837	173.7548	46.1578	0.7282	46.8860		138,411.4174	138,411.4174	4.0898		138,513.6630
Total	**227.2549**	**191.5214**	**831.4548**	**1.7059**	**172.9711**	**7.5328**	**180.5039**	**46.1578**	**7.4773**	**53.6351**	**0.0000**	**202,977.7855**	**202,977.7855**	**6.1504**	**1.1676**	**203,479.4754**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.13**	**6.09**	**6.79**	**16.34**	**21.24**	**2.22**	**20.59**	**21.24**	**2.08**	**19.03**	**0.00**	**14.28**	**14.28**	**11.38**	**0.00**	**14.25**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.1859	135.7151	320.0529	1.3617	172.9711	0.7837	173.7548	46.1578	0.7282	46.8860		138,411.4174	138,411.4174	4.0898		138,513.6630
Unmitigated	29.7941	148.1441	380.5749	1.6949	219.6152	0.9545	220.5697	58.6049	0.8872	59.4922		172,214.0220	172,214.0220	4.8793		172,336.0040

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	24,927.00	29,556.30	21662.75	58,021,971	45,698,685
Manufacturing	34.38	13.41	5.58	79,615	62,706
Office Park	13,704.00	1,968.00	912.00	25,563,723	20,134,244
Strip Mall	735.71	697.86	339.14	1,037,446	817,103
Total	39,401.09	32,235.57	22,919.47	84,702,755	66,712,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445
NaturalGas Unmitigated	1.5366	13.4209	7.7131	0.0838		1.0617	1.0617		1.0617	1.0617		16,763.0302	16,763.0302	0.3213	0.3073	16,862.6445

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	93215.1	1.0053	8.5904	3.6555	0.0548		0.6945	0.6945		0.6945	0.6945		10,966.4835	10,966.4835	0.2102	0.2011	11,031.6519
Manufacturing	504.74	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3811	59.3811	1.1400e-003	1.0900e-003	59.7340
Office Park	48690.4	0.5251	4.7736	4.0098	0.0286		0.3628	0.3628		0.3628	0.3628		5,728.2836	5,728.2836	0.1098	0.1050	5,762.3240
Strip Mall	75.4959	8.1000e-004	7.4000e-003	6.2200e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8819	8.8819	1.7000e-004	1.6000e-004	8.9347
Total		**1.5366**	**13.4209**	**7.7131**	**0.0838**		**1.0617**	**1.0617**		**1.0617**	**1.0617**		**16,763.0302**	**16,763.0302**	**0.3213**	**0.3073**	**16,862.6445**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	93.2151	1.0053	8.5904	3.6555	0.0548		0.6945	0.6945		0.6945	0.6945		10,966.4835	10,966.4835	0.2102	0.2011	11,031.6519
Manufacturing	0.50474	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3811	59.3811	1.1400e-003	1.0900e-003	59.7340
Office Park	48.6904	0.5251	4.7736	4.0098	0.0286		0.3628	0.3628		0.3628	0.3628		5,728.2836	5,728.2836	0.1098	0.1050	5,762.3240
Strip Mall	0.0754959	8.1000e-004	7.4000e-003	6.2200e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8819	8.8819	1.7000e-004	1.6000e-004	8.9347
Total		**1.5366**	**13.4209**	**7.7131**	**0.0838**		**1.0617**	**1.0617**		**1.0617**	**1.0617**		**16,763.0302**	**16,763.0302**	**0.3213**	**0.3073**	**16,862.6445**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678
Unmitigated	198.5324	42.3855	503.6888	0.2605		5.6875	5.6875		5.6875	5.6875	0.0000	47,803.3379	47,803.3379	1.7393	0.8602	48,103.1678

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	26.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	153.2368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.3011	36.7551	15.6405	0.2346		2.9717	2.9717		2.9717	2.9717	0.0000	46,921.4118	46,921.4118	0.8993	0.8602	47,200.2423
Landscaping	14.6001	5.6304	488.0484	0.0259		2.7158	2.7158		2.7158	2.7158		881.9261	881.9261	0.8400		902.9256
Total	**198.5324**	**42.3855**	**503.6888**	**0.2605**		**5.6875**	**5.6875**		**5.6875**	**5.6875**	**0.0000**	**47,803.3379**	**47,803.3379**	**1.7393**	**0.8602**	**48,103.1678**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	26.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	153.2368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.3011	36.7551	15.6405	0.2346		2.9717	2.9717		2.9717	2.9717	0.0000	46,921.4118	46,921.4118	0.8993	0.8602	47,200.2423
Landscaping	14.6001	5.6304	488.0484	0.0259		2.7158	2.7158		2.7158	2.7158		881.9261	881.9261	0.8400		902.9256
Total	**198.5324**	**42.3855**	**503.6888**	**0.2605**		**5.6875**	**5.6875**		**5.6875**	**5.6875**	**0.0000**	**47,803.3379**	**47,803.3379**	**1.7393**	**0.8602**	**48,103.1678**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Adopted LSAP - Santa Clara County, Annual

Adopted LSAP

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments Mid Rise	2,323.00	Dwelling Unit	61.13	2,323,000.00	5622
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population 5,622

Construction Phase - Construction not modeled

Vehicle Trips - Adjusted based on 2016 EIR Output

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - 2016 EIR rates applied

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.68
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	348.45	743.36
tblFireplaces	NumberWood	394.91	0.00
tblLandUse	Population	6,644.00	5,622.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblSolidWaste	SolidWasteGenerationRate	1,068.58	3,157.00
tblSolidWaste	SolidWasteGenerationRate	11.16	19.00
tblSolidWaste	SolidWasteGenerationRate	1,116.00	3,291.00
tblSolidWaste	SolidWasteGenerationRate	17.43	63.00

tblVehicleEF	HHD	4,009.92	4,009.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.72	11.72
tblVehicleEF	HHD	19.10	19.10
tblVehicleEF	HHD	4,248.15	4,248.15
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	12.10	12.10
tblVehicleEF	HHD	3,680.92	3,680.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.20	11.20
tblVehicleEF	HHD	19.12	19.12
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.46	0.47
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tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
tblVehicleEF	LDA	1.3400e-003	1.3890e-003
tblVehicleEF	LDA	7.4900e-004	7.7600e-004
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tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	5.1280e-003	5.1640e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02

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tblVehicleEF	LDA	0.36	0.37
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tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
tblVehicleEF	LDA	1.3400e-003	1.3890e-003
tblVehicleEF	LDA	7.4900e-004	7.7600e-004
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tblVehicleEF	LDA	3.9300e-003	3.9580e-003
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tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
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tblVehicleEF	LDA	4.9800e-003	5.0150e-003

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tblVehicleEF	LDA	0.02	0.02
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tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
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tblVehicleEF	LDT1	5.4940e-003	5.5320e-003
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tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	8.0150e-003	8.0710e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.44	0.46
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tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0490e-003
tblVehicleEF	LDT1	1.6110e-003	1.6690e-003
tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
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tblVehicleEF	LDT1	0.02	0.02
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tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0490e-003
tblVehicleEF	LDT1	1.6110e-003	1.6690e-003
tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
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tblVehicleEF	LDT2	0.03	0.03
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tblVehicleEF	LDT2	5.6060e-003	5.6450e-003
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tblVehicleEF	LDT2	0.03	0.03
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tblVehicleEF	LDT2	8.8800e-004	9.2000e-004
tblVehicleEF	LDT2	1.4090e-003	1.4600e-003
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tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0000e-003
tblVehicleEF	LDT2	1.5330e-003	1.5880e-003

tblVehicleEF	LDT2	8.8800e-004	9.2000e-004
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tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
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tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MDV	0.55	0.56
tblVehicleEF	MDV	1.10	1.13
tblVehicleEF	MDV	327.55	327.55
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	9.2590e-003	9.3240e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.66
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tblVehicleEF	MDV	0.07	0.07
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tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.55
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tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
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tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
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tblVehicleEF	MH	1,173.30	1,173.30
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tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MHD	127.05	127.05
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	134.73	134.73

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tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	100.58	100.58
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tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	979.86	979.86
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.24	10.24
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.39	12.39
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01

tblVehicleTrips	CC_TL	7.30	4.50
tblVehicleTrips	CC_TL	7.30	4.90
tblVehicleTrips	CC_TL	7.30	5.00
tblVehicleTrips	CNW_TL	7.30	4.50
tblVehicleTrips	CNW_TL	7.30	4.90
tblVehicleTrips	CNW_TL	7.30	5.00
tblVehicleTrips	CW_TL	9.50	4.50
tblVehicleTrips	CW_TL	9.50	4.90
tblVehicleTrips	CW_TL	9.50	5.00
tblVehicleTrips	HO_TL	5.70	4.60
tblVehicleTrips	HO_TTP	54.00	44.80
tblVehicleTrips	HS_TL	4.80	4.60
tblVehicleTrips	HS_TTP	15.00	29.10
tblVehicleTrips	HW_TL	10.80	4.60
tblVehicleTrips	HW_TTP	31.00	26.10
tblVehicleTrips	ST_TR	6.39	6.59
tblVehicleTrips	ST_TR	1.49	5.00
tblVehicleTrips	ST_TR	1.64	7.50
tblVehicleTrips	ST_TR	42.04	82.97
tblVehicleTrips	SU_TR	5.86	6.59
tblVehicleTrips	SU_TR	0.62	5.00
tblVehicleTrips	SU_TR	0.76	7.50
tblVehicleTrips	SU_TR	20.43	82.97
tblVehicleTrips	WD_TR	6.65	6.59
tblVehicleTrips	WD_TR	3.82	5.00
tblVehicleTrips	WD_TR	11.42	7.50
tblVehicleTrips	WD_TR	44.32	82.97
tblWoodstoves	NumberCatalytic	46.46	0.00
tblWoodstoves	NumberNoncatalytic	46.46	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	16.6577	0.2785	17.2332	1.4200e-003		0.1022	0.1022		0.1022	0.1022	0.0000	120.9976	120.9976	0.0287	1.7000e-003	122.2210
Energy	0.1688	1.4951	1.0015	9.2100e-003		0.1166	0.1166		0.1166	0.1166	0.0000	2,636.2497	2,636.2497	0.1460	0.0433	2,652.7967
Mobile	2.7145	13.3399	27.3895	0.1195	14.1259	0.0677	14.1937	3.7802	0.0629	3.8431	0.0000	11,026.4390	11,026.4390	0.3270	0.0000	11,034.6148
Waste						0.0000	0.0000		0.0000	0.0000	1,325.5310	0.0000	1,325.5310	78.3366	0.0000	3,283.9469
Water						0.0000	0.0000		0.0000	0.0000	116.7317	96.3887	213.1204	12.0008	0.2844	597.8807
Total	**19.5410**	**15.1135**	**45.6243**	**0.1301**	**14.1259**	**0.2865**	**14.4124**	**3.7802**	**0.2817**	**4.0619**	**1,442.2627**	**13,880.0750**	**15,322.3377**	**90.8391**	**0.3293**	**17,691.4601**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	16.6577	0.2785	17.2332	1.4200e-003		0.1022	0.1022		0.1022	0.1022	0.0000	120.9976	120.9976	0.0287	1.7000e-003	122.2210
Energy	0.1688	1.4951	1.0015	9.2100e-003		0.1166	0.1166		0.1166	0.1166	0.0000	2,636.2497	2,636.2497	0.1460	0.0433	2,652.7967
Mobile	2.7145	13.3399	27.3895	0.1195	14.1259	0.0677	14.1937	3.7802	0.0629	3.8431	0.0000	11,026.4390	11,026.4390	0.3270	0.0000	11,034.6148
Waste						0.0000	0.0000		0.0000	0.0000	1,325.5310	0.0000	1,325.5310	78.3366	0.0000	3,283.9469
Water						0.0000	0.0000		0.0000	0.0000	93.3854	80.9312	174.3166	9.6011	0.2275	482.1510
Total	**19.5410**	**15.1135**	**45.6243**	**0.1301**	**14.1259**	**0.2865**	**14.4124**	**3.7802**	**0.2817**	**4.0619**	**1,418.9164**	**13,864.6176**	**15,283.5339**	**88.4394**	**0.2725**	**17,575.7304**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.62**	**0.11**	**0.25**	**2.64**	**17.25**	**0.65**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.7145	13.3399	27.3895	0.1195	14.1259	0.0677	14.1937	3.7802	0.0629	3.8431	0.0000	11,026.4390	11,026.4390	0.3270	0.0000	11,034.6148
Unmitigated	2.7145	13.3399	27.3895	0.1195	14.1259	0.0677	14.1937	3.7802	0.0629	3.8431	0.0000	11,026.4390	11,026.4390	0.3270	0.0000	11,034.6148

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	15,308.57	15,308.57	15308.57	22,765,711	22,765,711
Manufacturing	45.00	45.00	45.00	68,784	68,784
Office Park	9,000.00	9,000.00	9000.00	13,774,761	13,774,761
Strip Mall	1,377.30	1,377.30	1377.30	1,386,199	1,386,199
Total	25,730.87	25,730.87	25,730.87	37,995,455	37,995,455

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	4.60	4.60	4.60	26.10	29.10	44.80	86	11	3
Manufacturing	4.50	4.50	4.50	59.00	28.00	13.00	92	5	3
Office Park	4.90	4.90	4.90	33.00	48.00	19.00	82	15	3
Strip Mall	5.00	5.00	5.00	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	966.0487	966.0487	0.1140	0.0127	972.6705
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	966.0487	966.0487	0.1140	0.0127	972.6705
NaturalGas Mitigated	0.1688	1.4951	1.0015	9.2100e-003		0.1166	0.1166		0.1166	0.1166	0.0000	1,670.2010	1,670.2010	0.0320	0.0306	1,680.1262
NaturalGas Unmitigated	0.1688	1.4951	1.0015	9.2100e-003		0.1166	0.1166		0.1166	0.1166	0.0000	1,670.2010	1,670.2010	0.0320	0.0306	1,680.1262

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.3317e+007	0.0718	0.6136	0.2611	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	710.6481	710.6481	0.0136	0.0130	714.8711
Manufacturing	184203	9.9000e-004	9.0300e-003	7.5800e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8298	9.8298	1.9000e-004	1.8000e-004	9.8882
Office Park	1.77696e+007	0.0958	0.8711	0.7317	5.2300e-003		0.0662	0.0662		0.0662	0.0662	0.0000	948.2535	948.2535	0.0182	0.0174	953.8885
Strip Mall	27539.4	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4696	1.4696	3.0000e-005	3.0000e-005	1.4783
Total		**0.1688**	**1.4951**	**1.0015**	**9.2100e-003**		**0.1166**	**0.1166**		**0.1166**	**0.1166**	**0.0000**	**1,670.2010**	**1,670.2010**	**0.0320**	**0.0306**	**1,680.1262**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.3317e+007	0.0718	0.6136	0.2611	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	710.6481	710.6481	0.0136	0.0130	714.8711
Manufacturing	184203	9.9000e-004	9.0300e-003	7.5800e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8298	9.8298	1.9000e-004	1.8000e-004	9.8882
Office Park	1.77696e+007	0.0958	0.8711	0.7317	5.2300e-003		0.0662	0.0662		0.0662	0.0662	0.0000	948.2535	948.2535	0.0182	0.0174	953.8885
Strip Mall	27539.4	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4696	1.4696	3.0000e-005	3.0000e-005	1.4783
Total		**0.1688**	**1.4951**	**1.0015**	**9.2100e-003**		**0.1166**	**0.1166**		**0.1166**	**0.1166**	**0.0000**	**1,670.2010**	**1,670.2010**	**0.0320**	**0.0306**	**1,680.1262**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	8.26755e+006	286.1325	0.0338	3.7500e-003	288.0938
Manufacturing	62028	2.1467	2.5000e-004	3.0000e-005	2.1615
Office Park	1.9446e+007	673.0085	0.0794	8.8200e-003	677.6217
Strip Mall	137564	4.7610	5.6000e-004	6.0000e-005	4.7936
Total		**966.0487**	**0.1140**	**0.0127**	**972.6705**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	8.26755e+006	286.1325	0.0338	3.7500e-003	288.0938
Manufacturing	62028	2.1467	2.5000e-004	3.0000e-005	2.1615
Office Park	1.9446e+007	673.0085	0.0794	8.8200e-003	677.6217
Strip Mall	137564	4.7610	5.6000e-004	6.0000e-005	4.7936
Total		**966.0487**	**0.1140**	**0.0127**	**972.6705**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	16.6577	0.2785	17.2332	1.4200e-003		0.1022	0.1022		0.1022	0.1022	0.0000	120.9976	120.9976	0.0287	1.7000e-003	122.2210
Unmitigated	16.6577	0.2785	17.2332	1.4200e-003		0.1022	0.1022		0.1022	0.1022	0.0000	120.9976	120.9976	0.0287	1.7000e-003	122.2210

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.2743					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	13.8591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.3800e-003	0.0801	0.0341	5.1000e-004		6.4800e-003	6.4800e-003		6.4800e-003	6.4800e-003	0.0000	92.8005	92.8005	1.7800e-003	1.7000e-003	93.3520
Landscaping	0.5149	0.1984	17.1991	9.1000e-004		0.0957	0.0957		0.0957	0.0957	0.0000	28.1971	28.1971	0.0269	0.0000	28.8690
Total	**16.6577**	**0.2785**	**17.2332**	**1.4200e-003**		**0.1022**	**0.1022**		**0.1022**	**0.1022**	**0.0000**	**120.9976**	**120.9976**	**0.0287**	**1.7000e-003**	**122.2210**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.2743					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	13.8591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.3800e-003	0.0801	0.0341	5.1000e-004		6.4800e-003	6.4800e-003		6.4800e-003	6.4800e-003	0.0000	92.8005	92.8005	1.7800e-003	1.7000e-003	93.3520
Landscaping	0.5149	0.1984	17.1991	9.1000e-004		0.0957	0.0957		0.0957	0.0957	0.0000	28.1971	28.1971	0.0269	0.0000	28.8690
Total	**16.6577**	**0.2785**	**17.2332**	**1.4200e-003**		**0.1022**	**0.1022**		**0.1022**	**0.1022**	**0.0000**	**120.9976**	**120.9976**	**0.0287**	**1.7000e-003**	**122.2210**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	174.3166	9.6011	0.2275	482.1510
Unmitigated	213.1204	12.0008	0.2844	597.8807

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	151.353 / 95.4181	87.9192	4.9365	0.1170	246.1911
Manufacturing	2.08125 / 0	1.0500	0.0679	1.6100e-003	3.2253
Office Park	213.28 / 130.72	123.4395	6.9563	0.1648	346.4669
Strip Mall	1.2296 / 0.753628	0.7117	0.0401	9.5000e-004	1.9975
Total		**213.1204**	**12.0008**	**0.2844**	**597.8807**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	121.082 / 89.5976	71.9420	3.9494	0.0936	198.5704
Manufacturing	1.665 / 0	0.8400	0.0543	1.2900e-003	2.5803
Office Park	170.624 / 122.746	100.9526	5.5653	0.1319	279.3896
Strip Mall	0.983683 / 0.707657	0.5820	0.0321	7.6000e-004	1.6107
Total		**174.3166**	**9.6011**	**0.2275**	**482.1510**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,325.5310	78.3366	0.0000	3,283.9469
Unmitigated	1,325.5310	78.3366	0.0000	3,283.9469

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	3157	640.8425	37.8727	0.0000	1,587.6601
Manufacturing	19	3.8568	0.2279	0.0000	9.5551
Office Park	3291	668.0433	39.4802	0.0000	1,655.0489
Strip Mall	63	12.7884	0.7558	0.0000	31.6828
Total		**1,325.5310**	**78.3366**	**0.0000**	**3,283.9469**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	3157	640.8425	37.8727	0.0000	1,587.6601
Manufacturing	19	3.8568	0.2279	0.0000	9.5551
Office Park	3291	668.0433	39.4802	0.0000	1,655.0489
Strip Mall	63	12.7884	0.7558	0.0000	31.6828
Total		**1,325.5310**	**78.3366**	**0.0000**	**3,283.9469**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Adopted LSAP - Santa Clara County, Summer

Adopted LSAP

Santa Clara County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments Mid Rise	2,323.00	Dwelling Unit	61.13	2,323,000.00	5622
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population 5,622

Construction Phase - Construction not modeled

Vehicle Trips - Adjusted based on 2016 EIR Output

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - 2016 EIR rates applied

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.68
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	348.45	743.36
tblFireplaces	NumberWood	394.91	0.00
tblLandUse	Population	6,644.00	5,622.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblSolidWaste	SolidWasteGenerationRate	1,068.58	3,157.00
tblSolidWaste	SolidWasteGenerationRate	11.16	19.00
tblSolidWaste	SolidWasteGenerationRate	1,116.00	3,291.00
tblSolidWaste	SolidWasteGenerationRate	17.43	63.00

tblVehicleEF	HHD	4,009.92	4,009.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.72	11.72
tblVehicleEF	HHD	19.10	19.10
tblVehicleEF	HHD	4,248.15	4,248.15
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	12.10	12.10
tblVehicleEF	HHD	3,680.92	3,680.92
tblVehicleEF	HHD	1,480.24	1,480.24
tblVehicleEF	HHD	12.85	12.85
tblVehicleEF	HHD	11.20	11.20
tblVehicleEF	HHD	19.12	19.12
tblVehicleEF	LDA	0.27	0.28
tblVehicleEF	LDA	0.46	0.47
tblVehicleEF	LDA	165.25	165.25
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
tblVehicleEF	LDA	1.3400e-003	1.3890e-003
tblVehicleEF	LDA	7.4900e-004	7.7600e-004
tblVehicleEF	LDA	1.2320e-003	1.2770e-003
tblVehicleEF	LDA	3.5260e-003	3.5510e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	5.1280e-003	5.1640e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.02	0.02

tblVehicleEF	LDA	0.32	0.33
tblVehicleEF	LDA	0.36	0.37
tblVehicleEF	LDA	178.15	178.15
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
tblVehicleEF	LDA	1.3400e-003	1.3890e-003
tblVehicleEF	LDA	7.4900e-004	7.7600e-004
tblVehicleEF	LDA	1.2320e-003	1.2770e-003
tblVehicleEF	LDA	3.9300e-003	3.9580e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	5.7190e-003	5.7590e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.27	0.27
tblVehicleEF	LDA	0.53	0.55
tblVehicleEF	LDA	163.13	163.13
tblVehicleEF	LDA	37.76	37.76
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	8.1400e-004	8.4300e-004
tblVehicleEF	LDA	1.3400e-003	1.3890e-003
tblVehicleEF	LDA	7.4900e-004	7.7600e-004
tblVehicleEF	LDA	1.2320e-003	1.2770e-003
tblVehicleEF	LDA	3.4240e-003	3.4480e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	4.9800e-003	5.0150e-003

tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDT1	0.38	0.39
tblVehicleEF	LDT1	0.67	0.69
tblVehicleEF	LDT1	211.84	211.84
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0490e-003
tblVehicleEF	LDT1	1.6110e-003	1.6690e-003
tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
tblVehicleEF	LDT1	1.4810e-003	1.5350e-003
tblVehicleEF	LDT1	5.4940e-003	5.5320e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	8.0150e-003	8.0710e-003
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.44	0.46
tblVehicleEF	LDT1	0.53	0.55
tblVehicleEF	LDT1	228.00	228.00
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0490e-003
tblVehicleEF	LDT1	1.6110e-003	1.6690e-003
tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
tblVehicleEF	LDT1	1.4810e-003	1.5350e-003
tblVehicleEF	LDT1	6.1140e-003	6.1570e-003
tblVehicleEF	LDT1	0.05	0.05

tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	8.9190e-003	8.9810e-003
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.37	0.38
tblVehicleEF	LDT1	0.78	0.81
tblVehicleEF	LDT1	209.18	209.18
tblVehicleEF	LDT1	48.80	48.80
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	1.0120e-003	1.0490e-003
tblVehicleEF	LDT1	1.6110e-003	1.6690e-003
tblVehicleEF	LDT1	9.3000e-004	9.6400e-004
tblVehicleEF	LDT1	1.4810e-003	1.5350e-003
tblVehicleEF	LDT1	5.3370e-003	5.3740e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	7.7850e-003	7.8390e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT2	0.42	0.43
tblVehicleEF	LDT2	0.67	0.69
tblVehicleEF	LDT2	242.24	242.24
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0000e-003
tblVehicleEF	LDT2	1.5330e-003	1.5880e-003
tblVehicleEF	LDT2	8.8800e-004	9.2000e-004
tblVehicleEF	LDT2	1.4090e-003	1.4600e-003

tblVehicleEF	LDT2	5.6060e-003	5.6450e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	8.1710e-003	8.2280e-003
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.49	0.51
tblVehicleEF	LDT2	0.56	0.58
tblVehicleEF	LDT2	260.73	260.73
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0000e-003
tblVehicleEF	LDT2	1.5330e-003	1.5880e-003
tblVehicleEF	LDT2	8.8800e-004	9.2000e-004
tblVehicleEF	LDT2	1.4090e-003	1.4600e-003
tblVehicleEF	LDT2	6.2420e-003	6.2860e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	9.0990e-003	9.1630e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.41	0.42
tblVehicleEF	LDT2	0.77	0.79
tblVehicleEF	LDT2	239.19	239.19
tblVehicleEF	LDT2	55.35	55.35
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	9.6500e-004	1.0000e-003
tblVehicleEF	LDT2	1.5330e-003	1.5880e-003

tblVehicleEF	LDT2	8.8800e-004	9.2000e-004
tblVehicleEF	LDT2	1.4090e-003	1.4600e-003
tblVehicleEF	LDT2	5.4450e-003	5.4830e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	7.9360e-003	7.9920e-003
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD1	622.33	622.33
tblVehicleEF	LHD1	24.22	24.22
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	LHD2	13.43	13.43
tblVehicleEF	LHD2	666.81	666.81
tblVehicleEF	LHD2	21.23	21.23
tblVehicleEF	MCY	10.41	10.41
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	18.39	18.39

tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MDV	0.55	0.56
tblVehicleEF	MDV	1.10	1.13
tblVehicleEF	MDV	327.55	327.55
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	9.2590e-003	9.3240e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.66
tblVehicleEF	MDV	0.90	0.92
tblVehicleEF	MDV	351.78	351.78
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.55
tblVehicleEF	MDV	1.26	1.30
tblVehicleEF	MDV	323.56	323.56
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	8.9980e-003	9.0610e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MHD	127.05	127.05
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	134.73	134.73

tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	100.58	100.58
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	979.86	979.86
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.24	10.24
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.39	12.39
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01

tblVehicleTrips	CC_TL	7.30	4.50
tblVehicleTrips	CC_TL	7.30	4.90
tblVehicleTrips	CC_TL	7.30	5.00
tblVehicleTrips	CNW_TL	7.30	4.50
tblVehicleTrips	CNW_TL	7.30	4.90
tblVehicleTrips	CNW_TL	7.30	5.00
tblVehicleTrips	CW_TL	9.50	4.50
tblVehicleTrips	CW_TL	9.50	4.90
tblVehicleTrips	CW_TL	9.50	5.00
tblVehicleTrips	HO_TL	5.70	4.60
tblVehicleTrips	HO_TTP	54.00	44.80
tblVehicleTrips	HS_TL	4.80	4.60
tblVehicleTrips	HS_TTP	15.00	29.10
tblVehicleTrips	HW_TL	10.80	4.60
tblVehicleTrips	HW_TTP	31.00	26.10
tblVehicleTrips	ST_TR	6.39	6.59
tblVehicleTrips	ST_TR	1.49	5.00
tblVehicleTrips	ST_TR	1.64	7.50
tblVehicleTrips	ST_TR	42.04	82.97
tblVehicleTrips	SU_TR	5.86	6.59
tblVehicleTrips	SU_TR	0.62	5.00
tblVehicleTrips	SU_TR	0.76	7.50
tblVehicleTrips	SU_TR	20.43	82.97
tblVehicleTrips	WD_TR	6.65	6.59
tblVehicleTrips	WD_TR	3.82	5.00
tblVehicleTrips	WD_TR	11.42	7.50
tblVehicleTrips	WD_TR	44.32	82.97
tblWoodstoves	NumberCatalytic	46.46	0.00
tblWoodstoves	NumberNoncatalytic	46.46	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Energy	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
Mobile	17.5904	72.3924	155.4174	0.6931	80.3562	0.3721	80.7283	21.4433	0.3457	21.7890		70,490.4154	70,490.4154	1.9671		70,539.5933
Total	**114.3222**	**97.1752**	**358.1282**	**0.8455**	**80.3562**	**3.2374**	**83.5936**	**21.4433**	**3.2110**	**24.6542**	**0.0000**	**99,289.2529**	**99,289.2529**	**2.8417**	**0.5217**	**99,515.7454**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Energy	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
Mobile	17.5904	72.3924	155.4174	0.6931	80.3562	0.3721	80.7283	21.4433	0.3457	21.7890		70,490.4154	70,490.4154	1.9671		70,539.5933
Total	**114.3222**	**97.1752**	**358.1282**	**0.8455**	**80.3562**	**3.2374**	**83.5936**	**21.4433**	**3.2110**	**24.6542**	**0.0000**	**99,289.2529**	**99,289.2529**	**2.8417**	**0.5217**	**99,515.7454**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.5904	72.3924	155.4174	0.6931	80.3562	0.3721	80.7283	21.4433	0.3457	21.7890		70,490.4154	70,490.4154	1.9671		70,539.5933
Unmitigated	17.5904	72.3924	155.4174	0.6931	80.3562	0.3721	80.7283	21.4433	0.3457	21.7890		70,490.4154	70,490.4154	1.9671		70,539.5933

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	15,308.57	15,308.57	15308.57	22,765,711	22,765,711
Manufacturing	45.00	45.00	45.00	68,784	68,784
Office Park	9,000.00	9,000.00	9000.00	13,774,761	13,774,761
Strip Mall	1,377.30	1,377.30	1377.30	1,386,199	1,386,199
Total	25,730.87	25,730.87	25,730.87	37,995,455	37,995,455

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	4.60	4.60	4.60	26.10	29.10	44.80	86	11	3
Manufacturing	4.50	4.50	4.50	59.00	28.00	13.00	92	5	3
Office Park	4.90	4.90	4.90	33.00	48.00	19.00	82	15	3
Strip Mall	5.00	5.00	5.00	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
NaturalGas Unmitigated	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	36485	0.3935	3.3624	1.4308	0.0215		0.2719	0.2719		0.2719	0.2719		4,292.3585	4,292.3585	0.0823	0.0787	4,317.8659
Manufacturing	504.666	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3724	59.3724	1.1400e-003	1.0900e-003	59.7253
Office Park	48683.8	0.5250	4.7729	4.0093	0.0286		0.3627	0.3627		0.3627	0.3627		5,727.5101	5,727.5101	0.1098	0.1050	5,761.5458
Strip Mall	75.4504	8.1000e-004	7.4000e-003	6.2100e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8765	8.8765	1.7000e-004	1.6000e-004	8.9293
Total		**0.9247**	**8.1922**	**5.4878**	**0.0504**		**0.6389**	**0.6389**		**0.6389**	**0.6389**		**10,088.1176**	**10,088.1176**	**0.1934**	**0.1849**	**10,148.0662**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	36.485	0.3935	3.3624	1.4308	0.0215		0.2719	0.2719		0.2719	0.2719		4,292.3585	4,292.3585	0.0823	0.0787	4,317.8659
Manufacturing	0.504666	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3724	59.3724	1.1400e-003	1.0900e-003	59.7253
Office Park	48.6838	0.5250	4.7729	4.0093	0.0286		0.3627	0.3627		0.3627	0.3627		5,727.5101	5,727.5101	0.1098	0.1050	5,761.5458
Strip Mall	0.0754504	8.1000e-004	7.4000e-003	6.2100e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8765	8.8765	1.7000e-004	1.6000e-004	8.9293
Total		**0.9247**	**8.1922**	**5.4878**	**0.0504**		**0.6389**	**0.6389**		**0.6389**	**0.6389**		**10,088.1176**	**10,088.1176**	**0.1934**	**0.1849**	**10,148.0662**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Unmitigated	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	12.4621					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.9400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6835	14.3862	6.1218	0.0918		1.1631	1.1631		1.1631	1.1631	0.0000	18,365.3647	18,365.3647	0.3520	0.3367	18,474.5009
Landscaping	5.7215	2.2044	191.1012	0.0101		1.0632	1.0632		1.0632	1.0632		345.3552	345.3552	0.3292		353.5851
Total	**95.8071**	**16.5906**	**197.2230**	**0.1020**		**2.2264**	**2.2264**		**2.2264**	**2.2264**	**0.0000**	**18,710.7199**	**18,710.7199**	**0.6812**	**0.3367**	**18,828.0860**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	12.4621					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.9400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6835	14.3862	6.1218	0.0918		1.1631	1.1631		1.1631	1.1631	0.0000	18,365.3647	18,365.3647	0.3520	0.3367	18,474.5009
Landscaping	5.7215	2.2044	191.1012	0.0101		1.0632	1.0632		1.0632	1.0632		345.3552	345.3552	0.3292		353.5851
Total	**95.8071**	**16.5906**	**197.2230**	**0.1020**		**2.2264**	**2.2264**		**2.2264**	**2.2264**	**0.0000**	**18,710.7199**	**18,710.7199**	**0.6812**	**0.3367**	**18,828.0860**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Adopted LSAP - Santa Clara County, Winter

Adopted LSAP

Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,200.00	1000sqft	27.55	1,200,000.00	0
Manufacturing	9.00	1000sqft	0.21	9,000.00	0
Apartments Mid Rise	2,323.00	Dwelling Unit	61.13	2,323,000.00	5622
Strip Mall	16.60	1000sqft	0.38	16,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	76.3	**CH4 Intensity (lb/MWhr)**	0.009	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational model only

2025 Electricity intensity factors for PG&E

Land Use - Population 5,622

Construction Phase - Construction not modeled

Vehicle Trips - Adjusted based on 2016 EIR Output

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Vehicle Emission Factors - SAFE Rule applied

Woodstoves - Wood burning devices prohibited in Sunnyvale

Energy Use - 2019 Title 24 energy savings from 2016 applied.

Solid Waste - 2016 EIR rates applied

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	LightingElect	3.08	2.16
tblEnergyUse	LightingElect	3.87	2.71
tblEnergyUse	LightingElect	5.25	3.68
tblEnergyUse	T24E	332.81	156.42
tblEnergyUse	T24E	1.48	1.04
tblEnergyUse	T24E	7.28	5.10
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	5,484.45	2,577.69
tblEnergyUse	T24NG	19.71	13.80
tblEnergyUse	T24NG	21.04	14.73
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	348.45	743.36
tblFireplaces	NumberWood	394.91	0.00
tblLandUse	Population	6,644.00	5,622.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.009
tblProjectCharacteristics	CO2IntensityFactor	641.35	76.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblSolidWaste	SolidWasteGenerationRate	1,068.58	3,157.00
tblSolidWaste	SolidWasteGenerationRate	11.16	19.00
tblSolidWaste	SolidWasteGenerationRate	1,116.00	3,291.00
tblSolidWaste	SolidWasteGenerationRate	17.43	63.00

tblVehicleEF	HHD	4,009.92	4,009.92
tblVehicleEF	HHD	1,480.24	1,480.24
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tblVehicleEF	LDA	0.02	0.02

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tblVehicleEF	LDA	0.02	0.02
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tblVehicleEF	LDA	0.02	0.02
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tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT2	1.5330e-003	1.5880e-003

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tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	16.68	16.68
tblVehicleEF	MCY	171.83	171.83
tblVehicleEF	MCY	41.95	41.95
tblVehicleEF	MCY	18.39	18.39

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tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	9.2590e-003	9.3240e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.64	0.66
tblVehicleEF	MDV	0.90	0.92
tblVehicleEF	MDV	351.78	351.78
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.07	0.07

tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.54	0.55
tblVehicleEF	MDV	1.26	1.30
tblVehicleEF	MDV	323.56	323.56
tblVehicleEF	MDV	73.96	73.96
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	1.0570e-003	1.0950e-003
tblVehicleEF	MDV	1.6410e-003	1.7000e-003
tblVehicleEF	MDV	9.7300e-004	1.0080e-003
tblVehicleEF	MDV	1.5080e-003	1.5630e-003
tblVehicleEF	MDV	8.9980e-003	9.0610e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MH	1,173.30	1,173.30
tblVehicleEF	MH	56.02	56.02
tblVehicleEF	MHD	127.05	127.05
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	134.73	134.73

tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	MHD	116.80	116.80
tblVehicleEF	MHD	1,159.34	1,159.34
tblVehicleEF	MHD	60.63	60.63
tblVehicleEF	OBUS	100.58	100.58
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	105.62	105.62
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	OBUS	93.63	93.63
tblVehicleEF	OBUS	1,261.60	1,261.60
tblVehicleEF	SBUS	979.86	979.86
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.24	10.24
tblVehicleEF	SBUS	1,019.39	1,019.39
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	925.28	925.28
tblVehicleEF	SBUS	984.96	984.96
tblVehicleEF	SBUS	63.78	63.78
tblVehicleEF	SBUS	10.27	10.27
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.39	12.39
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01
tblVehicleEF	UBUS	12.31	12.31
tblVehicleEF	UBUS	1,875.79	1,875.79
tblVehicleEF	UBUS	136.01	136.01

tblVehicleTrips	CC_TL	7.30	4.50
tblVehicleTrips	CC_TL	7.30	4.90
tblVehicleTrips	CC_TL	7.30	5.00
tblVehicleTrips	CNW_TL	7.30	4.50
tblVehicleTrips	CNW_TL	7.30	4.90
tblVehicleTrips	CNW_TL	7.30	5.00
tblVehicleTrips	CW_TL	9.50	4.50
tblVehicleTrips	CW_TL	9.50	4.90
tblVehicleTrips	CW_TL	9.50	5.00
tblVehicleTrips	HO_TL	5.70	4.60
tblVehicleTrips	HO_TTP	54.00	44.80
tblVehicleTrips	HS_TL	4.80	4.60
tblVehicleTrips	HS_TTP	15.00	29.10
tblVehicleTrips	HW_TL	10.80	4.60
tblVehicleTrips	HW_TTP	31.00	26.10
tblVehicleTrips	ST_TR	6.39	6.59
tblVehicleTrips	ST_TR	1.49	5.00
tblVehicleTrips	ST_TR	1.64	7.50
tblVehicleTrips	ST_TR	42.04	82.97
tblVehicleTrips	SU_TR	5.86	6.59
tblVehicleTrips	SU_TR	0.62	5.00
tblVehicleTrips	SU_TR	0.76	7.50
tblVehicleTrips	SU_TR	20.43	82.97
tblVehicleTrips	WD_TR	6.65	6.59
tblVehicleTrips	WD_TR	3.82	5.00
tblVehicleTrips	WD_TR	11.42	7.50
tblVehicleTrips	WD_TR	44.32	82.97
tblWoodstoves	NumberCatalytic	46.46	0.00
tblWoodstoves	NumberNoncatalytic	46.46	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Energy	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
Mobile	14.6829	73.7247	157.5881	0.6477	80.3562	0.3733	80.7295	21.4433	0.3468	21.7901		65,865.9330	65,865.9330	2.0393		65,916.9143
Total	**111.4147**	**98.5075**	**360.2989**	**0.8001**	**80.3562**	**3.2386**	**83.5947**	**21.4433**	**3.2121**	**24.6554**	**0.0000**	**94,664.7705**	**94,664.7705**	**2.9138**	**0.5217**	**94,893.0665**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Energy	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
Mobile	14.6829	73.7247	157.5881	0.6477	80.3562	0.3733	80.7295	21.4433	0.3468	21.7901		65,865.9330	65,865.9330	2.0393		65,916.9143
Total	**111.4147**	**98.5075**	**360.2989**	**0.8001**	**80.3562**	**3.2386**	**83.5947**	**21.4433**	**3.2121**	**24.6554**	**0.0000**	**94,664.7705**	**94,664.7705**	**2.9138**	**0.5217**	**94,893.0665**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.6829	73.7247	157.5881	0.6477	80.3562	0.3733	80.7295	21.4433	0.3468	21.7901		65,865.9330	65,865.9330	2.0393		65,916.9143
Unmitigated	14.6829	73.7247	157.5881	0.6477	80.3562	0.3733	80.7295	21.4433	0.3468	21.7901		65,865.9330	65,865.9330	2.0393		65,916.9143

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	15,308.57	15,308.57	15308.57	22,765,711	22,765,711
Manufacturing	45.00	45.00	45.00	68,784	68,784
Office Park	9,000.00	9,000.00	9000.00	13,774,761	13,774,761
Strip Mall	1,377.30	1,377.30	1377.30	1,386,199	1,386,199
Total	25,730.87	25,730.87	25,730.87	37,995,455	37,995,455

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	4.60	4.60	4.60	26.10	29.10	44.80	86	11	3
Manufacturing	4.50	4.50	4.50	59.00	28.00	13.00	92	5	3
Office Park	4.90	4.90	4.90	33.00	48.00	19.00	82	15	3
Strip Mall	5.00	5.00	5.00	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Manufacturing	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Office Park	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641
Strip Mall	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662
NaturalGas Unmitigated	0.9247	8.1922	5.4878	0.0504		0.6389	0.6389		0.6389	0.6389		10,088.1176	10,088.1176	0.1934	0.1850	10,148.0662

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	36485	0.3935	3.3624	1.4308	0.0215		0.2719	0.2719		0.2719	0.2719		4,292.3585	4,292.3585	0.0823	0.0787	4,317.8659
Manufacturing	504.666	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3724	59.3724	1.1400e-003	1.0900e-003	59.7253
Office Park	48683.8	0.5250	4.7729	4.0093	0.0286		0.3627	0.3627		0.3627	0.3627		5,727.5101	5,727.5101	0.1098	0.1050	5,761.5458
Strip Mall	75.4504	8.1000e-004	7.4000e-003	6.2100e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8765	8.8765	1.7000e-004	1.6000e-004	8.9293
Total		**0.9247**	**8.1922**	**5.4878**	**0.0504**		**0.6389**	**0.6389**		**0.6389**	**0.6389**		**10,088.1176**	**10,088.1176**	**0.1934**	**0.1849**	**10,148.0662**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	36.485	0.3935	3.3624	1.4308	0.0215		0.2719	0.2719		0.2719	0.2719		4,292.3585	4,292.3585	0.0823	0.0787	4,317.8659
Manufacturing	0.504666	5.4400e-003	0.0495	0.0416	3.0000e-004		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003		59.3724	59.3724	1.1400e-003	1.0900e-003	59.7253
Office Park	48.6838	0.5250	4.7729	4.0093	0.0286		0.3627	0.3627		0.3627	0.3627		5,727.5101	5,727.5101	0.1098	0.1050	5,761.5458
Strip Mall	0.0754504	8.1000e-004	7.4000e-003	6.2100e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8765	8.8765	1.7000e-004	1.6000e-004	8.9293
Total		**0.9247**	**8.1922**	**5.4878**	**0.0504**		**0.6389**	**0.6389**		**0.6389**	**0.6389**		**10,088.1176**	**10,088.1176**	**0.1934**	**0.1849**	**10,148.0662**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860
Unmitigated	95.8071	16.5906	197.2230	0.1020		2.2264	2.2264		2.2264	2.2264	0.0000	18,710.7199	18,710.7199	0.6812	0.3367	18,828.0860

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	12.4621					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.9400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6835	14.3862	6.1218	0.0918		1.1631	1.1631		1.1631	1.1631	0.0000	18,365.3647	18,365.3647	0.3520	0.3367	18,474.5009
Landscaping	5.7215	2.2044	191.1012	0.0101		1.0632	1.0632		1.0632	1.0632		345.3552	345.3552	0.3292		353.5851
Total	**95.8071**	**16.5906**	**197.2230**	**0.1020**		**2.2264**	**2.2264**		**2.2264**	**2.2264**	**0.0000**	**18,710.7199**	**18,710.7199**	**0.6812**	**0.3367**	**18,828.0860**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	12.4621					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.9400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6835	14.3862	6.1218	0.0918		1.1631	1.1631		1.1631	1.1631	0.0000	18,365.3647	18,365.3647	0.3520	0.3367	18,474.5009
Landscaping	5.7215	2.2044	191.1012	0.0101		1.0632	1.0632		1.0632	1.0632		345.3552	345.3552	0.3292		353.5851
Total	**95.8071**	**16.5906**	**197.2230**	**0.1020**		**2.2264**	**2.2264**		**2.2264**	**2.2264**	**0.0000**	**18,710.7199**	**18,710.7199**	**0.6812**	**0.3367**	**18,828.0860**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ISI Proposed Project - North and South Sites

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	375.00	1000sqft	2.90	375,000.00	0
Research & Development	847.00	1000sqft	6.50	847,000.00	0
General Light Industry	12.00	1000sqft	0.28	12,000.00	0
Enclosed Parking with Elevator	395.00	1000sqft	4.50	395,000.00	0
Other Asphalt Surfaces	80.00	1000sqft	1.84	80,000.00	0
Other Asphalt Surfaces	138.00	1000sqft	3.17	138,000.00	0
Other Non-Asphalt Surfaces	361.00	1000sqft	8.29	0.00	0
Other Non-Asphalt Surfaces	155.00	1000sqft	3.56	0.00	0
Parking Lot	11.00	1000sqft	0.25	11,000.00	0
Parking Lot	18.00	1000sqft	0.41	18,000.00	0
Unenclosed Parking with Elevator	550.00	1000sqft	2.50	550,000.00	0
City Park	75.00	Acre	75.00	3,267,000.00	0
High Turnover (Sit Down Restaurant)	13.00	1000sqft	0.30	13,000.00	0
High Turnover (Sit Down Restaurant)	16.00	1000sqft	0.37	16,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				

CO2 Intensity (lb/MWhr)	160.2	**CH4 Intensity (lb/MWhr)**	0.019	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted to meet 2024 projections.

Land Use - Adjusted lots based on building levels. Other Non-asphalt surface BSF removed to not be accounted for in painting.

Construction Phase - Adjusted construction schedule includes construction of both north and south site.

Off-road Equipment - Trenching equipment added

Demolition -

Grading - Export of approximately 570,000 cubic yards (cy) of soil

Vehicle Trips - Trip rates based on ISI TIA - ITE Trip Gen Manual 10th Edition

Fleet Mix -

Energy Use -

Energy Mitigation - 2019 Title 24 standards applied

Water And Wastewater - Adjusted water use based on provided 87,512,400 gal/year project total.

Solid Waste - Adjustement based on provided data.

Stationary Sources - Emergency Generators and Fire Pumps - Two back-up generators with BAAQMD testing and maintenance limit of 50 days/year

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures Recommended for ALL Proposed Projects
Project Condition is use of Tier 4 equipment

Mobile Land Use Mitigation - Site boundary located within 0.5 miles of Lawrence Caltrain Station

Water Mitigation -

Architectural Coating -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	631500	0

tblAreaCoating	Area_Nonresidential_Interior	1894500	0
tblAreaCoating	Area_Parking	71520	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	220.00	321.00
tblConstructionPhase	NumDays	3,100.00	686.00
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDays	310.00	122.00
tblConstructionPhase	NumDays	220.00	165.00
tblConstructionPhase	NumDays	120.00	32.00
tblGrading	MaterialExported	0.00	570,000.00
tblLandUse	LandUseSquareFeet	361,000.00	0.00
tblLandUse	LandUseSquareFeet	155,000.00	0.00
tblLandUse	LotAcreage	8.61	2.90
tblLandUse	LotAcreage	19.44	6.50
tblLandUse	LotAcreage	9.07	4.50
tblLandUse	LotAcreage	12.63	2.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.2
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblSolidWaste	SolidWasteGenerationRate	6.45	0.00
tblSolidWaste	SolidWasteGenerationRate	14.88	0.00
tblSolidWaste	SolidWasteGenerationRate	348.75	1,253.00
tblSolidWaste	SolidWasteGenerationRate	345.10	0.00

tblSolidWaste	SolidWasteGenerationRate	64.37	0.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,200.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.98	0.99
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.6460e-003	7.6498e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.55	0.55
tblVehicleEF	LDA	0.78	0.78
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003

tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	8.5080e-003	8.5123e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.46	0.46
tblVehicleEF	LDA	1.15	1.16
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.4330e-003	7.4367e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDT1	0.91	0.92
tblVehicleEF	LDT1	2.05	2.06
tblVehicleEF	LDT1	0.09	0.09
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003

tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	1.06	1.06
tblVehicleEF	LDT1	1.62	1.62
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	0.90	0.90
tblVehicleEF	LDT1	2.41	2.42
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003

tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.15	0.15
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT2	0.65	0.65
tblVehicleEF	LDT2	1.32	1.32
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.76	0.77
tblVehicleEF	LDT2	1.05	1.05
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.08

tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.64	0.64
tblVehicleEF	LDT2	1.54	1.54
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	MDV	0.97	0.98
tblVehicleEF	MDV	2.43	2.44
tblVehicleEF	MDV	0.12	0.12

tblVehicleEF	MDV	0.21	0.21
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.18	0.18
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	1.14	1.15
tblVehicleEF	MDV	1.93	1.93
tblVehicleEF	MDV	0.11	0.11
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.15	0.15
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.16	0.16
tblVehicleEF	MDV	0.96	0.96
tblVehicleEF	MDV	2.84	2.85

tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.23	0.23
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.22	0.22
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	2.21
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.70
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	9.74
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	8.11	11.26
tblWater	IndoorWaterUseRate	2,775,000.00	0.00
tblWater	IndoorWaterUseRate	66,650,155.50	54,257,688.00

tblWater	IndoorWaterUseRate	8,802,477.66	0.00
tblWater	IndoorWaterUseRate	416,464,773.28	0.00
tblWater	OutdoorWaterUseRate	89,361,101.22	0.00
tblWater	OutdoorWaterUseRate	40,850,095.30	33,254,712.00
tblWater	OutdoorWaterUseRate	561,860.28	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0583	0.6166	0.3692	7.6000e-004	0.1629	0.0301	0.1930	0.0723	0.0278	0.1001	0.0000	67.8049	67.8049	0.0168	0.0000	68.2254
2021	1.7192	16.9575	13.6607	0.0590	3.2890	0.2789	3.5678	0.9351	0.2601	1.1952	0.0000	5,485.3743	5,485.3743	0.3223	0.0000	5,493.4309
2022	4.8637	20.7740	14.5779	0.0762	4.2604	0.2308	4.4912	1.1957	0.2164	1.4121	0.0000	7,144.5959	7,144.5959	0.3829	0.0000	7,154.1671
2023	5.0142	10.9121	10.4365	0.0503	3.1431	0.1603	3.3033	0.8545	0.1496	1.0041	0.0000	4,698.1385	4,698.1385	0.2721	0.0000	4,704.9397
Maximum	**5.0142**	**20.7740**	**14.5779**	**0.0762**	**4.2604**	**0.2789**	**4.4912**	**1.1957**	**0.2601**	**1.4121**	**0.0000**	**7,144.5959**	**7,144.5959**	**0.3829**	**0.0000**	**7,154.1671**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	9.6300e-003	0.0821	0.3816	7.6000e-004	0.0737	1.1500e-003	0.0749	0.0320	1.1400e-003	0.0331	0.0000	67.8048	67.8048	0.0168	0.0000	68.2254
2021	1.3465	13.2012	13.9205	0.0590	2.9325	0.0509	2.9834	0.8206	0.0486	0.8692	0.0000	5,485.3737	5,485.3737	0.3223	0.0000	5,493.4302
2022	4.5562	17.5041	14.8821	0.0762	3.7417	0.0633	3.8050	1.0386	0.0604	1.0990	0.0000	7,144.5953	7,144.5953	0.3829	0.0000	7,154.1664
2023	4.7763	8.3634	10.8699	0.0503	2.7640	0.0305	2.7945	0.7527	0.0291	0.7818	0.0000	4,698.1379	4,698.1379	0.2721	0.0000	4,704.9391
Maximum	**4.7763**	**17.5041**	**14.8821**	**0.0762**	**3.7417**	**0.0633**	**3.8050**	**1.0386**	**0.0604**	**1.0990**	**0.0000**	**7,144.5953**	**7,144.5953**	**0.3829**	**0.0000**	**7,154.1664**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.30**	**20.52**	**-2.59**	**0.00**	**12.38**	**79.16**	**16.42**	**13.53**	**78.70**	**25.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-15-2020	3-14-2021	4.5733	2.6617
2	3-15-2021	6-14-2021	4.6802	3.7534
3	6-15-2021	9-14-2021	4.6651	3.7383
4	9-15-2021	12-14-2021	4.5727	3.7540
5	12-15-2021	3-14-2022	4.0144	3.5278
6	3-15-2022	6-14-2022	3.9913	3.5063
7	6-15-2022	9-14-2022	5.8211	5.2065
8	9-15-2022	12-14-2022	10.6869	8.9118

9	**12-15-2022**	**3-14-2023**	8.1519	6.7365
10	**3-15-2023**	**6-14-2023**	5.0656	4.2654
11	**6-15-2023**	**9-14-2023**	4.4946	3.7564
12	**9-15-2023**	**9-30-2023**	0.0650	0.0094
		Highest	10.6869	8.9118

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0430	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580
Energy	0.1878	1.7072	1.4341	0.0102		0.1298	0.1298		0.1298	0.1298	0.0000	3,175.4056	3,175.4056	0.1918	0.0505	3,195.2537
Mobile	2.0333	7.9247	24.5579	0.0921	9.1444	0.0721	9.2164	2.4476	0.0671	2.5147	0.0000	8,447.2249	8,447.2249	0.2592	0.0000	8,453.7046
Stationary	0.0985	0.4403	0.2511	4.7000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	45.6957	45.6957	6.4100e-003	0.0000	45.8558
Waste						0.0000	0.0000		0.0000	0.0000	254.3477	0.0000	254.3477	15.0315	0.0000	630.1356
Water						0.0000	0.0000		0.0000	0.0000	17.2135	29.7914	47.0049	1.7715	0.0421	103.8440
Total	**7.3626**	**10.0726**	**26.2710**	**0.1029**	**9.1444**	**0.2164**	**9.3608**	**2.4476**	**0.2114**	**2.6590**	**271.5611**	**11,698.1720**	**11,969.7331**	**17.2606**	**0.0926**	**12,428.8518**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0430	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580
Energy	0.1477	1.3426	1.1277	8.0600e-003		0.1020	0.1020		0.1020	0.1020	0.0000	2,429.2076	2,429.2076	0.1428	0.0389	2,444.3620
Mobile	1.9770	7.6120	23.0997	0.0854	8.4276	0.0672	8.4947	2.2557	0.0625	2.3182	0.0000	7,829.7032	7,829.7032	0.2437	0.0000	7,835.7945
Stationary	0.0985	0.4403	0.2511	4.7000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	45.6957	45.6957	6.4100e-003	0.0000	45.8558
Waste						0.0000	0.0000		0.0000	0.0000	254.3477	0.0000	254.3477	15.0315	0.0000	630.1356
Water						0.0000	0.0000		0.0000	0.0000	13.7708	25.0087	38.7795	1.4174	0.0337	84.2587
Total	**7.2662**	**9.3951**	**24.5064**	**0.0939**	**8.4276**	**0.1838**	**8.6113**	**2.2557**	**0.1791**	**2.4348**	**268.1185**	**10,329.6696**	**10,597.7881**	**16.8419**	**0.0726**	**11,040.4646**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.31**	**6.73**	**6.72**	**8.67**	**7.84**	**15.08**	**8.01**	**7.84**	**15.27**	**8.43**	**1.27**	**11.70**	**11.46**	**2.43**	**21.63**	**11.17**

3.0 Construction Detail

Construction Phase

ISI Proposed Project - North and South Sites - Santa Clara County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2020	1/27/2021	5	32	
2	Site Preparation	Site Preparation	12/15/2020	1/27/2021	5	32	
3	Trenching	Trenching	12/16/2020	11/20/2021	5	243	
4	Building Construction	Building Construction	1/15/2021	9/1/2023	5	686	
5	Architectural Coating	Architectural Coating	6/16/2022	9/7/2023	5	321	
6	Grading	Grading	9/9/2022	2/27/2023	5	122	
7	Paving	Paving	3/16/2023	11/1/2023	5	165	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 305

Acres of Paving: 24.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,894,500; Non-Residential Outdoor: 631,500; Striped Parking Area: 71,520 (Architectural Coating – sqft)

OffRoad Equipment

ISI Proposed Project - North and South Sites - Santa Clara County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Trenchers	2	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	846.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	2,281.00	938.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	456.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	56,359.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0372	0.0000	0.0372	5.6300e-003	0.0000	5.6300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0215	0.2158	0.1414	2.5000e-004		0.0108	0.0108		0.0100	0.0100	0.0000	22.0991	22.0991	6.2400e-003	0.0000	22.2551
Total	**0.0215**	**0.2158**	**0.1414**	**2.5000e-004**	**0.0372**	**0.0108**	**0.0480**	**5.6300e-003**	**0.0100**	**0.0157**	**0.0000**	**22.0991**	**22.0991**	**6.2400e-003**	**0.0000**	**22.2551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4300e-003	0.0499	0.0102	1.4000e-004	6.1000e-003	1.6000e-004	6.2600e-003	1.5800e-003	1.5000e-004	1.7400e-003	0.0000	13.1067	13.1067	6.0000e-004	0.0000	13.1217
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4400e-003	1.0000e-005	7.7000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6632	0.6632	2.0000e-005	0.0000	0.6636
Total	**1.7500e-003**	**0.0501**	**0.0127**	**1.5000e-004**	**6.8700e-003**	**1.6000e-004**	**7.0400e-003**	**1.7900e-003**	**1.5000e-004**	**1.9500e-003**	**0.0000**	**13.7698**	**13.7698**	**6.2000e-004**	**0.0000**	**13.7852**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0159	0.0000	0.0159	2.4100e-003	0.0000	2.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-003	0.0130	0.1513	2.5000e-004		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	22.0991	22.0991	6.2400e-003	0.0000	22.2550
Total	**3.0000e-003**	**0.0130**	**0.1513**	**2.5000e-004**	**0.0159**	**4.0000e-004**	**0.0163**	**2.4100e-003**	**4.0000e-004**	**2.8100e-003**	**0.0000**	**22.0991**	**22.0991**	**6.2400e-003**	**0.0000**	**22.2550**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4300e-003	0.0499	0.0102	1.4000e-004	5.6200e-003	1.6000e-004	5.7800e-003	1.4600e-003	1.5000e-004	1.6200e-003	0.0000	13.1067	13.1067	6.0000e-004	0.0000	13.1217
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6632	0.6632	2.0000e-005	0.0000	0.6636
Total	**1.7500e-003**	**0.0501**	**0.0127**	**1.5000e-004**	**6.3300e-003**	**1.6000e-004**	**6.5000e-003**	**1.6500e-003**	**1.5000e-004**	**1.8200e-003**	**0.0000**	**13.7698**	**13.7698**	**6.2000e-004**	**0.0000**	**13.7852**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0544	0.0000	0.0544	8.2300e-003	0.0000	8.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0301	0.2987	0.2049	3.7000e-004		0.0147	0.0147		0.0137	0.0137	0.0000	32.3008	32.3008	9.0900e-003	0.0000	32.5280
Total	**0.0301**	**0.2987**	**0.2049**	**3.7000e-004**	**0.0544**	**0.0147**	**0.0691**	**8.2300e-003**	**0.0137**	**0.0219**	**0.0000**	**32.3008**	**32.3008**	**9.0900e-003**	**0.0000**	**32.5280**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9700e-003	0.0672	0.0146	2.0000e-004	6.4400e-003	2.1000e-004	6.6500e-003	1.7100e-003	2.0000e-004	1.9100e-003	0.0000	18.9129	18.9129	8.6000e-004	0.0000	18.9344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.0000e-004	3.2600e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9356	0.9356	2.0000e-005	0.0000	0.9361
Total	**2.4100e-003**	**0.0675**	**0.0179**	**2.1000e-004**	**7.5700e-003**	**2.2000e-004**	**7.7900e-003**	**2.0100e-003**	**2.1000e-004**	**2.2200e-003**	**0.0000**	**19.8485**	**19.8485**	**8.8000e-004**	**0.0000**	**19.8705**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0232	0.0000	0.0232	3.5200e-003	0.0000	3.5200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3900e-003	0.0190	0.2212	3.7000e-004		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	32.3007	32.3007	9.0900e-003	0.0000	32.5280
Total	**4.3900e-003**	**0.0190**	**0.2212**	**3.7000e-004**	**0.0232**	**5.9000e-004**	**0.0238**	**3.5200e-003**	**5.9000e-004**	**4.1100e-003**	**0.0000**	**32.3007**	**32.3007**	**9.0900e-003**	**0.0000**	**32.5280**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9700e-003	0.0672	0.0146	2.0000e-004	5.9600e-003	2.1000e-004	6.1700e-003	1.5900e-003	2.0000e-004	1.7900e-003	0.0000	18.9129	18.9129	8.6000e-004	0.0000	18.9344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.0000e-004	3.2600e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9356	0.9356	2.0000e-005	0.0000	0.9361
Total	**2.4100e-003**	**0.0675**	**0.0179**	**2.1000e-004**	**7.0000e-003**	**2.2000e-004**	**7.2200e-003**	**1.8700e-003**	**2.1000e-004**	**2.0800e-003**	**0.0000**	**19.8485**	**19.8485**	**8.8000e-004**	**0.0000**	**19.8705**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1174	0.0000	0.1174	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2757	0.1398	2.5000e-004		0.0143	0.0143		0.0131	0.0131	0.0000	21.7299	21.7299	7.0300e-003	0.0000	21.9056
Total	**0.0265**	**0.2757**	**0.1398**	**2.5000e-004**	**0.1174**	**0.0143**	**0.1317**	**0.0646**	**0.0131**	**0.0777**	**0.0000**	**21.7299**	**21.7299**	**7.0300e-003**	**0.0000**	**21.9056**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.8000e-004	2.9300e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.3000e-004	2.5000e-004	1.0000e-005	2.5000e-004	0.0000	0.7958	0.7958	2.0000e-005	0.0000	0.7963
Total	**3.9000e-004**	**2.8000e-004**	**2.9300e-003**	**1.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.3000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7958**	**0.7958**	**2.0000e-005**	**0.0000**	**0.7963**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0502	0.0000	0.0502	0.0276	0.0000	0.0276	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0300e-003	0.0131	0.1357	2.5000e-004		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	21.7299	21.7299	7.0300e-003	0.0000	21.9056
Total	**3.0300e-003**	**0.0131**	**0.1357**	**2.5000e-004**	**0.0502**	**4.0000e-004**	**0.0506**	**0.0276**	**4.0000e-004**	**0.0280**	**0.0000**	**21.7299**	**21.7299**	**7.0300e-003**	**0.0000**	**21.9056**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.8000e-004	2.9300e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.7958	0.7958	2.0000e-005	0.0000	0.7963
Total	**3.9000e-004**	**2.8000e-004**	**2.9300e-003**	**1.0000e-005**	**8.6000e-004**	**1.0000e-005**	**8.6000e-004**	**2.3000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7958**	**0.7958**	**2.0000e-005**	**0.0000**	**0.7963**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1716	0.0000	0.1716	0.0943	0.0000	0.0943	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0369	0.3847	0.2010	3.6000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	31.7639	31.7639	0.0103	0.0000	32.0208
Total	**0.0369**	**0.3847**	**0.2010**	**3.6000e-004**	**0.1716**	**0.0194**	**0.1911**	**0.0943**	**0.0179**	**0.1122**	**0.0000**	**31.7639**	**31.7639**	**0.0103**	**0.0000**	**32.0208**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	3.9100e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1227	1.1227	3.0000e-005	0.0000	1.1233
Total	**5.3000e-004**	**3.6000e-004**	**3.9100e-003**	**1.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3600e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1227**	**1.1227**	**3.0000e-005**	**0.0000**	**1.1233**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0734	0.0000	0.0734	0.0403	0.0000	0.0403	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4200e-003	0.0192	0.1983	3.6000e-004		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	31.7639	31.7639	0.0103	0.0000	32.0207
Total	**4.4200e-003**	**0.0192**	**0.1983**	**3.6000e-004**	**0.0734**	**5.9000e-004**	**0.0740**	**0.0403**	**5.9000e-004**	**0.0409**	**0.0000**	**31.7639**	**31.7639**	**0.0103**	**0.0000**	**32.0207**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	3.9100e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1227	1.1227	3.0000e-005	0.0000	1.1233
Total	**5.3000e-004**	**3.6000e-004**	**3.9100e-003**	**1.0000e-005**	**1.2500e-003**	**1.0000e-005**	**1.2600e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1227**	**1.1227**	**3.0000e-005**	**0.0000**	**1.1233**

3.4 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9800e-003	0.0745	0.0709	1.0000e-004		4.8100e-003	4.8100e-003		4.4300e-003	4.4300e-003	0.0000	9.0021	9.0021	2.9100e-003	0.0000	9.0749
Total	**7.9800e-003**	**0.0745**	**0.0709**	**1.0000e-004**		**4.8100e-003**	**4.8100e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**9.0021**	**9.0021**	**2.9100e-003**	**0.0000**	**9.0749**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

3.4 Trenching - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2600e-003	5.4500e-003	0.0776	1.0000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	9.0021	9.0021	2.9100e-003	0.0000	9.0749
Total	**1.2600e-003**	**5.4500e-003**	**0.0776**	**1.0000e-004**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**9.0021**	**9.0021**	**2.9100e-003**	**0.0000**	**9.0749**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1413	1.3087	1.3579	1.9700e-003		0.0830	0.0830		0.0764	0.0764	0.0000	173.3298	173.3298	0.0561	0.0000	174.7313
Total	**0.1413**	**1.3087**	**1.3579**	**1.9700e-003**		**0.0830**	**0.0830**		**0.0764**	**0.0764**	**0.0000**	**173.3298**	**173.3298**	**0.0561**	**0.0000**	**174.7313**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	2.4600e-003	0.0264	8.0000e-005	9.1600e-003	6.0000e-005	9.2200e-003	2.4400e-003	5.0000e-005	2.4900e-003	0.0000	7.5831	7.5831	1.7000e-004	0.0000	7.5874
Total	**3.5600e-003**	**2.4600e-003**	**0.0264**	**8.0000e-005**	**9.1600e-003**	**6.0000e-005**	**9.2200e-003**	**2.4400e-003**	**5.0000e-005**	**2.4900e-003**	**0.0000**	**7.5831**	**7.5831**	**1.7000e-004**	**0.0000**	**7.5874**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.1049	1.4930	1.9700e-003		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	173.3296	173.3296	0.0561	0.0000	174.7311
Total	**0.0242**	**0.1049**	**1.4930**	**1.9700e-003**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**173.3296**	**173.3296**	**0.0561**	**0.0000**	**174.7311**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	2.4600e-003	0.0264	8.0000e-005	8.4500e-003	6.0000e-005	8.5100e-003	2.2600e-003	5.0000e-005	2.3100e-003	0.0000	7.5831	7.5831	1.7000e-004	0.0000	7.5874
Total	**3.5600e-003**	**2.4600e-003**	**0.0264**	**8.0000e-005**	**8.4500e-003**	**6.0000e-005**	**8.5100e-003**	**2.2600e-003**	**5.0000e-005**	**2.3100e-003**	**0.0000**	**7.5831**	**7.5831**	**1.7000e-004**	**0.0000**	**7.5874**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2386	2.1877	2.0802	3.3800e-003		0.1203	0.1203		0.1131	0.1131	0.0000	290.7048	290.7048	0.0701	0.0000	292.4581
Total	**0.2386**	**2.1877**	**2.0802**	**3.3800e-003**		**0.1203**	**0.1203**		**0.1131**	**0.1131**	**0.0000**	**290.7048**	**290.7048**	**0.0701**	**0.0000**	**292.4581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3839	12.0968	3.2201	0.0318	0.7745	0.0268	0.8013	0.2239	0.0257	0.2496	0.0000	3,049.2681	3,049.2681	0.1329	0.0000	3,052.5902
Worker	0.8819	0.6106	6.5485	0.0208	2.2704	0.0143	2.2847	0.6038	0.0132	0.6170	0.0000	1,879.4527	1,879.4527	0.0427	0.0000	1,880.5213
Total	**1.2658**	**12.7074**	**9.7686**	**0.0526**	**3.0449**	**0.0411**	**3.0860**	**0.8277**	**0.0388**	**0.8665**	**0.0000**	**4,928.7208**	**4,928.7208**	**0.1756**	**0.0000**	**4,933.1115**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0411	0.2805	2.1913	3.3800e-003		5.1200e-003	5.1200e-003		5.1200e-003	5.1200e-003	0.0000	290.7044	290.7044	0.0701	0.0000	292.4578
Total	**0.0411**	**0.2805**	**2.1913**	**3.3800e-003**		**5.1200e-003**	**5.1200e-003**		**5.1200e-003**	**5.1200e-003**	**0.0000**	**290.7044**	**290.7044**	**0.0701**	**0.0000**	**292.4578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3839	12.0968	3.2201	0.0318	0.7254	0.0268	0.7522	0.2119	0.0257	0.2375	0.0000	3,049.2681	3,049.2681	0.1329	0.0000	3,052.5902
Worker	0.8819	0.6106	6.5485	0.0208	2.0938	0.0143	2.1081	0.5605	0.0132	0.5736	0.0000	1,879.4527	1,879.4527	0.0427	0.0000	1,880.5213
Total	**1.2658**	**12.7074**	**9.7686**	**0.0526**	**2.8191**	**0.0411**	**2.8603**	**0.7723**	**0.0388**	**0.8111**	**0.0000**	**4,928.7208**	**4,928.7208**	**0.1756**	**0.0000**	**4,933.1115**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3711	11.8449	3.1415	0.0326	0.8023	0.0242	0.8264	0.2320	0.0231	0.2551	0.0000	3,128.3861	3,128.3861	0.1314	0.0000	3,131.6720
Worker	0.8526	0.5674	6.2347	0.0207	2.3518	0.0145	2.3663	0.6255	0.0133	0.6388	0.0000	1,876.1268	1,876.1268	0.0397	0.0000	1,877.1195
Total	**1.2236**	**12.4124**	**9.3762**	**0.0533**	**3.1541**	**0.0386**	**3.1927**	**0.8574**	**0.0364**	**0.8939**	**0.0000**	**5,004.5129**	**5,004.5129**	**0.1711**	**0.0000**	**5,008.7914**

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0426	0.2905	2.2698	3.5000e-003		5.3000e-003	5.3000e-003		5.3000e-003	5.3000e-003	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.0426**	**0.2905**	**2.2698**	**3.5000e-003**		**5.3000e-003**	**5.3000e-003**		**5.3000e-003**	**5.3000e-003**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3711	11.8449	3.1415	0.0326	0.7514	0.0242	0.7756	0.2195	0.0231	0.2426	0.0000	3,128.3861	3,128.3861	0.1314	0.0000	3,131.6720
Worker	0.8526	0.5674	6.2347	0.0207	2.1689	0.0145	2.1833	0.5806	0.0133	0.5939	0.0000	1,876.1268	1,876.1268	0.0397	0.0000	1,877.1195
Total	**1.2236**	**12.4124**	**9.3762**	**0.0533**	**2.9203**	**0.0386**	**2.9589**	**0.8000**	**0.0364**	**0.8365**	**0.0000**	**5,004.5129**	**5,004.5129**	**0.1711**	**0.0000**	**5,008.7914**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1376	1.2587	1.4214	2.3600e-003		0.0612	0.0612		0.0576	0.0576	0.0000	202.8292	202.8292	0.0483	0.0000	204.0354
Total	**0.1376**	**1.2587**	**1.4214**	**2.3600e-003**		**0.0612**	**0.0612**		**0.0576**	**0.0576**	**0.0000**	**202.8292**	**202.8292**	**0.0483**	**0.0000**	**204.0354**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1882	6.0421	1.8992	0.0213	0.5400	7.0600e-003	0.5471	0.1561	6.7400e-003	0.1629	0.0000	2,045.7785	2,045.7785	0.0753	0.0000	2,047.6614
Worker	0.5373	0.3435	3.8610	0.0134	1.5830	9.5500e-003	1.5925	0.4210	8.7900e-003	0.4298	0.0000	1,214.8106	1,214.8106	0.0240	0.0000	1,215.4095
Total	**0.7255**	**6.3856**	**5.7602**	**0.0347**	**2.1230**	**0.0166**	**2.1396**	**0.5771**	**0.0155**	**0.5927**	**0.0000**	**3,260.5890**	**3,260.5890**	**0.0993**	**0.0000**	**3,263.0709**

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0287	0.1955	1.5278	2.3600e-003		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	202.8289	202.8289	0.0483	0.0000	204.0352
Total	**0.0287**	**0.1955**	**1.5278**	**2.3600e-003**		**3.5700e-003**	**3.5700e-003**		**3.5700e-003**	**3.5700e-003**	**0.0000**	**202.8289**	**202.8289**	**0.0483**	**0.0000**	**204.0352**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1882	6.0421	1.8992	0.0213	0.5058	7.0600e-003	0.5129	0.1477	6.7400e-003	0.1545	0.0000	2,045.7785	2,045.7785	0.0753	0.0000	2,047.6614
Worker	0.5373	0.3435	3.8610	0.0134	1.4598	9.5500e-003	1.4694	0.3908	8.7900e-003	0.3996	0.0000	1,214.8106	1,214.8106	0.0240	0.0000	1,215.4095
Total	**0.7255**	**6.3856**	**5.7602**	**0.0347**	**1.9656**	**0.0166**	**1.9822**	**0.5385**	**0.0155**	**0.5540**	**0.0000**	**3,260.5890**	**3,260.5890**	**0.0993**	**0.0000**	**3,263.0709**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1000	0.1288	2.1000e-004		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	18.1281	18.1281	1.1800e-003	0.0000	18.1576
Total	**3.0378**	**0.1000**	**0.1288**	**2.1000e-004**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**	**0.0000**	**18.1281**	**18.1281**	**1.1800e-003**	**0.0000**	**18.1576**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0931	0.0620	0.6807	2.2600e-003	0.2568	1.5800e-003	0.2584	0.0683	1.4500e-003	0.0698	0.0000	204.8409	204.8409	4.3400e-003	0.0000	204.9493
Total	**0.0931**	**0.0620**	**0.6807**	**2.2600e-003**	**0.2568**	**1.5800e-003**	**0.2584**	**0.0683**	**1.4500e-003**	**0.0698**	**0.0000**	**204.8409**	**204.8409**	**4.3400e-003**	**0.0000**	**204.9493**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	9.1400e-003	0.1301	2.1000e-004		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	18.1281	18.1281	1.1800e-003	0.0000	18.1576
Total	**3.0254**	**9.1400e-003**	**0.1301**	**2.1000e-004**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**18.1281**	**18.1281**	**1.1800e-003**	**0.0000**	**18.1576**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0931	0.0620	0.6807	2.2600e-003	0.2368	1.5800e-003	0.2384	0.0634	1.4500e-003	0.0648	0.0000	204.8409	204.8409	4.3400e-003	0.0000	204.9493
Total	**0.0931**	**0.0620**	**0.6807**	**2.2600e-003**	**0.2368**	**1.5800e-003**	**0.2384**	**0.0634**	**1.4500e-003**	**0.0648**	**0.0000**	**204.8409**	**204.8409**	**4.3400e-003**	**0.0000**	**204.9493**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.8111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1166	0.1621	2.7000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003	0.0000	22.8516	22.8516	1.3700e-003	0.0000	22.8858
Total	**3.8282**	**0.1166**	**0.1621**	**2.7000e-004**		**6.3400e-003**	**6.3400e-003**		**6.3400e-003**	**6.3400e-003**	**0.0000**	**22.8516**	**22.8516**	**1.3700e-003**	**0.0000**	**22.8858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1099	0.0702	0.7895	2.7500e-003	0.3237	1.9500e-003	0.3256	0.0861	1.8000e-003	0.0879	0.0000	248.4066	248.4066	4.9000e-003	0.0000	248.5291
Total	**0.1099**	**0.0702**	**0.7895**	**2.7500e-003**	**0.3237**	**1.9500e-003**	**0.3256**	**0.0861**	**1.8000e-003**	**0.0879**	**0.0000**	**248.4066**	**248.4066**	**4.9000e-003**	**0.0000**	**248.5291**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.8111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0115	0.1640	2.7000e-004		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	22.8516	22.8516	1.3700e-003	0.0000	22.8858
Total	**3.8137**	**0.0115**	**0.1640**	**2.7000e-004**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**22.8516**	**22.8516**	**1.3700e-003**	**0.0000**	**22.8858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1099	0.0702	0.7895	2.7500e-003	0.2985	1.9500e-003	0.3005	0.0799	1.8000e-003	0.0817	0.0000	248.4066	248.4066	4.9000e-003	0.0000	248.5291
Total	**0.1099**	**0.0702**	**0.7895**	**2.7500e-003**	**0.2985**	**1.9500e-003**	**0.3005**	**0.0799**	**1.8000e-003**	**0.0817**	**0.0000**	**248.4066**	**248.4066**	**4.9000e-003**	**0.0000**	**248.5291**

3.7 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4056	0.0000	0.4056	0.1515	0.0000	0.1515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1468	1.5732	1.1762	2.5100e-003		0.0662	0.0662		0.0609	0.0609	0.0000	220.8651	220.8651	0.0714	0.0000	222.6509
Total	**0.1468**	**1.5732**	**1.1762**	**2.5100e-003**	**0.4056**	**0.0662**	**0.4718**	**0.1515**	**0.0609**	**0.2125**	**0.0000**	**220.8651**	**220.8651**	**0.0714**	**0.0000**	**222.6509**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1382	4.5950	1.0717	0.0143	0.4375	0.0134	0.4509	0.1168	0.0128	0.1295	0.0000	1,389.8812	1,389.8812	0.0625	0.0000	1,391.4432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3300e-003	1.5500e-003	0.0170	6.0000e-005	6.4200e-003	4.0000e-005	6.4600e-003	1.7100e-003	4.0000e-005	1.7400e-003	0.0000	5.1248	5.1248	1.1000e-004	0.0000	5.1275
Total	**0.1406**	**4.5965**	**1.0887**	**0.0144**	**0.4439**	**0.0134**	**0.4573**	**0.1185**	**0.0128**	**0.1313**	**0.0000**	**1,395.0061**	**1,395.0061**	**0.0626**	**0.0000**	**1,396.5708**

3.7 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1734	0.0000	0.1734	0.0648	0.0000	0.0648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.1337	1.3365	2.5100e-003		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003	0.0000	220.8649	220.8649	0.0714	0.0000	222.6507
Total	**0.0308**	**0.1337**	**1.3365**	**2.5100e-003**	**0.1734**	**4.1100e-003**	**0.1775**	**0.0648**	**4.1100e-003**	**0.0689**	**0.0000**	**220.8649**	**220.8649**	**0.0714**	**0.0000**	**222.6507**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1382	4.5950	1.0717	0.0143	0.4053	0.0134	0.4187	0.1088	0.0128	0.1216	0.0000	1,389.8812	1,389.8812	0.0625	0.0000	1,391.4432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3300e-003	1.5500e-003	0.0170	6.0000e-005	5.9200e-003	4.0000e-005	5.9600e-003	1.5900e-003	4.0000e-005	1.6200e-003	0.0000	5.1248	5.1248	1.1000e-004	0.0000	5.1275
Total	**0.1406**	**4.5965**	**1.0887**	**0.0144**	**0.4112**	**0.0134**	**0.4246**	**0.1104**	**0.0128**	**0.1233**	**0.0000**	**1,395.0061**	**1,395.0061**	**0.0626**	**0.0000**	**1,396.5708**

3.7 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2852	0.0000	0.2852	0.0853	0.0000	0.0853	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0681	0.7076	0.5751	1.2700e-003		0.0292	0.0292		0.0269	0.0269	0.0000	111.7972	111.7972	0.0362	0.0000	112.7011
Total	**0.0681**	**0.7076**	**0.5751**	**1.2700e-003**	**0.2852**	**0.0292**	**0.3144**	**0.0853**	**0.0269**	**0.1122**	**0.0000**	**111.7972**	**111.7972**	**0.0362**	**0.0000**	**112.7011**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0479	1.5298	0.4932	6.9700e-003	0.3981	2.7700e-003	0.4009	0.1025	2.6500e-003	0.1051	0.0000	676.4156	676.4156	0.0285	0.0000	677.1273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	7.1000e-004	7.9300e-003	3.0000e-005	3.2500e-003	2.0000e-005	3.2700e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.4955	2.4955	5.0000e-005	0.0000	2.4967
Total	**0.0490**	**1.5305**	**0.5011**	**7.0000e-003**	**0.4014**	**2.7900e-003**	**0.4042**	**0.1033**	**2.6700e-003**	**0.1060**	**0.0000**	**678.9111**	**678.9111**	**0.0285**	**0.0000**	**679.6240**

3.7 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1219	0.0000	0.1219	0.0365	0.0000	0.0365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0156	0.0677	0.6765	1.2700e-003		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	111.7970	111.7970	0.0362	0.0000	112.7010
Total	**0.0156**	**0.0677**	**0.6765**	**1.2700e-003**	**0.1219**	**2.0800e-003**	**0.1240**	**0.0365**	**2.0800e-003**	**0.0386**	**0.0000**	**111.7970**	**111.7970**	**0.0362**	**0.0000**	**112.7010**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0479	1.5298	0.4932	6.9700e-003	0.3659	2.7700e-003	0.3687	0.0946	2.6500e-003	0.0972	0.0000	676.4156	676.4156	0.0285	0.0000	677.1273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	7.1000e-004	7.9300e-003	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.4955	2.4955	5.0000e-005	0.0000	2.4967
Total	**0.0490**	**1.5305**	**0.5011**	**7.0000e-003**	**0.3689**	**2.7900e-003**	**0.3717**	**0.0954**	**2.6700e-003**	**0.0980**	**0.0000**	**678.9111**	**678.9111**	**0.0285**	**0.0000**	**679.6240**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0852	0.8408	1.2032	1.8800e-003		0.0421	0.0421		0.0387	0.0387	0.0000	165.2217	165.2217	0.0534	0.0000	166.5576
Paving	7.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0926**	**0.8408**	**1.2032**	**1.8800e-003**		**0.0421**	**0.0421**		**0.0387**	**0.0387**	**0.0000**	**165.2217**	**165.2217**	**0.0534**	**0.0000**	**166.5576**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3300e-003	2.1300e-003	0.0239	8.0000e-005	9.8100e-003	6.0000e-005	9.8700e-003	2.6100e-003	5.0000e-005	2.6600e-003	0.0000	7.5322	7.5322	1.5000e-004	0.0000	7.5359
Total	**3.3300e-003**	**2.1300e-003**	**0.0239**	**8.0000e-005**	**9.8100e-003**	**6.0000e-005**	**9.8700e-003**	**2.6100e-003**	**5.0000e-005**	**2.6600e-003**	**0.0000**	**7.5322**	**7.5322**	**1.5000e-004**	**0.0000**	**7.5359**

3.8 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0231	0.1003	1.4269	1.8800e-003		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	165.2215	165.2215	0.0534	0.0000	166.5574
Paving	7.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0306**	**0.1003**	**1.4269**	**1.8800e-003**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**165.2215**	**165.2215**	**0.0534**	**0.0000**	**166.5574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3300e-003	2.1300e-003	0.0239	8.0000e-005	9.0500e-003	6.0000e-005	9.1100e-003	2.4200e-003	5.0000e-005	2.4800e-003	0.0000	7.5322	7.5322	1.5000e-004	0.0000	7.5359
Total	**3.3300e-003**	**2.1300e-003**	**0.0239**	**8.0000e-005**	**9.0500e-003**	**6.0000e-005**	**9.1100e-003**	**2.4200e-003**	**5.0000e-005**	**2.4800e-003**	**0.0000**	**7.5322**	**7.5322**	**1.5000e-004**	**0.0000**	**7.5359**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9770	7.6120	23.0997	0.0854	8.4276	0.0672	8.4947	2.2557	0.0625	2.3182	0.0000	7,829.7032	7,829.7032	0.2437	0.0000	7,835.7945
Unmitigated	2.0333	7.9247	24.5579	0.0921	9.1444	0.0721	9.2164	2.4476	0.0671	2.5147	0.0000	8,447.2249	8,447.2249	0.2592	0.0000	8,453.7046

4.2 Trip Summary Information

ISI Proposed Project - North and South Sites - Santa Clara County, Annual

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	3,652.50	828.75	262.50	6,607,240	6,089,298
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Research & Development	9,537.22	1,609.30	940.17	17,986,109	16,576,178
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	13,189.72	2,438.05	1,202.67	24,593,349	22,665,477

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Light Industry	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Office Building	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
High Turnover (Sit Down Restaurant)	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Non-Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Research & Development	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Unenclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	967.6806	967.6806	0.1148	0.0121	974.1499
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,316.8674	1,316.8674	0.1562	0.0164	1,325.6712
NaturalGas Mitigated	0.1477	1.3426	1.1277	8.0600e-003		0.1020	0.1020		0.1020	0.1020	0.0000	1,461.5270	1,461.5270	0.0280	0.0268	1,470.2121
NaturalGas Unmitigated	0.1878	1.7072	1.4341	0.0102		0.1298	0.1298		0.1298	0.1298	0.0000	1,858.5382	1,858.5382	0.0356	0.0341	1,869.5825

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	316560	1.7100e-003	0.0155	0.0130	9.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	16.8929	16.8929	3.2000e-004	3.1000e-004	16.9932
General Office Building	6.13875e+006	0.0331	0.3009	0.2528	1.8100e-003		0.0229	0.0229		0.0229	0.0229	0.0000	327.5871	327.5871	6.2800e-003	6.0100e-003	329.5338
High Turnover (Sit Down Restaurant)	2.70244e+006	0.0146	0.1325	0.1113	7.9000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	144.2125	144.2125	2.7600e-003	2.6400e-003	145.0695
High Turnover (Sit Down Restaurant)	3.32608e+006	0.0179	0.1630	0.1370	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	177.4923	177.4923	3.4000e-003	3.2500e-003	178.5470
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	2.23439e+007	0.1205	1.0953	0.9200	6.5700e-003		0.0832	0.0832		0.0832	0.0832	0.0000	1,192.3535	1,192.3535	0.0229	0.0219	1,199.4390
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1878**	**1.7072**	**1.4341**	**0.0102**		**0.1298**	**0.1298**		**0.1298**	**0.1298**	**0.0000**	**1,858.5382**	**1,858.5382**	**0.0356**	**0.0341**	**1,869.5825**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	245604	1.3200e-003	0.0120	0.0101	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	13.1064	13.1064	2.5000e-004	2.4000e-004	13.1843
General Office Building	4.30387e+006	0.0232	0.2110	0.1772	1.2700e-003		0.0160	0.0160		0.0160	0.0160	0.0000	229.6712	229.6712	4.4000e-003	4.2100e-003	231.0360
High Turnover (Sit Down Restaurant)	2.46684e+006	0.0133	0.1209	0.1016	7.3000e-004		9.1900e-003	9.1900e-003		9.1900e-003	9.1900e-003	0.0000	131.6400	131.6400	2.5200e-003	2.4100e-003	132.4223
High Turnover (Sit Down Restaurant)	3.03611e+006	0.0164	0.1488	0.1250	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.0185	162.0185	3.1100e-003	2.9700e-003	162.9813
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.73355e+007	0.0935	0.8498	0.7138	5.1000e-003		0.0646	0.0646		0.0646	0.0646	0.0000	925.0909	925.0909	0.0177	0.0170	930.5883
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1477**	**1.3425**	**1.1278**	**8.0600e-003**		**0.1020**	**0.1020**		**0.1020**	**0.1020**	**0.0000**	**1,461.5270**	**1,461.5270**	**0.0280**	**0.0268**	**1,470.2121**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	2.3147e+006	168.1988	0.0200	2.1000e-003	169.3233
General Light Industry	99120	7.2026	8.5000e-004	9.0000e-005	7.2508
General Office Building	6.68625e+006	485.8597	0.0576	6.0700e-003	489.1079
High Turnover (Sit Down Restaurant)	425360	30.9090	3.6700e-003	3.9000e-004	31.1156
High Turnover (Sit Down Restaurant)	523520	38.0418	4.5100e-003	4.7000e-004	38.2962
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3850	0.2798	3.0000e-005	0.0000	0.2816
Parking Lot	6300	0.4578	5.0000e-005	1.0000e-005	0.4609
Research & Development	6.99622e+006	508.3838	0.0603	6.3500e-003	511.7826
Unenclosed Parking with Elevator	1.067e+006	77.5341	9.2000e-003	9.7000e-004	78.0524
Total		**1,316.8674**	**0.1562**	**0.0165**	**1,325.6712**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	-230571	-16.7546	-0.0020	-0.0002	-16.8666
Enclosed Parking with Elevator	1.61961e+006	117.6897	0.0140	1.4700e-003	118.4765
General Light Industry	-136779	-9.9392	-0.0012	-0.0001	-10.0056
General Office Building	5.7683e+006	419.1567	0.0497	5.2300e-003	421.9589
High Turnover (Sit Down Restaurant)	175016	12.7176	1.5100e-003	1.6000e-004	12.8026
High Turnover (Sit Down Restaurant)	268613	19.5189	2.3100e-003	2.4000e-004	19.6494
Other Asphalt Surfaces	-230571	-33.5092	-0.0040	-0.0004	-33.7332
Other Non-Asphalt Surfaces	-230571	-33.5092	-0.0040	-0.0004	-33.7332
Parking Lot	-224271	-16.2968	-0.0019	-0.0002	-16.4058
Parking Lot	-226721	-16.4748	-0.0020	-0.0002	-16.5850
Research & Development	6.38958e+006	464.3021	0.0551	5.8000e-003	467.4061
Unenclosed Parking with Elevator	836429	60.7795	7.2100e-003	7.6000e-004	61.1858
Total		**967.6806**	**0.1148**	**0.0121**	**974.1499**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.0430	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580
Unmitigated	5.0430	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.0404					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5800e-003	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580
Total	**5.0430**	**2.5000e-004**	**0.0279**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0544**	**0.0544**	**1.4000e-004**	**0.0000**	**0.0580**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.0404					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5800e-003	2.5000e-004	0.0279	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0544	0.0544	1.4000e-004	0.0000	0.0580
Total	**5.0430**	**2.5000e-004**	**0.0279**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0544**	**0.0544**	**1.4000e-004**	**0.0000**	**0.0580**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

ISI Proposed Project - North and South Sites - Santa Clara County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	38.7795	1.4174	0.0337	84.2587
Unmitigated	47.0049	1.7715	0.0421	103.8440

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	54.2577 / 33.2547	47.0049	1.7715	0.0421	103.8440
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**47.0049**	**1.7715**	**0.0421**	**103.8440**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	43.4062 / 31.2262	38.7795	1.4174	0.0337	84.2587
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**38.7795**	**1.4174**	**0.0337**	**84.2587**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	254.3477	15.0315	0.0000	630.1356
Unmitigated	254.3477	15.0315	0.0000	630.1356

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1253	254.3477	15.0315	0.0000	630.1356
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**254.3477**	**15.0315**	**0.0000**	**630.1356**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1253	254.3477	15.0315	0.0000	630.1356
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**254.3477**	**15.0315**	**0.0000**	**630.1356**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	50	1200	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0985	0.4403	0.2511	4.7000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	45.6957	45.6957	6.4100e-003	0.0000	45.8558
Total	**0.0985**	**0.4403**	**0.2511**	**4.7000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**45.6957**	**45.6957**	**6.4100e-003**	**0.0000**	**45.8558**

11.0 Vegetation

ISI Proposed Project - North and South Sites

Santa Clara County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	375.00	1000sqft	2.90	375,000.00	0
Research & Development	847.00	1000sqft	6.50	847,000.00	0
General Light Industry	12.00	1000sqft	0.28	12,000.00	0
Enclosed Parking with Elevator	395.00	1000sqft	4.50	395,000.00	0
Other Asphalt Surfaces	80.00	1000sqft	1.84	80,000.00	0
Other Asphalt Surfaces	138.00	1000sqft	3.17	138,000.00	0
Other Non-Asphalt Surfaces	361.00	1000sqft	8.29	0.00	0
Other Non-Asphalt Surfaces	155.00	1000sqft	3.56	0.00	0
Parking Lot	11.00	1000sqft	0.25	11,000.00	0
Parking Lot	18.00	1000sqft	0.41	18,000.00	0
Unenclosed Parking with Elevator	550.00	1000sqft	2.50	550,000.00	0
City Park	75.00	Acre	75.00	3,267,000.00	0
High Turnover (Sit Down Restaurant)	13.00	1000sqft	0.30	13,000.00	0
High Turnover (Sit Down Restaurant)	16.00	1000sqft	0.37	16,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				

CO2 Intensity (lb/MWhr)	160.2	**CH4 Intensity (lb/MWhr)**	0.019	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted to meet 2024 projections.

Land Use - Adjusted lots based on building levels. Other Non-asphalt surface BSF removed to not be accounted for in painting.

Construction Phase - Adjusted construction schedule includes construction of both north and south site.

Off-road Equipment - Trenching equipment added

Demolition -

Grading - Export of approximately 570,000 cubic yards (cy) of soil

Vehicle Trips - Trip rates based on ISI TIA - ITE Trip Gen Manual 10th Edition

Fleet Mix -

Energy Use -

Energy Mitigation - 2019 Title 24 standards applied

Water And Wastewater - Adjusted water use based on provided 87,512,400 gal/year project total.

Solid Waste - Adjustement based on provided data.

Stationary Sources - Emergency Generators and Fire Pumps - Two back-up generators with BAAQMD testing and maintenance limit of 50 days/year

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures Recommended for ALL Proposed Projects
Project Condition is use of Tier 4 equipment

Mobile Land Use Mitigation - Site boundary located within 0.5 miles of Lawrence Caltrain Station

Water Mitigation -

Architectural Coating -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	631500	0

tblAreaCoating	Area_Nonresidential_Interior	1894500	0
tblAreaCoating	Area_Parking	71520	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

ISI Proposed Project - North and South Sites - Santa Clara County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	220.00	321.00
tblConstructionPhase	NumDays	3,100.00	686.00
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDays	310.00	122.00
tblConstructionPhase	NumDays	220.00	165.00
tblConstructionPhase	NumDays	120.00	32.00
tblGrading	MaterialExported	0.00	570,000.00
tblLandUse	LandUseSquareFeet	361,000.00	0.00
tblLandUse	LandUseSquareFeet	155,000.00	0.00
tblLandUse	LotAcreage	8.61	2.90
tblLandUse	LotAcreage	19.44	6.50
tblLandUse	LotAcreage	9.07	4.50
tblLandUse	LotAcreage	12.63	2.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.2
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblSolidWaste	SolidWasteGenerationRate	6.45	0.00
tblSolidWaste	SolidWasteGenerationRate	14.88	0.00
tblSolidWaste	SolidWasteGenerationRate	348.75	1,253.00
tblSolidWaste	SolidWasteGenerationRate	345.10	0.00

ISI Proposed Project - North and South Sites - Santa Clara County, Summer

tblSolidWaste	SolidWasteGenerationRate	64.37	0.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,200.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.98	0.99
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.6460e-003	7.6498e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.55	0.55
tblVehicleEF	LDA	0.78	0.78
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003

tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	8.5080e-003	8.5123e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.46	0.46
tblVehicleEF	LDA	1.15	1.16
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.4330e-003	7.4367e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDT1	0.91	0.92
tblVehicleEF	LDT1	2.05	2.06
tblVehicleEF	LDT1	0.09	0.09
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003

tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	1.06	1.06
tblVehicleEF	LDT1	1.62	1.62
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	0.90	0.90
tblVehicleEF	LDT1	2.41	2.42
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003

tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.15	0.15
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT2	0.65	0.65
tblVehicleEF	LDT2	1.32	1.32
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.76	0.77
tblVehicleEF	LDT2	1.05	1.05
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.08

tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.64	0.64
tblVehicleEF	LDT2	1.54	1.54
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	MDV	0.97	0.98
tblVehicleEF	MDV	2.43	2.44
tblVehicleEF	MDV	0.12	0.12

tblVehicleEF	MDV	0.21	0.21
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.18	0.18
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	1.14	1.15
tblVehicleEF	MDV	1.93	1.93
tblVehicleEF	MDV	0.11	0.11
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.15	0.15
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.16	0.16
tblVehicleEF	MDV	0.96	0.96
tblVehicleEF	MDV	2.84	2.85

tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.23	0.23
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.22	0.22
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	2.21
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.70
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	9.74
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	8.11	11.26
tblWater	IndoorWaterUseRate	2,775,000.00	0.00
tblWater	IndoorWaterUseRate	66,650,155.50	54,257,688.00

tblWater	IndoorWaterUseRate	8,802,477.66	0.00
tblWater	IndoorWaterUseRate	416,464,773.28	0.00
tblWater	OutdoorWaterUseRate	89,361,101.22	0.00
tblWater	OutdoorWaterUseRate	40,850,095.30	33,254,712.00
tblWater	OutdoorWaterUseRate	561,860.28	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.0847	95.6463	57.7799	0.1184	25.1153	4.6853	29.8006	11.1429	4.3272	15.4701	0.0000	11,671.8982	11,671.8982	2.8928	0.0000	11,744.2180
2021	20.8568	207.4244	155.1421	0.5790	49.9323	5.6221	55.5544	17.8747	5.2141	23.0887	0.0000	59,005.0174	59,005.0174	5.0346	0.0000	59,130.8830
2022	62.5542	262.1420	159.5568	0.9093	48.8398	3.1711	52.0109	14.4046	2.9596	17.3642	0.0000	94,437.5337	94,437.5337	5.7585	0.0000	94,581.4952
2023	59.8074	196.4943	149.0999	0.8798	57.8160	2.5399	60.3560	16.6080	2.3649	18.9729	0.0000	91,419.2864	91,419.2864	5.3885	0.0000	91,553.9984
Maximum	**62.5542**	**262.1420**	**159.5568**	**0.9093**	**57.8160**	**5.6221**	**60.3560**	**17.8747**	**5.2141**	**23.0887**	**0.0000**	**94,437.5337**	**94,437.5337**	**5.7585**	**0.0000**	**94,581.4952**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.5041	12.5386	59.7797	0.1184	11.3909	0.1786	11.5696	4.9357	0.1774	5.1131	0.0000	11,671.8982	11,671.8982	2.8928	0.0000	11,744.2180
2021	12.1445	113.8873	158.6265	0.5790	34.3594	0.5412	34.9006	11.2138	0.5219	11.7356	0.0000	59,005.0174	59,005.0174	5.0346	0.0000	59,130.8830
2022	58.1376	211.9379	164.6301	0.9093	40.8675	0.7918	41.6593	11.6076	0.7589	12.3665	0.0000	94,437.5337	94,437.5337	5.7585	0.0000	94,581.4952
2023	55.8403	151.9544	155.2854	0.8798	49.0360	0.4912	49.5272	13.6127	0.4714	14.0841	0.0000	91,419.2864	91,419.2864	5.3885	0.0000	91,553.9984
Maximum	**58.1376**	**211.9379**	**164.6301**	**0.9093**	**49.0360**	**0.7918**	**49.5272**	**13.6127**	**0.7589**	**14.0841**	**0.0000**	**94,437.5337**	**94,437.5337**	**5.7585**	**0.0000**	**94,581.4952**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.20**	**35.63**	**-3.21**	**0.00**	**25.34**	**87.50**	**30.38**	**31.09**	**87.02**	**42.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Energy	1.0290	9.3547	7.8580	0.0561		0.7110	0.7110		0.7110	0.7110		11,225.6857	11,225.6857	0.2152	0.2058	11,292.3944
Mobile	17.0673	55.9194	189.4932	0.7120	69.0193	0.5252	69.5444	18.4214	0.4888	18.9102		71,928.2846	71,928.2846	2.1118		71,981.0805
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**45.7437**	**65.2770**	**197.6617**	**0.7682**	**69.0193**	**1.2372**	**70.2565**	**18.4214**	**1.2009**	**19.6223**		**83,154.6370**	**83,154.6370**	**2.3287**	**0.2058**	**83,274.1850**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Energy	0.8092	7.3564	6.1794	0.0441		0.5591	0.5591		0.5591	0.5591		8,827.7135	8,827.7135	0.1692	0.1618	8,880.1721
Mobile	16.6461	53.7850	177.4062	0.6598	63.6089	0.4894	64.0983	16.9774	0.4554	17.4328		66,662.1368	66,662.1368	1.9810		66,711.6615
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**45.1027**	**61.1442**	**183.8961**	**0.7040**	**63.6089**	**1.0496**	**64.6585**	**16.9774**	**1.0156**	**17.9930**		**75,490.5169**	**75,490.5169**	**2.1519**	**0.1618**	**75,592.5438**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.40**	**6.33**	**6.96**	**8.36**	**7.84**	**15.17**	**7.97**	**7.84**	**15.42**	**8.30**	**0.00**	**9.22**	**9.22**	**7.59**	**21.36**	**9.22**

3.0 Construction Detail

Construction Phase

ISI Proposed Project - North and South Sites - Santa Clara County, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2020	1/27/2021	5	32	
2	Site Preparation	Site Preparation	12/15/2020	1/27/2021	5	32	
3	Trenching	Trenching	12/16/2020	11/20/2021	5	243	
4	Building Construction	Building Construction	1/15/2021	9/1/2023	5	686	
5	Architectural Coating	Architectural Coating	6/16/2022	9/7/2023	5	321	
6	Grading	Grading	9/9/2022	2/27/2023	5	122	
7	Paving	Paving	3/16/2023	11/1/2023	5	165	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 305

Acres of Paving: 24.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,894,500; Non-Residential Outdoor: 631,500; Striped Parking Area: 71,520 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Trenchers	2	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	846.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	2,281.00	938.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	456.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	56,359.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7229	0.0000	5.7229	0.8665	0.0000	0.8665			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**5.7229**	**1.6587**	**7.3816**	**0.8665**	**1.5419**	**2.4084**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2172	7.5178	1.5222	0.0210	0.9729	0.0248	0.9977	0.2520	0.0237	0.2757		2,238.6479	2,238.6479	0.0996		2,241.1388
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0320	0.4126	1.2100e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		120.9010	120.9010	2.9600e-003		120.9749
Total	**0.2693**	**7.5498**	**1.9347**	**0.0222**	**1.0961**	**0.0255**	**1.1216**	**0.2847**	**0.0244**	**0.3091**		**2,359.5489**	**2,359.5489**	**0.1026**		**2,362.1137**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4465	0.0000	2.4465	0.3704	0.0000	0.3704			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**2.4465**	**0.0616**	**2.5082**	**0.3704**	**0.0616**	**0.4321**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2172	7.5178	1.5222	0.0210	0.8955	0.0248	0.9202	0.2330	0.0237	0.2567		2,238.6479	2,238.6479	0.0996		2,241.1388
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0320	0.4126	1.2100e-003	0.1136	7.7000e-004	0.1144	0.0303	7.1000e-004	0.0310		120.9010	120.9010	2.9600e-003		120.9749
Total	**0.2693**	**7.5498**	**1.9347**	**0.0222**	**1.0090**	**0.0255**	**1.0346**	**0.2633**	**0.0244**	**0.2877**		**2,359.5489**	**2,359.5489**	**0.1026**		**2,362.1137**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7229	0.0000	5.7229	0.8665	0.0000	0.8665			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**5.7229**	**1.5513**	**7.2742**	**0.8665**	**1.4411**	**2.3076**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2049	6.9334	1.4940	0.0207	0.7013	0.0219	0.7232	0.1854	0.0210	0.2063		2,210.3630	2,210.3630	0.0976		2,212.8040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0483	0.0286	0.3780	1.1700e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		116.7016	116.7016	2.6500e-003		116.7679
Total	**0.2532**	**6.9620**	**1.8720**	**0.0219**	**0.8245**	**0.0227**	**0.8471**	**0.2180**	**0.0217**	**0.2397**		**2,327.0647**	**2,327.0647**	**0.1003**		**2,329.5719**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4465	0.0000	2.4465	0.3704	0.0000	0.3704			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**2.4465**	**0.0616**	**2.5082**	**0.3704**	**0.0616**	**0.4321**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2049	6.9334	1.4940	0.0207	0.6483	0.0219	0.6702	0.1724	0.0210	0.1933		2,210.3630	2,210.3630	0.0976		2,212.8040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0483	0.0286	0.3780	1.1700e-003	0.1136	7.5000e-004	0.1143	0.0303	6.9000e-004	0.0310		116.7016	116.7016	2.6500e-003		116.7679
Total	**0.2532**	**6.9620**	**1.8720**	**0.0219**	**0.7619**	**0.0227**	**0.7845**	**0.2027**	**0.0217**	**0.2243**		**2,327.0647**	**2,327.0647**	**0.1003**		**2,329.5719**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0626	0.0384	0.4951	1.4600e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		145.0812	145.0812	3.5500e-003		145.1699
Total	**0.0626**	**0.0384**	**0.4951**	**1.4600e-003**	**0.1479**	**9.2000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**145.0812**	**145.0812**	**3.5500e-003**		**145.1699**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.7233**	**0.0621**	**7.7854**	**4.2454**	**0.0621**	**4.3075**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0626	0.0384	0.4951	1.4600e-003	0.1363	9.2000e-004	0.1372	0.0364	8.5000e-004	0.0372		145.0812	145.0812	3.5500e-003		145.1699
Total	**0.0626**	**0.0384**	**0.4951**	**1.4600e-003**	**0.1363**	**9.2000e-004**	**0.1372**	**0.0364**	**8.5000e-004**	**0.0372**		**145.0812**	**145.0812**	**3.5500e-003**		**145.1699**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0580	0.0343	0.4536	1.4100e-003	0.1479	9.0000e-004	0.1488	0.0392	8.3000e-004	0.0401		140.0420	140.0420	3.1800e-003		140.1215
Total	**0.0580**	**0.0343**	**0.4536**	**1.4100e-003**	**0.1479**	**9.0000e-004**	**0.1488**	**0.0392**	**8.3000e-004**	**0.0401**		**140.0420**	**140.0420**	**3.1800e-003**		**140.1215**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.7233**	**0.0621**	**7.7854**	**4.2454**	**0.0621**	**4.3075**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0580	0.0343	0.4536	1.4100e-003	0.1363	9.0000e-004	0.1372	0.0364	8.3000e-004	0.0372		140.0420	140.0420	3.1800e-003		140.1215
Total	**0.0580**	**0.0343**	**0.4536**	**1.4100e-003**	**0.1363**	**9.0000e-004**	**0.1372**	**0.0364**	**8.3000e-004**	**0.0372**		**140.0420**	**140.0420**	**3.1800e-003**		**140.1215**

3.4 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3295	12.4184	11.8082	0.0171		0.8022	0.8022		0.7380	0.7380		1,653.8610	1,653.8610	0.5349		1,667.2333
Total	**1.3295**	**12.4184**	**11.8082**	**0.0171**		**0.8022**	**0.8022**		**0.7380**	**0.7380**		**1,653.8610**	**1,653.8610**	**0.5349**		**1,667.2333**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0348	0.0213	0.2750	8.1000e-004	0.0822	5.1000e-004	0.0827	0.0218	4.7000e-004	0.0223		80.6006	80.6006	1.9700e-003		80.6500
Total	**0.0348**	**0.0213**	**0.2750**	**8.1000e-004**	**0.0822**	**5.1000e-004**	**0.0827**	**0.0218**	**4.7000e-004**	**0.0223**		**80.6006**	**80.6006**	**1.9700e-003**		**80.6500**

3.4 Trenching - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2096	0.9083	12.9261	0.0171		0.0280	0.0280		0.0280	0.0280	0.0000	1,653.8610	1,653.8610	0.5349		1,667.2333
Total	**0.2096**	**0.9083**	**12.9261**	**0.0171**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**1,653.8610**	**1,653.8610**	**0.5349**		**1,667.2333**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0348	0.0213	0.2750	8.1000e-004	0.0757	5.1000e-004	0.0762	0.0202	4.7000e-004	0.0207		80.6006	80.6006	1.9700e-003		80.6500
Total	**0.0348**	**0.0213**	**0.2750**	**8.1000e-004**	**0.0757**	**5.1000e-004**	**0.0762**	**0.0202**	**4.7000e-004**	**0.0207**		**80.6006**	**80.6006**	**1.9700e-003**		**80.6500**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2233	11.3310	11.7563	0.0171		0.7189	0.7189		0.6614	0.6614		1,654.2290	1,654.2290	0.5350		1,667.6042
Total	**1.2233**	**11.3310**	**11.7563**	**0.0171**		**0.7189**	**0.7189**		**0.6614**	**0.6614**		**1,654.2290**	**1,654.2290**	**0.5350**		**1,667.6042**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0191	0.2520	7.8000e-004	0.0822	5.0000e-004	0.0827	0.0218	4.6000e-004	0.0223		77.8011	77.8011	1.7700e-003		77.8453
Total	**0.0322**	**0.0191**	**0.2520**	**7.8000e-004**	**0.0822**	**5.0000e-004**	**0.0827**	**0.0218**	**4.6000e-004**	**0.0223**		**77.8011**	**77.8011**	**1.7700e-003**		**77.8453**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2096	0.9083	12.9261	0.0171		0.0280	0.0280		0.0280	0.0280	0.0000	1,654.2290	1,654.2290	0.5350		1,667.6042
Total	**0.2096**	**0.9083**	**12.9261**	**0.0171**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**1,654.2290**	**1,654.2290**	**0.5350**		**1,667.6042**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0191	0.2520	7.8000e-004	0.0757	5.0000e-004	0.0762	0.0202	4.6000e-004	0.0207		77.8011	77.8011	1.7700e-003		77.8453
Total	**0.0322**	**0.0191**	**0.2520**	**7.8000e-004**	**0.0757**	**5.0000e-004**	**0.0762**	**0.0202**	**4.6000e-004**	**0.0207**		**77.8011**	**77.8011**	**1.7700e-003**		**77.8453**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9906	95.3561	24.0327	0.2560	6.3508	0.2108	6.5616	1.8283	0.2016	2.0299		27,072.4869	27,072.4869	1.1283		27,100.6931
Worker	7.3453	4.3521	57.4811	0.1781	18.7379	0.1139	18.8517	4.9702	0.1048	5.0750		17,746.4282	17,746.4282	0.4032		17,756.5081
Total	**10.3358**	**99.7081**	**81.5138**	**0.4341**	**25.0887**	**0.3247**	**25.4134**	**6.7984**	**0.3065**	**7.1049**		**44,818.9151**	**44,818.9151**	**1.5315**		**44,857.2012**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9906	95.3561	24.0327	0.2560	5.9434	0.2108	6.1542	1.7283	0.2016	1.9299		27,072.4869	27,072.4869	1.1283		27,100.6931
Worker	7.3453	4.3521	57.4811	0.1781	17.2722	0.1139	17.3861	4.6104	0.1048	4.7153		17,746.4282	17,746.4282	0.4032		17,756.5081
Total	**10.3358**	**99.7081**	**81.5138**	**0.4341**	**23.2156**	**0.3247**	**23.5403**	**6.3387**	**0.3065**	**6.6452**		**44,818.9151**	**44,818.9151**	**1.5315**		**44,857.2012**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7899	90.2031	22.6338	0.2534	6.3512	0.1832	6.5344	1.8284	0.1751	2.0036		26,815.3572	26,815.3572	1.0777		26,842.2998
Worker	6.8447	3.9055	52.9678	0.1715	18.7379	0.1113	18.8492	4.9702	0.1025	5.0727		17,101.1310	17,101.1310	0.3621		17,110.1837
Total	**9.6346**	**94.1085**	**75.6016**	**0.4250**	**25.0891**	**0.2945**	**25.3836**	**6.7986**	**0.2776**	**7.0762**		**43,916.4882**	**43,916.4882**	**1.4398**		**43,952.4835**

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7899	90.2031	22.6338	0.2534	5.9438	0.1832	6.1270	1.7284	0.1751	1.9036		26,815.3572	26,815.3572	1.0777		26,842.2998
Worker	6.8447	3.9055	52.9678	0.1715	17.2722	0.1113	17.3836	4.6104	0.1025	4.7129		17,101.1310	17,101.1310	0.3621		17,110.1837
Total	**9.6346**	**94.1085**	**75.6016**	**0.4250**	**23.2161**	**0.2945**	**23.5105**	**6.3388**	**0.2776**	**6.6165**		**43,916.4882**	**43,916.4882**	**1.4398**		**43,952.4835**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.1000	68.5235	20.4411	0.2460	6.3516	0.0793	6.4309	1.8286	0.0758	1.9044		26,050.1483	26,050.1483	0.9201		26,073.1514
Worker	6.3976	3.5139	48.8570	0.1650	18.7379	0.1091	18.8470	4.9702	0.1005	5.0706		16,450.8810	16,450.8810	0.3251		16,459.0079
Total	**8.4976**	**72.0374**	**69.2981**	**0.4110**	**25.0895**	**0.1884**	**25.2779**	**6.7987**	**0.1763**	**6.9750**		**42,501.0293**	**42,501.0293**	**1.2452**		**42,532.1593**

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.1000	68.5235	20.4411	0.2460	5.9442	0.0793	6.0235	1.7286	0.0758	1.8044		26,050.1483	26,050.1483	0.9201		26,073.1514
Worker	6.3976	3.5139	48.8570	0.1650	17.2722	0.1091	17.3814	4.6104	0.1005	4.7109		16,450.8810	16,450.8810	0.3251		16,459.0079
Total	**8.4976**	**72.0374**	**69.2981**	**0.4110**	**23.2165**	**0.1884**	**23.4049**	**6.3390**	**0.1763**	**6.5152**		**42,501.0293**	**42,501.0293**	**1.2452**		**42,532.1593**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**42.7863**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3683	0.7808	10.5889	0.0343	3.7459	0.0223	3.7682	0.9936	0.0205	1.0141		3,418.7268	3,418.7268	0.0724		3,420.5365
Total	**1.3683**	**0.7808**	**10.5889**	**0.0343**	**3.7459**	**0.0223**	**3.7682**	**0.9936**	**0.0205**	**1.0141**		**3,418.7268**	**3,418.7268**	**0.0724**		**3,420.5365**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**42.6115**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3683	0.7808	10.5889	0.0343	3.4529	0.0223	3.4752	0.9217	0.0205	0.9422		3,418.7268	3,418.7268	0.0724		3,420.5365
Total	**1.3683**	**0.7808**	**10.5889**	**0.0343**	**3.4529**	**0.0223**	**3.4752**	**0.9217**	**0.0205**	**0.9422**		**3,418.7268**	**3,418.7268**	**0.0724**		**3,420.5365**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**42.7735**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2790	0.7025	9.7671	0.0330	3.7459	0.0218	3.7678	0.9936	0.0201	1.0137		3,288.7338	3,288.7338	0.0650		3,290.3584
Total	**1.2790**	**0.7025**	**9.7671**	**0.0330**	**3.7459**	**0.0218**	**3.7678**	**0.9936**	**0.0201**	**1.0137**		**3,288.7338**	**3,288.7338**	**0.0650**		**3,290.3584**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**42.6115**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2790	0.7025	9.7671	0.0330	3.4529	0.0218	3.4748	0.9217	0.0201	0.9418		3,288.7338	3,288.7338	0.0650		3,290.3584
Total	**1.2790**	**0.7025**	**9.7671**	**0.0330**	**3.4529**	**0.0218**	**3.4748**	**0.9217**	**0.0201**	**0.9418**		**3,288.7338**	**3,288.7338**	**0.0650**		**3,290.3584**

3.7 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3738	111.3509	25.6834	0.3566	11.1672	0.3278	11.4950	2.9723	0.3136	3.2860		38,105.1824	38,105.1824	1.6686		38,146.8975
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0600	0.0342	0.4644	1.5000e-003	0.1643	9.8000e-004	0.1653	0.0436	9.0000e-004	0.0445		149.9442	149.9442	3.1700e-003		150.0235
Total	**3.4339**	**111.3851**	**26.1478**	**0.3581**	**11.3315**	**0.3288**	**11.6602**	**3.0159**	**0.3145**	**3.3304**		**38,255.1266**	**38,255.1266**	**1.6718**		**38,296.9210**

3.7 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**3.7079**	**0.1015**	**3.8094**	**1.5375**	**0.1015**	**1.6390**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3738	111.3509	25.6834	0.3566	10.3392	0.3278	10.6671	2.7691	0.3136	3.0827		38,105.1824	38,105.1824	1.6686		38,146.8975
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0600	0.0342	0.4644	1.5000e-003	0.1514	9.8000e-004	0.1524	0.0404	9.0000e-004	0.0413		149.9442	149.9442	3.1700e-003		150.0235
Total	**3.4339**	**111.3851**	**26.1478**	**0.3581**	**10.4907**	**0.3288**	**10.8195**	**2.8095**	**0.3145**	**3.1241**		**38,255.1266**	**38,255.1266**	**1.6718**		**38,296.9210**

3.7 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**8.6733**	**1.4245**	**10.0978**	**3.5965**	**1.3105**	**4.9070**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3068	73.5202	23.5000	0.3424	20.1430	0.1337	20.2767	5.1756	0.1279	5.3035		36,637.1450	36,637.1450	1.5065		36,674.8080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0561	0.0308	0.4284	1.4500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		144.2427	144.2427	2.8500e-003		144.3140
Total	**2.3629**	**73.5510**	**23.9284**	**0.3438**	**20.3073**	**0.1346**	**20.4419**	**5.2192**	**0.1288**	**5.3480**		**36,781.3877**	**36,781.3877**	**1.5094**		**36,819.1220**

3.7 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**3.7079**	**0.1015**	**3.8094**	**1.5375**	**0.1015**	**1.6390**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3068	73.5202	23.5000	0.3424	18.5073	0.1337	18.6410	4.7741	0.1279	4.9020		36,637.1450	36,637.1450	1.5065		36,674.8080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0561	0.0308	0.4284	1.4500e-003	0.1514	9.6000e-004	0.1524	0.0404	8.8000e-004	0.0413		144.2427	144.2427	2.8500e-003		144.3140
Total	**2.3629**	**73.5510**	**23.9284**	**0.3438**	**18.6588**	**0.1346**	**18.7934**	**4.8146**	**0.1288**	**4.9433**		**36,781.3877**	**36,781.3877**	**1.5094**		**36,819.1220**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1228**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0421	0.0231	0.3213	1.0800e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		108.1820	108.1820	2.1400e-003		108.2355
Total	**0.0421**	**0.0231**	**0.3213**	**1.0800e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**108.1820**	**108.1820**	**2.1400e-003**		**108.2355**

3.8 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3705**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0421	0.0231	0.3213	1.0800e-003	0.1136	7.2000e-004	0.1143	0.0303	6.6000e-004	0.0310		108.1820	108.1820	2.1400e-003		108.2355
Total	**0.0421**	**0.0231**	**0.3213**	**1.0800e-003**	**0.1136**	**7.2000e-004**	**0.1143**	**0.0303**	**6.6000e-004**	**0.0310**		**108.1820**	**108.1820**	**2.1400e-003**		**108.2355**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.6461	53.7850	177.4062	0.6598	63.6089	0.4894	64.0983	16.9774	0.4554	17.4328		66,662.1368	66,662.1368	1.9810		66,711.6615
Unmitigated	17.0673	55.9194	189.4932	0.7120	69.0193	0.5252	69.5444	18.4214	0.4888	18.9102		71,928.2846	71,928.2846	2.1118		71,981.0805

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	3,652.50	828.75	262.50	6,607,240	6,089,298
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Research & Development	9,537.22	1,609.30	940.17	17,986,109	16,576,178
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	13,189.72	2,438.05	1,202.67	24,593,349	22,665,477

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Light Industry	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Office Building	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
High Turnover (Sit Down Restaurant)	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Non-Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Research & Development	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Unenclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8092	7.3564	6.1794	0.0441		0.5591	0.5591		0.5591	0.5591		8,827.7135	8,827.7135	0.1692	0.1618	8,880.1721
NaturalGas Unmitigated	1.0290	9.3547	7.8580	0.0561		0.7110	0.7110		0.7110	0.7110		11,225.6857	11,225.6857	0.2152	0.2058	11,292.3944

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	867.288	9.3500e-003	0.0850	0.0714	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003		102.0338	102.0338	1.9600e-003	1.8700e-003	102.6402
General Office Building	16818.5	0.1814	1.6489	1.3851	9.8900e-003		0.1253	0.1253		0.1253	0.1253		1,978.6463	1,978.6463	0.0379	0.0363	1,990.4044
High Turnover (Sit Down Restaurant)	7403.95	0.0799	0.7259	0.6097	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.0524	871.0524	0.0167	0.0160	876.2286
High Turnover (Sit Down Restaurant)	9112.55	0.0983	0.8934	0.7505	5.3600e-003		0.0679	0.0679		0.0679	0.0679		1,072.0645	1,072.0645	0.0206	0.0197	1,078.4352
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	61216.1	0.6602	6.0016	5.0413	0.0360		0.4561	0.4561		0.4561	0.4561		7,201.8888	7,201.8888	0.1380	0.1320	7,244.6860
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0290**	**9.3547**	**7.8580**	**0.0561**		**0.7110**	**0.7110**		**0.7110**	**0.7110**		**11,225.6857**	**11,225.6857**	**0.2152**	**0.2058**	**11,292.3944**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0.672888	7.2600e-003	0.0660	0.0554	4.0000e-004		5.0100e-003	5.0100e-003		5.0100e-003	5.0100e-003		79.1633	79.1633	1.5200e-003	1.4500e-003	79.6337
General Office Building	11.7914	0.1272	1.1560	0.9711	6.9400e-003		0.0879	0.0879		0.0879	0.0879		1,387.2280	1,387.2280	0.0266	0.0254	1,395.4716
High Turnover (Sit Down Restaurant)	6.75847	0.0729	0.6626	0.5566	3.9800e-003		0.0504	0.0504		0.0504	0.0504		795.1139	795.1139	0.0152	0.0146	799.8389
High Turnover (Sit Down Restaurant)	8.31812	0.0897	0.8155	0.6850	4.8900e-003		0.0620	0.0620		0.0620	0.0620		978.6018	978.6018	0.0188	0.0179	984.4171
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	47.4947	0.5122	4.6563	3.9113	0.0279		0.3539	0.3539		0.3539	0.3539		5,587.6065	5,587.6065	0.1071	0.1024	5,620.8108
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**7.3564**	**6.1794**	**0.0442**		**0.5591**	**0.5591**		**0.5591**	**0.5591**		**8,827.7135**	**8,827.7135**	**0.1692**	**0.1618**	**8,880.1721**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Unmitigated	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	27.6187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0287	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Total	**27.6474**	**2.8200e-003**	**0.3105**	**2.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**		**0.6666**	**0.6666**	**1.7400e-003**		**0.7101**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	27.6187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0287	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Total	**27.6474**	**2.8200e-003**	**0.3105**	**2.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**		**0.6666**	**0.6666**	**1.7400e-003**		**0.7101**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	50	1200	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

ISI Proposed Project - North and South Sites

Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	375.00	1000sqft	2.90	375,000.00	0
Research & Development	847.00	1000sqft	6.50	847,000.00	0
General Light Industry	12.00	1000sqft	0.28	12,000.00	0
Enclosed Parking with Elevator	395.00	1000sqft	4.50	395,000.00	0
Other Asphalt Surfaces	80.00	1000sqft	1.84	80,000.00	0
Other Asphalt Surfaces	138.00	1000sqft	3.17	138,000.00	0
Other Non-Asphalt Surfaces	361.00	1000sqft	8.29	0.00	0
Other Non-Asphalt Surfaces	155.00	1000sqft	3.56	0.00	0
Parking Lot	11.00	1000sqft	0.25	11,000.00	0
Parking Lot	18.00	1000sqft	0.41	18,000.00	0
Unenclosed Parking with Elevator	550.00	1000sqft	2.50	550,000.00	0
City Park	75.00	Acre	75.00	3,267,000.00	0
High Turnover (Sit Down Restaurant)	13.00	1000sqft	0.30	13,000.00	0
High Turnover (Sit Down Restaurant)	16.00	1000sqft	0.37	16,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				

CO2 Intensity (lb/MWhr)	160.2	**CH4 Intensity (lb/MWhr)**	0.019	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted to meet 2024 projections.

Land Use - Adjusted lots based on building levels. Other Non-asphalt surface BSF removed to not be accounted for in painting.

Construction Phase - Adjusted construction schedule includes construction of both north and south site.

Off-road Equipment - Trenching equipment added

Demolition -

Grading - Export of approximately 570,000 cubic yards (cy) of soil

Vehicle Trips - Trip rates based on ISI TIA - ITE Trip Gen Manual 10th Edition

Fleet Mix -

Energy Use -

Energy Mitigation - 2019 Title 24 standards applied

Water And Wastewater - Adjusted water use based on provided 87,512,400 gal/year project total.

Solid Waste - Adjustement based on provided data.

Stationary Sources - Emergency Generators and Fire Pumps - Two back-up generators with BAAQMD testing and maintenance limit of 50 days/year

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures Recommended for ALL Proposed Projects
Project Condition is use of Tier 4 equipment

Mobile Land Use Mitigation - Site boundary located within 0.5 miles of Lawrence Caltrain Station

Water Mitigation -

Architectural Coating -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	631500	0

tblAreaCoating	Area_Nonresidential_Interior	1894500	0
tblAreaCoating	Area_Parking	71520	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

ISI Proposed Project - North and South Sites - Santa Clara County, Winter

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	220.00	321.00
tblConstructionPhase	NumDays	3,100.00	686.00
tblConstructionPhase	NumDays	200.00	32.00
tblConstructionPhase	NumDays	310.00	122.00
tblConstructionPhase	NumDays	220.00	165.00
tblConstructionPhase	NumDays	120.00	32.00
tblGrading	MaterialExported	0.00	570,000.00
tblLandUse	LandUseSquareFeet	361,000.00	0.00
tblLandUse	LandUseSquareFeet	155,000.00	0.00
tblLandUse	LotAcreage	8.61	2.90
tblLandUse	LotAcreage	19.44	6.50
tblLandUse	LotAcreage	9.07	4.50
tblLandUse	LotAcreage	12.63	2.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.2
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblSolidWaste	SolidWasteGenerationRate	6.45	0.00
tblSolidWaste	SolidWasteGenerationRate	14.88	0.00
tblSolidWaste	SolidWasteGenerationRate	348.75	1,253.00
tblSolidWaste	SolidWasteGenerationRate	345.10	0.00

ISI Proposed Project - North and South Sites - Santa Clara County, Winter

tblSolidWaste	SolidWasteGenerationRate	64.37	0.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,200.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.98	0.99
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.6460e-003	7.6498e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.55	0.55
tblVehicleEF	LDA	0.78	0.78
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003

tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	8.5080e-003	8.5123e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.05
tblVehicleEF	LDA	0.46	0.46
tblVehicleEF	LDA	1.15	1.16
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	1.5950e-003	1.6117e-003
tblVehicleEF	LDA	2.2180e-003	2.2413e-003
tblVehicleEF	LDA	1.4690e-003	1.4844e-003
tblVehicleEF	LDA	2.0400e-003	2.0614e-003
tblVehicleEF	LDA	7.4330e-003	7.4367e-003
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDT1	0.91	0.92
tblVehicleEF	LDT1	2.05	2.06
tblVehicleEF	LDT1	0.09	0.09
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003

tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	1.06	1.06
tblVehicleEF	LDT1	1.62	1.62
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003
tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.11	0.11
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.13	0.13
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	0.90	0.90
tblVehicleEF	LDT1	2.41	2.42
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	0.12	0.12
tblVehicleEF	LDT1	2.1030e-003	2.1251e-003

tblVehicleEF	LDT1	2.8260e-003	2.8557e-003
tblVehicleEF	LDT1	1.9360e-003	1.9563e-003
tblVehicleEF	LDT1	2.5980e-003	2.6253e-003
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.15	0.15
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.17	0.17
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT2	0.65	0.65
tblVehicleEF	LDT2	1.32	1.32
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.76	0.77
tblVehicleEF	LDT2	1.05	1.05
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.08

tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.64	0.64
tblVehicleEF	LDT2	1.54	1.54
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	LDT2	1.6510e-003	1.6683e-003
tblVehicleEF	LDT2	2.3140e-003	2.3383e-003
tblVehicleEF	LDT2	1.5190e-003	1.5349e-003
tblVehicleEF	LDT2	2.1270e-003	2.1493e-003
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.09	0.09
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	MDV	0.97	0.98
tblVehicleEF	MDV	2.43	2.44
tblVehicleEF	MDV	0.12	0.12

tblVehicleEF	MDV	0.21	0.21
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.18	0.18
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	1.14	1.15
tblVehicleEF	MDV	1.93	1.93
tblVehicleEF	MDV	0.11	0.11
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.15	0.15
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.16	0.16
tblVehicleEF	MDV	0.96	0.96
tblVehicleEF	MDV	2.84	2.85

tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.23	0.23
tblVehicleEF	MDV	1.7680e-003	1.7866e-003
tblVehicleEF	MDV	2.4430e-003	2.4687e-003
tblVehicleEF	MDV	1.6290e-003	1.6461e-003
tblVehicleEF	MDV	2.2460e-003	2.2696e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.22	0.22
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	2.21
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.70
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	9.74
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	8.11	11.26
tblWater	IndoorWaterUseRate	2,775,000.00	0.00
tblWater	IndoorWaterUseRate	66,650,155.50	54,257,688.00

tblWater	IndoorWaterUseRate	8,802,477.66	0.00
tblWater	IndoorWaterUseRate	416,464,773.28	0.00
tblWater	OutdoorWaterUseRate	89,361,101.22	0.00
tblWater	OutdoorWaterUseRate	40,850,095.30	33,254,712.00
tblWater	OutdoorWaterUseRate	561,860.28	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.1002	95.8500	57.8089	0.1177	25.1153	4.6857	29.8010	11.1429	4.3276	15.4705	0.0000	11,605.7700	11,605.7700	2.8969	0.0000	11,678.1925
2021	21.5308	209.4162	154.2387	0.5574	49.9323	5.6293	55.5616	17.8747	5.2209	23.0956	0.0000	56,808.2068	56,808.2068	5.0973	0.0000	56,935.6392
2022	63.3825	266.3276	159.5224	0.8799	48.8398	3.1832	52.0230	14.4046	2.9712	17.3758	0.0000	91,413.8941	91,413.8941	5.8825	0.0000	91,560.9558
2023	60.5650	198.9598	148.0867	0.8515	57.8160	2.5462	60.3622	16.6080	2.3708	18.9789	0.0000	88,511.8312	88,511.8312	5.4775	0.0000	88,648.7679
Maximum	**63.3825**	**266.3276**	**159.5224**	**0.8799**	**57.8160**	**5.6293**	**60.3622**	**17.8747**	**5.2209**	**23.0956**	**0.0000**	**91,413.8941**	**91,413.8941**	**5.8825**	**0.0000**	**91,560.9558**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.5196	12.7424	59.8088	0.1177	11.3909	0.1790	11.5700	4.9357	0.1778	5.1135	0.0000	11,605.7700	11,605.7700	2.8969	0.0000	11,678.1925
2021	12.8186	115.8792	157.7231	0.5574	34.3594	0.5484	34.9078	11.2138	0.5287	11.7425	0.0000	56,808.2068	56,808.2068	5.0973	0.0000	56,935.6392
2022	58.9660	216.1235	164.5957	0.8799	40.8675	0.8039	41.6714	11.6076	0.7705	12.3780	0.0000	91,413.8941	91,413.8941	5.8825	0.0000	91,560.9558
2023	56.5980	154.4199	154.2722	0.8515	49.0360	0.4974	49.5334	13.6127	0.4774	14.0901	0.0000	88,511.8312	88,511.8312	5.4775	0.0000	88,648.7679
Maximum	**58.9660**	**216.1235**	**164.5957**	**0.8799**	**49.0360**	**0.8039**	**49.5334**	**13.6127**	**0.7705**	**14.0901**	**0.0000**	**91,413.8941**	**91,413.8941**	**5.8825**	**0.0000**	**91,560.9558**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**15.96**	**35.22**	**-3.22**	**0.00**	**25.34**	**87.36**	**30.37**	**31.09**	**86.88**	**42.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Energy	1.0290	9.3547	7.8580	0.0561		0.7110	0.7110		0.7110	0.7110		11,225.6857	11,225.6857	0.2152	0.2058	11,292.3944
Mobile	14.6883	59.0351	185.4809	0.6642	69.0193	0.5269	69.5462	18.4214	0.4905	18.9119		67,108.5138	67,108.5138	2.1247		67,161.6323
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**43.3647**	**68.3927**	**193.6494**	**0.7204**	**69.0193**	**1.2390**	**70.2583**	**18.4214**	**1.2026**	**19.6240**		**78,334.8662**	**78,334.8662**	**2.3416**	**0.2058**	**78,454.7368**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Energy	0.8092	7.3564	6.1794	0.0441		0.5591	0.5591		0.5591	0.5591		8,827.7135	8,827.7135	0.1692	0.1618	8,880.1721
Mobile	14.2757	56.6477	174.8944	0.6155	63.6089	0.4912	64.1000	16.9774	0.4572	17.4345		62,189.1549	62,189.1549	2.0002		62,239.1600
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**42.7323**	**64.0070**	**181.3843**	**0.6597**	**63.6089**	**1.0514**	**64.6602**	**16.9774**	**1.0174**	**17.9947**		**71,017.5350**	**71,017.5350**	**2.1712**	**0.1618**	**71,120.0423**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.46**	**6.41**	**6.33**	**8.43**	**7.84**	**15.14**	**7.97**	**7.84**	**15.40**	**8.30**	**0.00**	**9.34**	**9.34**	**7.28**	**21.36**	**9.35**

3.0 Construction Detail

Construction Phase

ISI Proposed Project - North and South Sites - Santa Clara County, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/15/2020	1/27/2021	5	32	
2	Site Preparation	Site Preparation	12/15/2020	1/27/2021	5	32	
3	Trenching	Trenching	12/16/2020	11/20/2021	5	243	
4	Building Construction	Building Construction	1/15/2021	9/1/2023	5	686	
5	Architectural Coating	Architectural Coating	6/16/2022	9/7/2023	5	321	
6	Grading	Grading	9/9/2022	2/27/2023	5	122	
7	Paving	Paving	3/16/2023	11/1/2023	5	165	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 305

Acres of Paving: 24.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,894,500; Non-Residential Outdoor: 631,500; Striped Parking Area: 71,520 (Architectural Coating – sqft)

OffRoad Equipment

ISI Proposed Project - North and South Sites - Santa Clara County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Excavators	2	8.00	158	0.38
Trenching	Trenchers	2	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	846.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	2,281.00	938.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	456.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	56,359.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7229	0.0000	5.7229	0.8665	0.0000	0.8665			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**5.7229**	**1.6587**	**7.3816**	**0.8665**	**1.5419**	**2.4084**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2232	7.7012	1.6380	0.0206	0.9729	0.0252	0.9981	0.2520	0.0241	0.2761		2,200.7021	2,200.7021	0.1043		2,203.3103
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0555	0.0391	0.3823	1.1100e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		111.0699	111.0699	2.7500e-003		111.1388
Total	**0.2786**	**7.7403**	**2.0203**	**0.0217**	**1.0961**	**0.0259**	**1.1220**	**0.2847**	**0.0248**	**0.3095**		**2,311.7720**	**2,311.7720**	**0.1071**		**2,314.4491**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4465	0.0000	2.4465	0.3704	0.0000	0.3704			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**2.4465**	**0.0616**	**2.5082**	**0.3704**	**0.0616**	**0.4321**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2232	7.7012	1.6380	0.0206	0.8955	0.0252	0.9206	0.2330	0.0241	0.2571		2,200.7021	2,200.7021	0.1043		2,203.3103
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0555	0.0391	0.3823	1.1100e-003	0.1136	7.7000e-004	0.1144	0.0303	7.1000e-004	0.0310		111.0699	111.0699	2.7500e-003		111.1388
Total	**0.2786**	**7.7403**	**2.0203**	**0.0217**	**1.0090**	**0.0259**	**1.0350**	**0.2633**	**0.0248**	**0.2881**		**2,311.7720**	**2,311.7720**	**0.1071**		**2,314.4491**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7229	0.0000	5.7229	0.8665	0.0000	0.8665			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**5.7229**	**1.5513**	**7.2742**	**0.8665**	**1.4411**	**2.3076**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2106	7.0942	1.6040	0.0204	0.7013	0.0223	0.7235	0.1854	0.0213	0.2067		2,172.6310	2,172.6310	0.1021		2,175.1834
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0350	0.3490	1.0800e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		107.2152	107.2152	2.4600e-003		107.2768
Total	**0.2621**	**7.1292**	**1.9529**	**0.0214**	**0.8245**	**0.0230**	**0.8475**	**0.2180**	**0.0220**	**0.2400**		**2,279.8462**	**2,279.8462**	**0.1046**		**2,282.4602**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4465	0.0000	2.4465	0.3704	0.0000	0.3704			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**2.4465**	**0.0616**	**2.5082**	**0.3704**	**0.0616**	**0.4321**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2106	7.0942	1.6040	0.0204	0.6483	0.0223	0.6706	0.1724	0.0213	0.1937		2,172.6310	2,172.6310	0.1021		2,175.1834
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0350	0.3490	1.0800e-003	0.1136	7.5000e-004	0.1143	0.0303	6.9000e-004	0.0310		107.2152	107.2152	2.4600e-003		107.2768
Total	**0.2621**	**7.1292**	**1.9529**	**0.0214**	**0.7619**	**0.0230**	**0.7849**	**0.2027**	**0.0220**	**0.2247**		**2,279.8462**	**2,279.8462**	**0.1046**		**2,282.4602**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0666	0.0469	0.4587	1.3400e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		133.2839	133.2839	3.3000e-003		133.3665
Total	**0.0666**	**0.0469**	**0.4587**	**1.3400e-003**	**0.1479**	**9.2000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**133.2839**	**133.2839**	**3.3000e-003**		**133.3665**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.7233**	**0.0621**	**7.7854**	**4.2454**	**0.0621**	**4.3075**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0666	0.0469	0.4587	1.3400e-003	0.1363	9.2000e-004	0.1372	0.0364	8.5000e-004	0.0372		133.2839	133.2839	3.3000e-003		133.3665
Total	**0.0666**	**0.0469**	**0.4587**	**1.3400e-003**	**0.1363**	**9.2000e-004**	**0.1372**	**0.0364**	**8.5000e-004**	**0.0372**		**133.2839**	**133.2839**	**3.3000e-003**		**133.3665**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0618	0.0419	0.4188	1.2900e-003	0.1479	9.0000e-004	0.1488	0.0392	8.3000e-004	0.0401		128.6583	128.6583	2.9500e-003		128.7321
Total	**0.0618**	**0.0419**	**0.4188**	**1.2900e-003**	**0.1479**	**9.0000e-004**	**0.1488**	**0.0392**	**8.3000e-004**	**0.0401**		**128.6583**	**128.6583**	**2.9500e-003**		**128.7321**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.7233**	**0.0621**	**7.7854**	**4.2454**	**0.0621**	**4.3075**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0618	0.0419	0.4188	1.2900e-003	0.1363	9.0000e-004	0.1372	0.0364	8.3000e-004	0.0372		128.6583	128.6583	2.9500e-003		128.7321
Total	**0.0618**	**0.0419**	**0.4188**	**1.2900e-003**	**0.1363**	**9.0000e-004**	**0.1372**	**0.0364**	**8.3000e-004**	**0.0372**		**128.6583**	**128.6583**	**2.9500e-003**		**128.7321**

3.4 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3295	12.4184	11.8082	0.0171		0.8022	0.8022		0.7380	0.7380		1,653.8610	1,653.8610	0.5349		1,667.2333
Total	**1.3295**	**12.4184**	**11.8082**	**0.0171**		**0.8022**	**0.8022**		**0.7380**	**0.7380**		**1,653.8610**	**1,653.8610**	**0.5349**		**1,667.2333**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0370	0.0261	0.2548	7.4000e-004	0.0822	5.1000e-004	0.0827	0.0218	4.7000e-004	0.0223		74.0466	74.0466	1.8400e-003		74.0925
Total	**0.0370**	**0.0261**	**0.2548**	**7.4000e-004**	**0.0822**	**5.1000e-004**	**0.0827**	**0.0218**	**4.7000e-004**	**0.0223**		**74.0466**	**74.0466**	**1.8400e-003**		**74.0925**

3.4 Trenching - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2096	0.9083	12.9261	0.0171		0.0280	0.0280		0.0280	0.0280	0.0000	1,653.8610	1,653.8610	0.5349		1,667.2333
Total	**0.2096**	**0.9083**	**12.9261**	**0.0171**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**1,653.8610**	**1,653.8610**	**0.5349**		**1,667.2333**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0370	0.0261	0.2548	7.4000e-004	0.0757	5.1000e-004	0.0762	0.0202	4.7000e-004	0.0207		74.0466	74.0466	1.8400e-003		74.0925
Total	**0.0370**	**0.0261**	**0.2548**	**7.4000e-004**	**0.0757**	**5.1000e-004**	**0.0762**	**0.0202**	**4.7000e-004**	**0.0207**		**74.0466**	**74.0466**	**1.8400e-003**		**74.0925**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2233	11.3310	11.7563	0.0171		0.7189	0.7189		0.6614	0.6614		1,654.2290	1,654.2290	0.5350		1,667.6042
Total	**1.2233**	**11.3310**	**11.7563**	**0.0171**		**0.7189**	**0.7189**		**0.6614**	**0.6614**		**1,654.2290**	**1,654.2290**	**0.5350**		**1,667.6042**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0233	0.2326	7.2000e-004	0.0822	5.0000e-004	0.0827	0.0218	4.6000e-004	0.0223		71.4768	71.4768	1.6400e-003		71.5178
Total	**0.0343**	**0.0233**	**0.2326**	**7.2000e-004**	**0.0822**	**5.0000e-004**	**0.0827**	**0.0218**	**4.6000e-004**	**0.0223**		**71.4768**	**71.4768**	**1.6400e-003**		**71.5178**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2096	0.9083	12.9261	0.0171		0.0280	0.0280		0.0280	0.0280	0.0000	1,654.2290	1,654.2290	0.5350		1,667.6042
Total	**0.2096**	**0.9083**	**12.9261**	**0.0171**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**1,654.2290**	**1,654.2290**	**0.5350**		**1,667.6042**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0233	0.2326	7.2000e-004	0.0757	5.0000e-004	0.0762	0.0202	4.6000e-004	0.0207		71.4768	71.4768	1.6400e-003		71.5178
Total	**0.0343**	**0.0233**	**0.2326**	**7.2000e-004**	**0.0757**	**5.0000e-004**	**0.0762**	**0.0202**	**4.6000e-004**	**0.0207**		**71.4768**	**71.4768**	**1.6400e-003**		**71.5178**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1684	96.2063	27.5173	0.2496	6.3508	0.2177	6.5684	1.8283	0.2082	2.0364		26,383.1698	26,383.1698	1.2159		26,413.5676
Worker	7.8267	5.3147	53.0663	0.1636	18.7379	0.1139	18.8517	4.9702	0.1048	5.0750		16,303.8611	16,303.8611	0.3743		16,313.2184
Total	**10.9952**	**101.5210**	**80.5837**	**0.4131**	**25.0887**	**0.3315**	**25.4202**	**6.7984**	**0.3130**	**7.1114**		**42,687.0309**	**42,687.0309**	**1.5902**		**42,726.7859**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1684	96.2063	27.5173	0.2496	5.9434	0.2177	6.1611	1.7283	0.2082	1.9364		26,383.1698	26,383.1698	1.2159		26,413.5676
Worker	7.8267	5.3147	53.0663	0.1636	17.2722	0.1139	17.3861	4.6104	0.1048	4.7153		16,303.8611	16,303.8611	0.3743		16,313.2184
Total	**10.9952**	**101.5210**	**80.5837**	**0.4131**	**23.2156**	**0.3315**	**23.5471**	**6.3387**	**0.3130**	**6.6517**		**42,687.0309**	**42,687.0309**	**1.5902**		**42,726.7859**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9563	90.9117	25.9183	0.2470	6.3512	0.1894	6.5406	1.8284	0.1811	2.0095		26,128.1768	26,128.1768	1.1606		26,157.1921
Worker	7.3147	4.7676	48.7032	0.1576	18.7379	0.1113	18.8492	4.9702	0.1025	5.0727		15,711.7553	15,711.7553	0.3352		15,720.1348
Total	**10.2710**	**95.6792**	**74.6215**	**0.4046**	**25.0891**	**0.3007**	**25.3898**	**6.7986**	**0.2836**	**7.0822**		**41,839.9321**	**41,839.9321**	**1.4958**		**41,877.3269**

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9563	90.9117	25.9183	0.2470	5.9438	0.1894	6.1332	1.7284	0.1811	1.9095		26,128.1768	26,128.1768	1.1606		26,157.1921
Worker	7.3147	4.7676	48.7032	0.1576	17.2722	0.1113	17.3836	4.6104	0.1025	4.7129		15,711.7553	15,711.7553	0.3352		15,720.1348
Total	**10.2710**	**95.6792**	**74.6215**	**0.4046**	**23.2161**	**0.3007**	**23.5167**	**6.3388**	**0.2836**	**6.6224**		**41,839.9321**	**41,839.9321**	**1.4958**		**41,877.3269**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.2324	68.8732	23.0989	0.2398	6.3516	0.0825	6.4341	1.8286	0.0788	1.9074		25,389.2205	25,389.2205	0.9842		25,413.8244
Worker	6.8609	4.2875	44.7402	0.1516	18.7379	0.1091	18.8470	4.9702	0.1005	5.0706		15,115.0467	15,115.0467	0.2999		15,122.5443
Total	**9.0933**	**73.1607**	**67.8391**	**0.3914**	**25.0895**	**0.1916**	**25.2811**	**6.7987**	**0.1793**	**6.9780**		**40,504.2672**	**40,504.2672**	**1.2841**		**40,536.3687**

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.2324	68.8732	23.0989	0.2398	5.9442	0.0825	6.0267	1.7286	0.0788	1.8074		25,389.2205	25,389.2205	0.9842		25,413.8244
Worker	6.8609	4.2875	44.7402	0.1516	17.2722	0.1091	17.3814	4.6104	0.1005	4.7109		15,115.0467	15,115.0467	0.2999		15,122.5443
Total	**9.0933**	**73.1607**	**67.8391**	**0.3914**	**23.2165**	**0.1916**	**23.4081**	**6.3390**	**0.1793**	**6.5183**		**40,504.2672**	**40,504.2672**	**1.2841**		**40,536.3687**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**42.7863**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4623	0.9531	9.7364	0.0315	3.7459	0.0223	3.7682	0.9936	0.0205	1.0141		3,140.9734	3,140.9734	0.0670		3,142.6486
Total	**1.4623**	**0.9531**	**9.7364**	**0.0315**	**3.7459**	**0.0223**	**3.7682**	**0.9936**	**0.0205**	**1.0141**		**3,140.9734**	**3,140.9734**	**0.0670**		**3,142.6486**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**42.6115**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4623	0.9531	9.7364	0.0315	3.4529	0.0223	3.4752	0.9217	0.0205	0.9422		3,140.9734	3,140.9734	0.0670		3,142.6486
Total	**1.4623**	**0.9531**	**9.7364**	**0.0315**	**3.4529**	**0.0223**	**3.4752**	**0.9217**	**0.0205**	**0.9422**		**3,140.9734**	**3,140.9734**	**0.0670**		**3,142.6486**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**42.7735**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3716	0.8571	8.9441	0.0303	3.7459	0.0218	3.7678	0.9936	0.0201	1.0137		3,021.6840	3,021.6840	0.0600		3,023.1829
Total	**1.3716**	**0.8571**	**8.9441**	**0.0303**	**3.7459**	**0.0218**	**3.7678**	**0.9936**	**0.0201**	**1.0137**		**3,021.6840**	**3,021.6840**	**0.0600**		**3,023.1829**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**42.6115**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3716	0.8571	8.9441	0.0303	3.4529	0.0218	3.4748	0.9217	0.0201	0.9418		3,021.6840	3,021.6840	0.0600		3,023.1829
Total	**1.3716**	**0.8571**	**8.9441**	**0.0303**	**3.4529**	**0.0218**	**3.4748**	**0.9217**	**0.0201**	**0.9418**		**3,021.6840**	**3,021.6840**	**0.0600**		**3,023.1829**

3.7 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4677	113.7859	27.5190	0.3504	11.1672	0.3337	11.5008	2.9723	0.3192	3.2915		37,448.0344	37,448.0344	1.7423		37,491.5907
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0641	0.0418	0.4270	1.3800e-003	0.1643	9.8000e-004	0.1653	0.0436	9.0000e-004	0.0445		137.7620	137.7620	2.9400e-003		137.8355
Total	**3.5319**	**113.8277**	**27.9460**	**0.3518**	**11.3315**	**0.3346**	**11.6661**	**3.0159**	**0.3201**	**3.3360**		**37,585.7964**	**37,585.7964**	**1.7452**		**37,629.4261**

3.7 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**3.7079**	**0.1015**	**3.8094**	**1.5375**	**0.1015**	**1.6390**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4677	113.7859	27.5190	0.3504	10.3392	0.3337	10.6729	2.7691	0.3192	3.0883		37,448.0344	37,448.0344	1.7423		37,491.5907
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0641	0.0418	0.4270	1.3800e-003	0.1514	9.8000e-004	0.1524	0.0404	9.0000e-004	0.0413		137.7620	137.7620	2.9400e-003		137.8355
Total	**3.5319**	**113.8277**	**27.9460**	**0.3518**	**10.4907**	**0.3346**	**10.8253**	**2.8095**	**0.3201**	**3.1296**		**37,585.7964**	**37,585.7964**	**1.7452**		**37,629.4261**

3.7 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**8.6733**	**1.4245**	**10.0978**	**3.5965**	**1.3105**	**4.9070**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3720	74.7009	24.8048	0.3365	20.1430	0.1367	20.2797	5.1756	0.1308	5.3064		36,005.2143	36,005.2143	1.5619		36,044.2619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0376	0.3923	1.3300e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		132.5300	132.5300	2.6300e-003		132.5957
Total	**2.4322**	**74.7385**	**25.1971**	**0.3378**	**20.3073**	**0.1377**	**20.4450**	**5.2192**	**0.1317**	**5.3509**		**36,137.7443**	**36,137.7443**	**1.5645**		**36,176.8576**

3.7 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**3.7079**	**0.1015**	**3.8094**	**1.5375**	**0.1015**	**1.6390**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3720	74.7009	24.8048	0.3365	18.5073	0.1367	18.6441	4.7741	0.1308	4.9050		36,005.2143	36,005.2143	1.5619		36,044.2619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0376	0.3923	1.3300e-003	0.1514	9.6000e-004	0.1524	0.0404	8.8000e-004	0.0413		132.5300	132.5300	2.6300e-003		132.5957
Total	**2.4322**	**74.7385**	**25.1971**	**0.3378**	**18.6588**	**0.1377**	**18.7965**	**4.8146**	**0.1317**	**4.9463**		**36,137.7443**	**36,137.7443**	**1.5645**		**36,176.8576**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1228**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0282	0.2942	1.0000e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		99.3975	99.3975	1.9700e-003		99.4468
Total	**0.0451**	**0.0282**	**0.2942**	**1.0000e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**99.3975**	**99.3975**	**1.9700e-003**		**99.4468**

3.8 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3705**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0282	0.2942	1.0000e-003	0.1136	7.2000e-004	0.1143	0.0303	6.6000e-004	0.0310		99.3975	99.3975	1.9700e-003		99.4468
Total	**0.0451**	**0.0282**	**0.2942**	**1.0000e-003**	**0.1136**	**7.2000e-004**	**0.1143**	**0.0303**	**6.6000e-004**	**0.0310**		**99.3975**	**99.3975**	**1.9700e-003**		**99.4468**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.2757	56.6477	174.8944	0.6155	63.6089	0.4912	64.1000	16.9774	0.4572	17.4345		62,189.1549	62,189.1549	2.0002		62,239.1600
Unmitigated	14.6883	59.0351	185.4809	0.6642	69.0193	0.5269	69.5462	18.4214	0.4905	18.9119		67,108.5138	67,108.5138	2.1247		67,161.6323

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	3,652.50	828.75	262.50	6,607,240	6,089,298
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Research & Development	9,537.22	1,609.30	940.17	17,986,109	16,576,178
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	13,189.72	2,438.05	1,202.67	24,593,349	22,665,477

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Light Industry	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
General Office Building	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
High Turnover (Sit Down Restaurant)	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Non-Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Research & Development	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Unenclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8092	7.3564	6.1794	0.0441		0.5591	0.5591		0.5591	0.5591		8,827.7135	8,827.7135	0.1692	0.1618	8,880.1721
NaturalGas Unmitigated	1.0290	9.3547	7.8580	0.0561		0.7110	0.7110		0.7110	0.7110		11,225.6857	11,225.6857	0.2152	0.2058	11,292.3944

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	867.288	9.3500e-003	0.0850	0.0714	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003		102.0338	102.0338	1.9600e-003	1.8700e-003	102.6402
General Office Building	16818.5	0.1814	1.6489	1.3851	9.8900e-003		0.1253	0.1253		0.1253	0.1253		1,978.6463	1,978.6463	0.0379	0.0363	1,990.4044
High Turnover (Sit Down Restaurant)	7403.95	0.0799	0.7259	0.6097	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.0524	871.0524	0.0167	0.0160	876.2286
High Turnover (Sit Down Restaurant)	9112.55	0.0983	0.8934	0.7505	5.3600e-003		0.0679	0.0679		0.0679	0.0679		1,072.0645	1,072.0645	0.0206	0.0197	1,078.4352
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	61216.1	0.6602	6.0016	5.0413	0.0360		0.4561	0.4561		0.4561	0.4561		7,201.8888	7,201.8888	0.1380	0.1320	7,244.6860
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0290**	**9.3547**	**7.8580**	**0.0561**		**0.7110**	**0.7110**		**0.7110**	**0.7110**		**11,225.6857**	**11,225.6857**	**0.2152**	**0.2058**	**11,292.3944**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0.672888	7.2600e-003	0.0660	0.0554	4.0000e-004		5.0100e-003	5.0100e-003		5.0100e-003	5.0100e-003		79.1633	79.1633	1.5200e-003	1.4500e-003	79.6337
General Office Building	11.7914	0.1272	1.1560	0.9711	6.9400e-003		0.0879	0.0879		0.0879	0.0879		1,387.2280	1,387.2280	0.0266	0.0254	1,395.4716
High Turnover (Sit Down Restaurant)	6.75847	0.0729	0.6626	0.5566	3.9800e-003		0.0504	0.0504		0.0504	0.0504		795.1139	795.1139	0.0152	0.0146	799.8389
High Turnover (Sit Down Restaurant)	8.31812	0.0897	0.8155	0.6850	4.8900e-003		0.0620	0.0620		0.0620	0.0620		978.6018	978.6018	0.0188	0.0179	984.4171
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	47.4947	0.5122	4.6563	3.9113	0.0279		0.3539	0.3539		0.3539	0.3539		5,587.6065	5,587.6065	0.1071	0.1024	5,620.8108
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**7.3564**	**6.1794**	**0.0442**		**0.5591**	**0.5591**		**0.5591**	**0.5591**		**8,827.7135**	**8,827.7135**	**0.1692**	**0.1618**	**8,880.1721**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Unmitigated	27.6474	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	27.6187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0287	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Total	**27.6474**	**2.8200e-003**	**0.3105**	**2.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**		**0.6666**	**0.6666**	**1.7400e-003**		**0.7101**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	27.6187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0287	2.8200e-003	0.3105	2.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003		0.6666	0.6666	1.7400e-003		0.7101
Total	**27.6474**	**2.8200e-003**	**0.3105**	**2.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**		**0.6666**	**0.6666**	**1.7400e-003**		**0.7101**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	50	1200	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

ISI Project - Existing Operations

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	105.00	1000sqft	2.41	105,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	190.7	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted for 2020.
Operations run only
Land Use -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	190.7
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4649	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003
Energy	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	298.6670	298.6670	0.0237	4.9900e-003	300.7463
Mobile	0.2424	1.0156	2.8682	8.9800e-003	0.7819	9.0000e-003	0.7909	0.2093	8.4400e-003	0.2178	0.0000	821.2782	821.2782	0.0296	0.0000	822.0184
Waste						0.0000	0.0000		0.0000	0.0000	19.8221	0.0000	19.8221	1.1715	0.0000	49.1083
Water						0.0000	0.0000		0.0000	0.0000	5.9206	12.1977	18.1183	0.6095	0.0146	37.6921
Total	**0.7186**	**1.1184**	**2.9555**	**9.6000e-003**	**0.7819**	**0.0168**	**0.7987**	**0.2093**	**0.0163**	**0.2256**	**25.7427**	**1,132.1447**	**1,157.8874**	**1.8343**	**0.0195**	**1,209.5672**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4649	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003
Energy	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	298.6670	298.6670	0.0237	4.9900e-003	300.7463
Mobile	0.2424	1.0156	2.8682	8.9800e-003	0.7819	9.0000e-003	0.7909	0.2093	8.4400e-003	0.2178	0.0000	821.2782	821.2782	0.0296	0.0000	822.0184
Waste						0.0000	0.0000		0.0000	0.0000	19.8221	0.0000	19.8221	1.1715	0.0000	49.1083
Water						0.0000	0.0000		0.0000	0.0000	5.9206	12.1977	18.1183	0.6095	0.0146	37.6921
Total	**0.7186**	**1.1184**	**2.9555**	**9.6000e-003**	**0.7819**	**0.0168**	**0.7987**	**0.2093**	**0.0163**	**0.2256**	**25.7427**	**1,132.1447**	**1,157.8874**	**1.8343**	**0.0195**	**1,209.5672**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2424	1.0156	2.8682	8.9800e-003	0.7819	9.0000e-003	0.7909	0.2093	8.4400e-003	0.2178	0.0000	821.2782	821.2782	0.0296	0.0000	822.0184
Unmitigated	0.2424	1.0156	2.8682	8.9800e-003	0.7819	9.0000e-003	0.7909	0.2093	8.4400e-003	0.2178	0.0000	821.2782	821.2782	0.0296	0.0000	822.0184

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	1,158.15	258.30	110.25	2,102,744	2,102,744
Total	1,158.15	258.30	110.25	2,102,744	2,102,744

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	186.8272	186.8272	0.0216	2.9400e-003	188.2418
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	186.8272	186.8272	0.0216	2.9400e-003	188.2418
NaturalGas Mitigated	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8399	111.8399	2.1400e-003	2.0500e-003	112.5045
NaturalGas Unmitigated	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8399	111.8399	2.1400e-003	2.0500e-003	112.5045

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	2.0958e+006	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8399	111.8399	2.1400e-003	2.0500e-003	112.5045
Total		**0.0113**	**0.1027**	**0.0863**	**6.2000e-004**		**7.8100e-003**	**7.8100e-003**		**7.8100e-003**	**7.8100e-003**	**0.0000**	**111.8399**	**111.8399**	**2.1400e-003**	**2.0500e-003**	**112.5045**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	2.0958e+006	0.0113	0.1027	0.0863	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8399	111.8399	2.1400e-003	2.0500e-003	112.5045
Total		**0.0113**	**0.1027**	**0.0863**	**6.2000e-004**		**7.8100e-003**	**7.8100e-003**		**7.8100e-003**	**7.8100e-003**	**0.0000**	**111.8399**	**111.8399**	**2.1400e-003**	**2.0500e-003**	**112.5045**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	2.15985e+006	186.8272	0.0216	2.9400e-003	188.2418
Total		**186.8272**	**0.0216**	**2.9400e-003**	**188.2418**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	2.15985e+006	186.8272	0.0216	2.9400e-003	188.2418
Total		**186.8272**	**0.0216**	**2.9400e-003**	**188.2418**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4649	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003
Unmitigated	0.4649	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0548					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003
Total	**0.4649**	**1.0000e-005**	**9.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8800e-003**	**1.8800e-003**	**1.0000e-005**	**0.0000**	**2.0000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0548					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8800e-003	1.8800e-003	1.0000e-005	0.0000	2.0000e-003
Total	**0.4649**	**1.0000e-005**	**9.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8800e-003**	**1.8800e-003**	**1.0000e-005**	**0.0000**	**2.0000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.1183	0.6095	0.0146	37.6921
Unmitigated	18.1183	0.6095	0.0146	37.6921

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	18.662 / 11.438	18.1183	0.6095	0.0146	37.6921
Total		**18.1183**	**0.6095**	**0.0146**	**37.6921**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	18.662 / 11.438	18.1183	0.6095	0.0146	37.6921
Total		**18.1183**	**0.6095**	**0.0146**	**37.6921**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.8221	1.1715	0.0000	49.1083
Unmitigated	19.8221	1.1715	0.0000	49.1083

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	97.65	19.8221	1.1715	0.0000	49.1083
Total		**19.8221**	**1.1715**	**0.0000**	**49.1083**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	97.65	19.8221	1.1715	0.0000	49.1083
Total		**19.8221**	**1.1715**	**0.0000**	**49.1083**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ISI Project - Existing Operations

Santa Clara County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	105.00	1000sqft	2.41	105,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	190.7	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted for 2020.
Operations run only
Land Use -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	190.7
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Energy	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Mobile	2.0032	7.0846	21.7539	0.0690	5.8546	0.0650	5.9196	1.5629	0.0610	1.6238		6,948.2327	6,948.2327	0.2396		6,954.2234
Total	**4.6131**	**7.6477**	**22.2375**	**0.0724**	**5.8546**	**0.1078**	**5.9625**	**1.5629**	**0.1038**	**1.6667**		**7,623.7754**	**7,623.7754**	**0.2526**	**0.0124**	**7,633.7820**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Energy	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Mobile	2.0032	7.0846	21.7539	0.0690	5.8546	0.0650	5.9196	1.5629	0.0610	1.6238		6,948.2327	6,948.2327	0.2396		6,954.2234
Total	**4.6131**	**7.6477**	**22.2375**	**0.0724**	**5.8546**	**0.1078**	**5.9625**	**1.5629**	**0.1038**	**1.6667**		**7,623.7754**	**7,623.7754**	**0.2526**	**0.0124**	**7,633.7820**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0032	7.0846	21.7539	0.0690	5.8546	0.0650	5.9196	1.5629	0.0610	1.6238		6,948.2327	6,948.2327	0.2396		6,954.2234
Unmitigated	2.0032	7.0846	21.7539	0.0690	5.8546	0.0650	5.9196	1.5629	0.0610	1.6238		6,948.2327	6,948.2327	0.2396		6,954.2234

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	1,158.15	258.30	110.25	2,102,744	2,102,744
Total	1,158.15	258.30	110.25	2,102,744	2,102,744

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
NaturalGas Unmitigated	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	5741.92	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Total		**0.0619**	**0.5629**	**0.4729**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**		**675.5197**	**675.5197**	**0.0130**	**0.0124**	**679.5340**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	5.74192	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Total		**0.0619**	**0.5629**	**0.4729**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**		**675.5197**	**675.5197**	**0.0130**	**0.0124**	**679.5340**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Unmitigated	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Total	**2.5480**	**1.0000e-004**	**0.0108**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0230**	**0.0230**	**6.0000e-005**		**0.0245**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Total	**2.5480**	**1.0000e-004**	**0.0108**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0230**	**0.0230**	**6.0000e-005**		**0.0245**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ISI Project - Existing Operations

Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	105.00	1000sqft	2.41	105,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	190.7	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E emissions factors adjusted for 2020.
Operations run only
Land Use -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	190.7
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Energy	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Mobile	1.7481	7.5157	21.6224	0.0643	5.8546	0.0654	5.9200	1.5629	0.0614	1.6242		6,472.6334	6,472.6334	0.2414		6,478.6681
Total	**4.3580**	**8.0787**	**22.1061**	**0.0676**	**5.8546**	**0.1082**	**5.9629**	**1.5629**	**0.1042**	**1.6670**		**7,148.1761**	**7,148.1761**	**0.2544**	**0.0124**	**7,158.2266**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Energy	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Mobile	1.7481	7.5157	21.6224	0.0643	5.8546	0.0654	5.9200	1.5629	0.0614	1.6242		6,472.6334	6,472.6334	0.2414		6,478.6681
Total	**4.3580**	**8.0787**	**22.1061**	**0.0676**	**5.8546**	**0.1082**	**5.9629**	**1.5629**	**0.1042**	**1.6670**		**7,148.1761**	**7,148.1761**	**0.2544**	**0.0124**	**7,158.2266**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7481	7.5157	21.6224	0.0643	5.8546	0.0654	5.9200	1.5629	0.0614	1.6242		6,472.6334	6,472.6334	0.2414		6,478.6681
Unmitigated	1.7481	7.5157	21.6224	0.0643	5.8546	0.0654	5.9200	1.5629	0.0614	1.6242		6,472.6334	6,472.6334	0.2414		6,478.6681

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	1,158.15	258.30	110.25	2,102,744	2,102,744
Total	1,158.15	258.30	110.25	2,102,744	2,102,744

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
NaturalGas Unmitigated	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	5741.92	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Total		**0.0619**	**0.5629**	**0.4729**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**		**675.5197**	**675.5197**	**0.0130**	**0.0124**	**679.5340**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	5.74192	0.0619	0.5629	0.4729	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5197	675.5197	0.0130	0.0124	679.5340
Total		**0.0619**	**0.5629**	**0.4729**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**		**675.5197**	**675.5197**	**0.0130**	**0.0124**	**679.5340**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Unmitigated	2.5480	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Total	**2.5480**	**1.0000e-004**	**0.0108**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0230**	**0.0230**	**6.0000e-005**		**0.0245**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0108	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0230	0.0230	6.0000e-005		0.0245
Total	**2.5480**	**1.0000e-004**	**0.0108**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0230**	**0.0230**	**6.0000e-005**		**0.0245**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Health Risk Assessment

Intuitive Surgical Campus Project
City of Sunnyvale

Prepared by:

Kimley-Horn and Associates, Inc.
765 The City Drive, Suite 200
Orange, California 92868
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714.939.1030

February 2020

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APPENDIX
Appendix A: Modeling Data

LIST OF ABBREVIATED TERMS

A	absorption factor from inhalation
AB	Assembly Bill
ACES	Advanced Collaborative Emissions Study
APN	Assessor's Parcel Number
APS	auxiliary power system
ASF	age sensitivity factor
AT	averaging time
ATCM	Air Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
C_{air}	air concentration from model
C_i	air concentration of substance
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CPF	cancer potency factor
DBR	daily breathing rate
DOORS	Diesel Off-Road Reporting System
DPM	Diesel Particulate Matter
DRRP	Diesel Risk Reduction Plan
Dose-air	dose through inhalation
ED	exposure duration
EF	exposure frequency
EMFAC	Emissions Factor Model
°F	Fahrenheit
FAH	fraction of time spent at home
FCAA	Federal Clean Air Act
GVWR	gross vehicle weight rating
HAP	hazardous air pollutant
HQ	health quotient
HRA	health risk assessment
kg	kilograms
L	liter
MICR	Maximum Individual Cancer Risk
mg	milligrams
$\mu g/m^3$	micrograms per cubic meter
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
OEHHA	Office Environmental Health Hazard Assessment
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PERP	Portable Equipment Registration Program
REL	Reference Exposure Level
REL_i	Reference Exposure Level of substance
$Risk_{inh\text{-}res}$	residential inhalation cancer risk
SB	Senate Bill
T-BACT	toxics best available control technology
TAC	Toxic Air Contaminant
U.S. EPA	United States Environmental Protection Agency
VMT	vehicle miles traveled

1 INTRODUCTION

The purpose of this Health Risk Assessment (HRA) is to evaluate potential health risks associated with Toxic Air Contaminants (TAC) including Diesel Particulate Matter (DPM) resulting from the implementation of the proposed Intuitive Surgical Campus Project in the City of Sunnyvale. This HRA was prepared in accordance with the requirements of the Bay Area Air Quality Management District (BAAQMD) and guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to determine if health risks are likely to occur from the Project. Technical data is included as see Appendix A: Modeling Data.

1.1 Project Location

The Project would be constructed on a site bisected by a roadway, creating a north Project area and south Project area in the City of Sunnyvale, Santa Clara County, California. The north site is located at 945 and 955 Kifer Road while the south site is located at 932 and 950 Kifer Road. *Figure 1: Regional Location* and *Figure 2: Project Vicinity Map*, depict the Project site in a regional and local context, respectively. The north site is approximately 15.6 acres while the south site is approximately 16.8 acres. Combined the project is approximately 32.4-acres. The Project includes four parcels, described as Assessor Parcel Numbers (APNs) 205-40-001; 205-40-002; 205-49-17; and 205-49-18. The sites are relatively flat at an approximate elevation of 59 to 71 feet above mean sea level.

Regional access to the site is from US Route 101, which is located approximately 1.1 miles north of the Project site. Local vehicular access to the site is provided from Lawrence Expressway and Central Expressway. The Project site is separated into two distinct parcels by the public rights-of-way of Kifer Road. The north site is bordered by Central Expressway to the north and Kifer Road to the south. The south site is bordered by Kifer Road to the north and Caltrain right-of-way. The new facilities on the south site would be connected to the north site across Kifer Road by a new private pedestrian bridge, helping to connect the sites and to reduce pedestrian traffic congestion at street level. The Project proposes four driveways along Kifer Road.

1.2 Project Description

The proposed Project would expand Intuitive's presence in Sunnyvale along Kifer Road with the development of a unified corporate campus and state of the art manufacturing and research and development (R&D) facility on four parcels near the existing Intuitive facilities. The proposed Project is located on approximately 32.4 acres and would accommodate approximately 3,500 employees in approximately 1.2 million square feet of development. The Project would allow Intuitive to integrate manufacturing, engineering and corporate offices in two connected buildings, supported by open space, recreation areas, an amenity building, dining venues and parking garages.

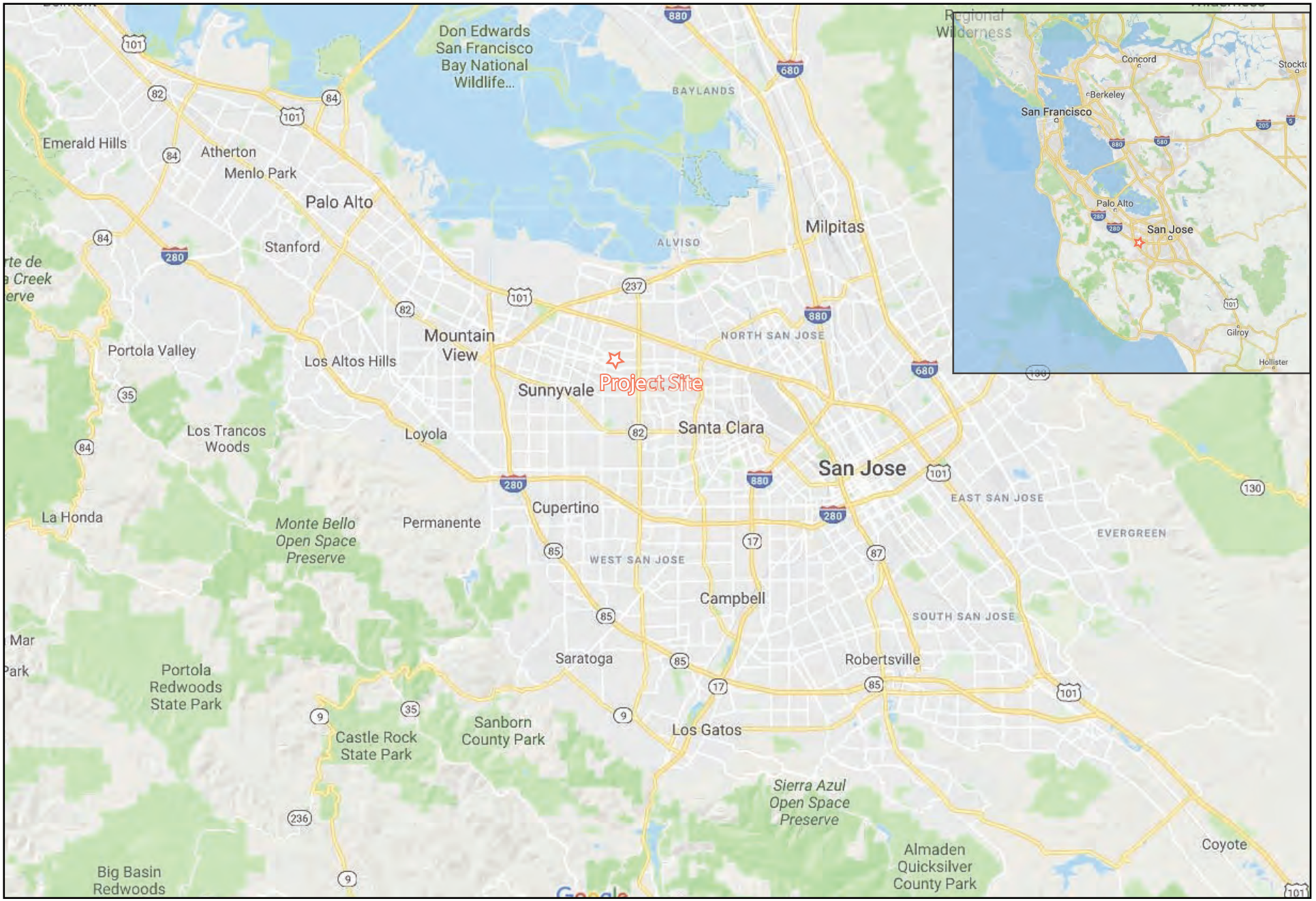
The new facility would replace an existing commercial building, and other smaller structures that were once part of an industrial facility on the two sites. The north site was previously used as a private recreation space for employees. The existing shade structure and amphitheater on the north site would remain. Refer to *Figure 3: Site Plan*.

The north site would include an approximately 363,000 square foot three-story office building with a new multi-purpose amenity building, outdoor sports fields and courts, and outdoor dining area. A new central utility plant would be constructed in the northeast portion of the site. All utility plant equipment, including chillers, cooling towers, and pumps, would be electrically powered and would not generate

toxic air contaminant (TAC) emissions. The utility plant for each building would have a diesel emergency backup generator that would be permitted by the BAAQMD. The north site would include two floors of underground parking and small surface visitor parking lot with approximately 825 stalls.

The south site would be home to an approximately 850,000 square foot, three-story manufacturing and research and development facility. There also would be a basement level, with a covered loading dock, manufacturing, storage and service space. The south site would include a five-story parking garage and visitor parking for a total of approximately 1,726 parking stalls. A utility plant would be constructed on the south west portion of the site adjacent to the parking structure. The Project Site (both the north and south Project areas) include bicycle parking, fire lanes, waste management areas, and security guard stations.

Project construction is anticipated to begin in mid-2020 and would last up to three years and would disturb a total of approximately 28-acres. The existing buildings (approximately 167,000 square feet) would be demolished. Heavy-duty off-road construction equipment would meet CARB Tier 4 Final emissions standards, which would minimize construction exhaust of nitrogen oxides (NO_X) and particulate matter (PM).



Source: Google Earth, 2019

Figure 1: Regional Location

Intuitive Surgical Campus Project

Not to scale

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Source: Nearmap, 2019

Figure 2: Project Site Vicinity

Intuitive Surgical Campus Project

Not to scale

Kimley»Horn

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Source: Foster & Partners

Figure 3: Site Plan

Intuitive Surgical Campus Project

Not to scale

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2 ENVIRONMENTAL SETTING

2.1 Climate

The Project is within the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma, and the southwestern portion of Solano County. SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

2.2 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are airborne substances capable of causing short-term (acute) and long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Hazardous Air Pollutants (HAP) is a term used by the Federal Clean Air Act (FCAA) that includes a variety of pollutants generated or emitted by industrial production activities. Identified as TACs under the California Clean Air Act (CCAA), have been singled out through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. The California Air Resources Board (CARB) provides emission inventories for only the larger air basins.

Industrial facilities and mobile sources are significant sources of TACs. In addition to industrial sources, various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Diesel particulate matter (DPM) was identified as a TAC by CARB in 1998. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of DPM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.

TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports.

Toxic contaminants often result from fugitive emissions during fuel storage and transfer activities, and from leaking valves and pipes. For example, the electronics industry, including semiconductor manufacturing, uses highly toxic chlorinated solvents in semiconductor production processes. Sources of air toxics go beyond industry, however. Automobile exhaust also contains toxic air pollutants such as benzene and 1,3-butadiene.

In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total DPM emissions, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total DPM. CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan (DRRP), the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Reporting System (DOORS). The PERP and DOORS programs allow owners or operators of portable engines and certain other types of equipment to register their units to operate their equipment throughout California without having to obtain individual permits from local air districts.

As stated above, diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by OEHHA. CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. California has identified diesel exhaust particles as a carcinogen.

2.3 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive receptors that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors near the Project site include existing multi-family communities to the south of the Project site. *Table 1: Sensitive Receptors* lists the distances and locations of the nearest sensitive receptors within the Project vicinity.

Table 1: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
Multi-Family residences	120 feet south
Single-Family residences	1,990 feet west
Multi-Family residences	2,725 feet north
5 Star School for Music	0.3 miles north
Ellis Elementary School	0.7 miles southwest
Ponderosa Park	0.7 mile south
Murphy Park	1-mile northwest

3 REGULATORY SETTING

3.1 Federal

Federal Clean Air Act

The FCAA was amended in 1990 to address the numerous air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. 188 specific pollutants and chemical groups were initially identified as HAPs, and the list has been modified over time. The FCAA Amendments included new regulatory programs to control acid deposition and for the issuance of stationary source operating permits.

In 2001, the United States Environmental Protection Agency (U.S. EPA) issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health: benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and DPM. More recently, the U.S. EPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the criteria pollutants, toxics do not have National Ambient Air Quality Standards (NAAQS) making evaluation of their impacts less uniform.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) were incorporated into a greatly expanded program for controlling toxic air pollutants. The provisions for attainment and maintenance of the NAAQS were substantially modified and expanded. Other revisions included provisions regarding stratospheric ozone protection, increased enforcement authority, and expanded research programs.

Section 112 of the FCAA Amendments governs the federal control program for HAPs. NESHAPs are issued to limit the release of specified HAPs from specific industrial sectors. These standards are technology-based, meaning that they represent the best available control technology an industrial sector could afford. The level of emissions controls required by NESHAPs are not based on health risk considerations because allowable releases and resulting concentrations have not been determined to be safe for the public. The FCAA does not establish air quality standards for HAPs that define legally acceptable concentrations of these pollutants in ambient air.

Federal Emissions Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, the U.S. EPA established a series of increasingly strict emission standards for new engines, starting in 1988. The U.S. EPA promulgated the final and cleanest standards with the 2007 Heavy-Duty Highway Rule.[1] The PM emission standard of 0.01 gram per horsepower-hour (g/hp-hr) is required for new vehicles beginning with model year 2007. Also, the NO_X and nonmethane hydrocarbon (NMHC) standards of 0.20 g/hp-hr and 0.14 g/hp-hr, respectively, were phased in together between 2007 and 2010 on a percent of sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

[1] United States Environmental Protection Agency (U.S. EPA), *Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*, Final Rule. 40 Code of Federal Regulations, Parts 69, 80, and 86. January 18, 2001.

Emission Standards for Nonroad Diesel Engines

To reduce emissions from off-road diesel equipment, the U.S. EPA established a series of cleaner emission standards for new off-road diesel engines. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006. Tier 3 standards were phased in from 2006 to 2008. Tier 4 standards, which generally require add-on emission control equipment to attain them, are being phased in from 2008 to 2015.

3.2 State of California

California Air Resources Board

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807 the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by State statute, such as AB 2588. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the AB 2588 was amended by Senate Bill (SB) 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (DRRP) in October 2000. The DRRP's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline[2]. CARB estimates that emissions of DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects.[3] The DRRP includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce PM and NO_X emissions from existing diesel vehicles operating in California. The regulation requires PM retrofits

[2] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

[3] California Air Resources Board, *Overview: Diesel Exhaust & Health*, available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health, accessed on November 5, 2019.

on all diesel trucks and buses that operate in California (i.e., existing vehicles are required to be upgraded to reduce emissions). Heavier trucks must be retrofitted with PM filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses would need to have 2010 model year engines or equivalent.

The regulation applies to most privately-owned and federally-owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks and there are several extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of the CARB ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is to reduce public exposure to diesel particulate matter and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles. The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system (APS) for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, beginning in 2008, would require that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

3.3 Regional

Bay Area Air Quality Management District

The BAAQMD is the regional agency tasked with managing air quality in the region and has regulated TACs since the 1980s. The CCAA provides the BAAQMD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, CARB regulates motor vehicles and fuels for their emissions. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.

Under BAAQMD Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review), all nonexempt sources that possess the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The BAAQMD limits emissions and public exposure to TACs through a number of programs. Section 301 of Regulation 2, Rule 2 requires Best Available Control Technology (BACT) is triggered for any new or modified source with the potential to emit specific levels

of pollutants. The BAAQMD prioritizes TAC-emitting stationary sources for regulation based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Community Air Risk Evaluation Program

The BAAQMD's Community Air Risk Evaluation (CARE) program estimates and reports both local and regional impacts of TACs in the Bay Area. The objective of the CARE Program is to reduce health impacts linked to local air quality. The goals of the CARE Program are to: (1) identify areas where air pollution contributes most to health impacts and where populations are most vulnerable to air pollution; (2) apply sound scientific methods and strategies to reduce health impacts in these areas; and (3) engage community groups and other agencies to develop additional actions to reduce local health impacts. Information from the CARE program is used by the BAAQMD to design and focus effective mitigation measures in areas with highest impacts.

3.4 Local

City of Sunnyvale Land Use and Transportation Element

The City of Sunnyvale Land Use and Transportation Element (LUTE) EIR was adopted in April 2017. This assessment accounts for the applicable mitigation measures from the LUTE EIR, which are listed below:

> LUTE EIR Mitigation Measure 3.5.3:
>
> **NEW POLICY**: Prior to the issuance of grading or building permits, the City of Sunnyvale shall ensure that the Bay Area Air Quality Management District's (BAAQMD) basic construction mitigation measures from Table 8-1 of the BAAQMD 2011 CEQA Air Quality Guidelines (or subsequent updates) are noted on the construction documents.
>
> **NEW POLICY**: In the cases where construction projects are projected to exceed the BAAQMD's air pollutant significance thresholds for NO_X, PM_{10}, and/or $PM_{2.5}$, all off-road diesel-fueled equipment (e.g., rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, tractors) shall be at least California Air Resources Board (CARB) Tier 3 Certified or better.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Health Risk Analysis Thresholds

Project health risks are determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. The BAAQMD publishes the *California Environmental Quality Act (CEQA) Air Quality Guidelines*, which were most recently updated in May 2017. The BAAQMD thresholds for air toxic emissions that are used for this Project are shown below:

Individual Projects:

- **Excess Cancer Risk:** Emit contaminants that exceed the maximum individual cancer risk of 10 in one million.
- **Non-Cancer Risk:** Emit contaminants that exceed the maximum hazard quotient of 1.0 in one million.
- **Ambient $PM_{2.5}$ Concentration:** Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 µg/m^3

Cumulative Thresholds:

- **Excess Cancer Risk:** Emit contaminants that would contribute to cumulative emissions, resulting in an exceedance of the maximum individual cancer risk of 100 in one million.
- **Non-Cancer Risk:** Emit contaminants that that would contribute to cumulative emissions, resulting in an exceedance of the maximum hazard quotient of 10.0 in one million.
- **Ambient $PM_{2.5}$ Concentration:** Incremental increase in average cumulative annual $PM_{2.5}$ concentration of greater than 0.8 µg/m^3

Cancer risk is expressed in terms of expected incremental incidence per million population. The BAAQMD has established an individual project incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk. This threshold serves to determine if a given project has a potentially significant development-specific and cumulative impact. The 10 in one million standard is a health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in one million which is 100 times more than the BAAQMD's threshold of 10 in one million.

The BAAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a hazard index (HI), expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A HI less than 1.0 means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

The 2017 BAAQMD CEQA Air Quality Guidelines recommend assessing impacts within 1,000 feet of the project. The 1,000-foot radius is consistent with findings in CARB's *Air Quality and Land Use Handbook*

(2005) and the California Health & Safety Code §42301.6 (Notice for Possible Source Near School). The CARB *Air Quality and Land Use Handbook* found that TAC concentrations are reduced substantially at a distance 1,000 feet downwind from sources such as freeways or large distribution centers.

4.2 Methodology

The air dispersion modeling for the HRA was performed using the U.S. EPA AERMOD dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources (not a factor in this case). AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Surface and upper air meteorological data is provided by CARB. Surface and upper air meteorological data from the Moffett Federal Airfield Monitoring Station was selected as being the most representative for meteorology based on proximity to the Project site.

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors. Operational activities would also include the use of emergency backup generators and heavy-duty diesel trucks.

Construction Risk

Construction would generate DPM emissions from the use of off-road diesel equipment required for grading and excavation, paving, and other construction activities. For construction activity, DPM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment were included in the analysis, although they are typically less of a concern because they would not stay on the site for long durations. Diesel exhaust from construction equipment operating at the site potentially poses a health risk to nearby sensitive receptors. The closest sensitive receptors to the Project site are residences approximately 120 feet south of the site boundary. The nearest school to the Project site is a private music school located approximately 0.3 miles (1,580 feet) north of the site.

Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The use of diesel-powered construction equipment would be episodic and would occur throughout the Project site. Heavy-duty off-road construction equipment would be required by the Land Use and Transportation Element of the City's General Plan to meet CARB Tier 3 Final emissions standards, which would minimize construction exhaust. Additionally, construction activities would limit idling to no more than five minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. Furthermore, even during the most intense year of construction, emissions of DPM would be generated from different locations on the Project Site rather than in a single location because different types of construction activities (e.g., site preparation and building construction) would not occur at the same place at the same time.

The emission source in the model are line volume sources (comprised of smaller adjacent volume sources)[4] throughout the Project site. Heavy duty vehicle emissions were assigned a release height (i.e., average stack height) of 10 feet (3.11 meters), and a plume height of 20 feet (6.22 meters).[5]

Project construction would include a temporary concrete batch plant which would be located on the northern portion of the south site along Kifer Road. The Project would require approximately 138,000 cubic yards (cy) of concrete, and approximately 60 percent would be produced in the on-site batch plant. For the purposes of this analysis, emissions associated with 138,000 cy have been modeled. Typical concrete batch plant equipment includes conveyors, elevators, elevated storage bins and silos, weight hoppers, and mixers. The concrete batch plant would operate during the construction phase and would be decommissioned once construction of the basement is completed. Concrete batch plant TACs are emitted from the storage and handling of cement, aggregate, sand, and fly ash. The main fugitive dust sources consist of fugitive dust from the cement and fly ash delivery to storage silos, from the loading of the cement, aggregate, sand and fly ash to the weight hoppers prior to the mixing process to form concrete, and from wind-blown dust from the active sand and aggregate storage piles.

Cement and fly ash are a source of several metals that have been identified as TACs by CARB. Concrete production is also associated with the release of crystalline silica emissions. Potential emissions were calculated using EPA AP-42 equations and emission factors[6]. It was assumed that the concrete batch plant equipment meets the appropriate best available control technologies (BACT) prescribed by the BAAQMD for such facilities, including the use of water sprays for aggregate handling and storage piles, enclosures, and venting of cement handling and storage to baghouse.

The concrete batch plant was modeled as a volume source located in the northern portion of the south site. The volume source emissions were assigned a release height of 49 feet (15 meters). Due to the location and spacing of the nearby sensitive receptors in the Project area, receptors were modeled with 60-meter grid spacing. In addition, National Elevation Dataset (NED) terrain data was imported into AERMOD for the Project area.

Although Project construction would occur for over a period of up to three years and the health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 3-year exposure scenario as recommended by the BAAQMD, and thus is conservative.[7] The cancer risk calculations were based on applying age sensitivity weighting factors for each emissions period modeled. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the OEHHA Guidance Manual. Only the risk associated with the worst-case location of the proposed Project was assessed.

Maximum (worst case) $PM_{2.5}$ exhaust construction emissions over the entire construction period were used in AERMOD to approximate construction DPM emissions. Risk levels were calculated according to

[4] Construction emissions would occur from heavy-duty equipment operating throughout the Project site. These sources were characterized as multiple volume sources (modeled as adjacent line volume sources that cover the disturbed areas of the project site) to represent construction equipment.

[5] Release height and plume heights were calculated consistent with guidance in the U.S. Environmental Protection Agency, *Haul Road Workgorup Final Report Submission to EPA-OAQPS*, March 2, 2012.

[6] U.S. Environmental Protection Agency, *AP-42 Section 11.12 Concrete Batching*, 2006.

[7] The BAAQMD recommends that the cancer risk be evaluated assuming that the average daily dose for short-term exposure lasts a minimum of three years for projects lasting three years or less (BAAQMD, *BAAQMD Air Toxics NSR Program Health Risk Assessment Guidelines*, December 2016).

the California Office of Environmental Health Hazard Assessment (OEHHA) guidance document, *Air Toxics Hot Spots Program Risk Assessment Guidelines* (February 2015).

Operational Risk

Land uses that generate substantial amounts of TAC emissions include warehouses, distribution centers, etc. The proposed Project does not propose any major sources of stationary emissions or warehouses, distribution centers, or other uses requiring substantial amounts of diesel traffic. However, the Project includes two emergency backup generators that would result in DPM emissions. Emergency backup generators are regulated by BAAQMD and typically have testing and maintenance limited to 50 hours per year, per CARB ATCM 93115.6(A)(3) and BAAQMD permit conditions. Each generator would be a 1,200 horsepower CARB certified Tier 4 diesel generator or a model that produces less TAC emissions. All utility plant equipment, including chillers, cooling towers, and pumps, would be electrically powered and would not generate emissions. Refer to Appendix A for source parameters and activity data used to conduct modeling.

Project operations also would include use of heavy-duty vehicles for deliveries. Heavy-duty vehicle emissions were estimated using the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. EMFAC2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled (VMT) by speed, and number of starts per day. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment. $PM_{2.5}$ emissions were used as a proxy for DPM. An emissions rate (in grams per second) was calculated from the emissions generated by EMFAC2017.

The air dispersion modeling for the operational risk assessment was performed using AERMOD. Emergency backup generators were modeled as point sources with a release height of 6.1 meters. Heavy-duty vehicle emissions were modeled as adjacent line volume sources and assigned a release height of 10 feet (3.11 meters), a plume height of 20 feet (6.22 meters). The loading areas for the Site (as shown on Figure 3) are located on the south side of the building located on the south site and the northeast corner of the building on the north site. The loading area on the north site is subterranean. Project delivery truck routes on Kifer Road and north on Wolfe Road have been modeled within 1,000 feet of the Project as line sources in AERMOD (see Appendix A).

AERMOD was run to obtain the peak 1-hour and annual average concentration in micrograms per cubic meter ($\mu g/m^3$) at the nearby sensitive receptors. The annual average concentrations were used to calculate the Maximum Individual Cancer Risk (MICR), the maximum chronic HI, as well as peak hourly concentrations to calculate the health impact from substances with acute non-cancer health effects. To achieve these goals, a receptor grid was placed over the Project site to cover the zone of impact. Due to the size of the Project site, nearby sensitive receptors were modeled with a 60-meter (196.85-foot) grid spacing. In addition, National Elevation Dataset (NED) terrain data was imported into AERMOD for the Project. The modeling and analysis was prepared in accordance with the BAAQMD Modeling Guidance for AERMOD[8].

[8] Bay Area Air Quality Management District, *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016.

Risk and Hazard Assessment

Cancer Risk. Based on the OEHHA methodology, residential inhalation cancer risk from annual average DPM and benzene concentrations are calculated by multiplying the daily inhalation dose, cancer potency factor, age sensitivity factor (ASF), frequency of time spent at home, and exposure duration divided by averaging time, yielding the excess cancer risk. These factors are discussed in more detail below. It is important to note that exposure duration (residency time) is based on continual operation of the proposed Project. Exposure through inhalation (Dose-air) is a function of breathing rate, exposure frequency, and concentration of substance in the air. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\text{Dose-air} = C_{air} * (BR/BW) * A * EF * 10^{-6}$$

Where:

Dose-air	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (µg/m^3) from air dispersion model
(BR/BW)	=	daily breathing rate normalized to body weight (L/kg bodyweight-day)
A	=	inhalation absorption factor (unitless)
EF	=	exposure frequency (approximately 350 days per year for residential)
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to consider the increased sensitivity to carcinogens during early-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years. Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to age <2 years, 85 percent of time is spent at home; from age 2 through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.[9]

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

[9] California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidance Manual for Preparation of Health Risk Assessments, page 8-5*, February 2015.

$$Risk_{inh\text{-}res} = (Dose_{air}*CPF*ASF*(ED/AT)*FAH)$$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Chronic Non-Cancer Hazard. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\text{Hazard Quotient} = C_i/REL_i$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in µg/m^3)
RELi	=	Chronic noncancer Reference Exposure Level for substance i (µg/m^3)

Acute Non-Cancer Hazard. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts. The equation is as follows:

$$\text{Acute HQ} = \text{Maximum Hourly Air Concentration (µg/m}^3\text{)} / \text{Acute REL (µg/m}^3\text{)}$$

5 POTENTIAL HEALTH RISK IMPACTS

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel exhaust is composed of two phases, either gas or particulate – both contribute to the risk. The gas phase is composed of many of the urban TACs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the Project would be located 120 feet from the closest sensitive receptors (i.e., within the BAAQMD 1,000-foot zone of influence) an analysis of health risk impacts form TACs was performed using the U.S. EPA-approved AERMOD model for both Project construction and operations.

5.1 Construction Heath Risk Analysis

The duration of construction activities for the Project is estimated to take approximately three years. The Project would demolish approximately 50,000 tons of existing industrial use buildings. The Project would develop a manufacturing and R&D facility on two Project areas (the Project site is bisected by Kifer Road). The Project would include approximately 1,213,000 sf of office space, amenity buildings, and approximately 2,551 parking spaces.

Construction-related activities would result in Project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations. Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors. Sensitive receptors near the Project site include: multi-family residences approximately 120 feet south of the site, across the railroad tracks.

The Project would include a temporary concrete batch plant that would be located in the northern part of the south site, approximately 400 feet north of the nearest multi-family residences. The concrete batch plant is anticipated to generate a maximum of approximately 138,000 cy over 22 months of construction. The batch plant would include the equipment, loader, silos, and storage piles.

$PM_{2.5}$ construction emissions rates in grams per second were calculated from the total annual mitigated on-site exhaust emissions reported in CalEEMod (0.29 tons unmitigated and 0.03 tons per year mitigated) total during construction. It should be noted that although construction would span over several years, the modeling conservatively uses the year with the highest emission for each phase. Annual emissions were converted to grams per second and these emissions rates were input into AERMOD.

As noted above, maximum (worst case) $PM_{2.5}$ exhaust construction emissions over the entire construction period were used in AERMOD to approximate construction DPM emissions. Risk levels were calculated based on the California Office of Environmental Health Hazard Assessment (OEHHA)

guidance document, Air Toxics Hot Spots Program Risk Assessment Guidelines (February 2015). Results of this assessment are summarized in *Table 2: Construction Risk*. *Table 2* includes both unmitigated construction and construction with Tier 4 construction equipment.

Table 2: Construction Risk

Exposure Scenario	Pollutant Concentration (µg/m³)	Maximum Cancer Risk (Risk per Million)	Chronic Noncancer Hazard	Acute Noncancer Hazard
Unmitigated Construction (Tier 3)				
Unmitigated Construction	0.066	25.02	0.013	0.132
Concrete Batch Plant	0.005	0.06	0.004	0.00
Total	***0.071***	***25.08***	***0.017***	***0.132***
Threshold	*0.3*	*10 in one million*	*1.0*	*1.0*
Threshold Exceeded	**No**	**Yes**	**No**	**No**
Mitigated Construction (Tier 4)				
Mitigated Construction[1]	0.008	3.11	0.002	0.015
Concrete Batch Plant	0.005	0.06	0.004	0.00
Total	***0.013***	***3.17***	***0.006***	***0.015***
Threshold	*0.3*	*10 in one million*	*1.0*	*1.0*
Threshold Exceeded	**No**	**No**	**No**	**No**

1. Heavy-duty off-road construction equipment would also meet CARB Tier 4 Final emissions standards.
Refer to Appendix A: Modeling Data.

Results of this assessment indicate that the maximum concentration of $PM_{2.5}$ during construction would be 0.071 µg/m³ which is below the BAAQMD 0.3 µg/m³ significance threshold. The highest calculated carcinogenic risk from Project construction is 25.08 per million, which is above the BAAQMD threshold of 10 in one million. Non-cancer hazards for diesel PM would be below BAAQMD threshold, with a chronic hazard index computed at 0.017 and an acute hazard index of 0.132. Acute and chronic hazards would be below the BAAQMD significance threshold of 1.0. Mitigation Measure HRA-1 requires construction equipment to meet CARB Tier 4 Final emissions standards. With implementation of Mitigation Measure HRA-1, the maximum concentration of $PM_{2.5}$ during construction would be reduced to 0.013 µg/m³. Maximum cancer risk from project construction would decrease to 3.17 per million. Additionally, acute and chronic hazards would be lowered to 0.015 and 0.006 respectively. Therefore, with mitigation, construction risk levels would be less than BAAQMD thresholds.

5.2 Operational Health Risk Analysis

Based on the AERMOD outputs, the highest expected hourly average diesel $PM_{2.5}$ emission concentrations from diesel truck traffic at the Project site would be 0.003 µg/m³. The highest expected annual average diesel $PM_{2.5}$ emission concentrations at the Project site would be 0.014 µg/m³. The calculations conservatively assume no cleaner technology with lower emissions in future years. *Table 3: Operational Risk* shows the highest calculated carcinogenic risk at the closest sensitive receptors is 2.79 per million for residents, which is below the BAAQMD threshold of 10 per million. Acute and chronic hazards also would be below the BAAQMD significance threshold of 1.0.

Table 3: Operational Risk				
Exposure Scenario	**Pollutant Concentration (µg/m³)**	**Maximum Cancer Risk (Risk per Million)**	**Chronic Noncancer Hazard**	**Acute Noncancer Hazard**
Particulate Matter ($PM_{2.5}$)	0.0032	2.79	0.0007	0.0057
Total Organic Gases (TOG)	0.2366	1.24	0.0014	0.0006
Total	**0.2398**	**4.03**	**0.0021**	**0.0063**
Threshold	*NA*	*10 in one million*	*1.0*	*1.0*
Threshold Exceeded	**NA**	**No**	**No**	**No**
Refer to Appendix A: Modeling Data.				

The pollutant concentrations modeled in AERMOD represent the exposure levels outdoors. The BAAQMD conservatively does not include indoor exposure adjustments for residents. However, the typical person spends the majority of time indoors rather than remaining outdoors in the same location for 24 hours a day.[10] Therefore, the AERMOD outdoor pollutant concentrations are not necessarily representative of actual exposure at the Project site, and tend to overestimate exposure.

Cumulative Operational Impacts

In addition to mobile sources, stationary sources within a 1,000-foot-radius of the Project site were identified using BAAQMD's Stationary Source Screening Analysis Tools and consultation with the BAAQMD. As indicated in *Table 4: Cumulative Operational Health Risk*, TACs generated from the stationary and rail sources within a 1,000-foot-radius would not exceed BAAQMD thresholds. The two roadways within a 1,000-foot-radius of the nearest receptors are Kifer Road and Wolfe Road. Cumulative impacts related to residential cancer risk, $PM_{2.5}$, chronic hazard, and acute hazard would be less than cumulatively considerable and within acceptable limits.

Mitigation Measures:

HRA-1 **Off-Road Diesel-Powered Construction Equipment.** Prior to issuance of grading permits, the applicant shall prepare and submit documentation to the City of Sunnyvale that demonstrate that all off-road diesel-powered construction equipment greater than 50 horsepower meets California Air Resources Board Tier 4 Final off-road emissions standards.

[10] California Air Resources Board Research Division and University of California, Berkeley, *Activity Patterns of California Residents,* May 1991. The study indicates that on average, adults and adolescents in California spent almost 15 hours per day inside their homes, and 6 hours in other indoor locations, for a total of 21 hours (87% of the day). Approximately two hours per day were spent in transit, and just over one hour per day was spent in outdoor locations.

Table 4: Cumulative Operational Health Risk

Emissions Sources	Distance from Source to Receptor (m)[1]	$PM_{2.5}$ (µg/m³)	Cancer Risk (per million	Chronic Hazard	Acute Hazard
Mobile Sources					
Kifer Road	210	0.037	1.62	--	--
Wolfe Road	220	0.059	2.59	--	--
Rail Sources	10	0.242	88.26	0.048	0.097
Stationary Sources					
Proposed Project Operations	N/A	0.2398	4.03	0.0021	0.0063
AT&T Generator (Generator)	525	0.001	0.000	0.000	0.0
Applied Materials (Multiple)	380	0.063	1.539	0.004	0.0
Caliber Collision Center (Auto Body Coating)	565	0.000	0.000	0.000	0.0
City of Sunnyvale- Corporation Yard	525	0.000	0.002	0.000	0.0
City of Sunnyvale- Corporation Yard (Generator)	525	0.000	0.002	0.000	0.0
Cumulative Health Risk Values	N/A	0.642	97.5	0.054	0.103
BAAQMD Cumulative Threshold	N/A	*0.8*	*100*	*10*	*10*
Threshold Exceeded?	N/A	**No**	**No**	**No**	**No**

[1] Measured from facility boundary to sensitive receptor.
See Appendix A for Health Risk Calculator and Roadway Screening Calculator provided by BAAQMD.

6 REFERENCES

1. Bay Area Air Quality Management District, *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016.

2. California Air Pollution Control Officers Association, *Health Risk Assessment for Proposed Land Use Projects*, July 2009.

3. California Air Resources Board Research Division and University of California, Berkeley, *Activity Patterns of California Residents,* May 1991.

4. California Air Resources Board, *EMFAC 2017 Web Database*, Available at: www.arb.ca.gov/emfac/2017/, October 2019.

5. California Air Resources Board, *Overview: Diesel Exhaust & Health*, available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health, accessed on November 5, 2019.

6. California Air Resources Board, *Meteorological Files*, Available at: https://ww3.arb.ca.gov/toxics/harp/metfiles2.htm, accessed October 2019.

7. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

8. California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003.

9. California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidance Manual for Preparation of Health Risk Assessments*, February 2015.

10. City of Sunnyvale, *General Plan Land Use and Transportation Element*, April 2017.

11. Foster + Partners, *Intuitive 945/955 Kifer Road Development permit*, July 2019.

12. Health Effects Institute, *Advanced Collaborative Emissions Study (ACES): Lifetime Cancer and Non-Cancer Assessment in Rats Exposed to New-Technology Diesel Exhaust*, January 2015.

13. Lakes Environmental, *AERMOD View Gaussian Plume Air Dispersion Model*, Version 9.8.1

14. Ralph Propper, et al., *Ambient and Emission Trends of Toxic Air Contaminants in California*, Environmental Science and Technology, September 2015.

15. U.S. Environmental Protection Agency, *AP-42 Section 11.12 Concrete Batching*, 2006.

16. United States Environmental Protection Agency, *Exposure Factors Handbook: 2011 Edition*, September 2011.

17. United States Environmental Protection Agency, *Haul Road Workgorup Final Report Submission to EPA-OAQPS*, March 2, 2012.

Appendix A

Modeling Data

PROJECT TITLE:

Construction Sources



COMMENTS:	SOURCES: 2	COMPANY NAME:	
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		DATE: 1/15/2020	PROJECT NO.:

PROJECT TITLE:

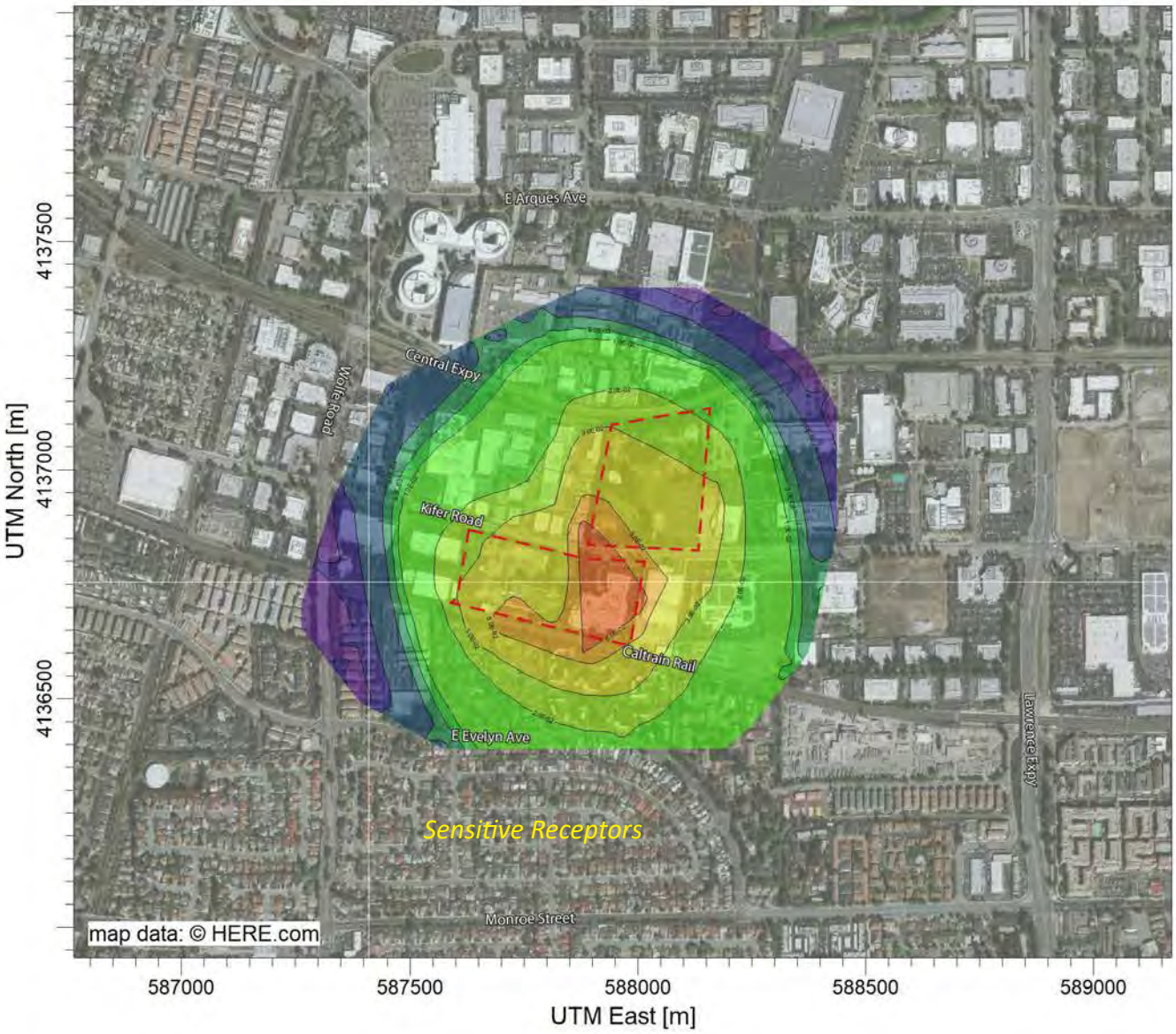
Concrete Batch Plant Source



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		DATE: **2/26/2020**	PROJECT NO.:

PROJECT TITLE:

Construction - Tier 3 Range of Risk Values



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

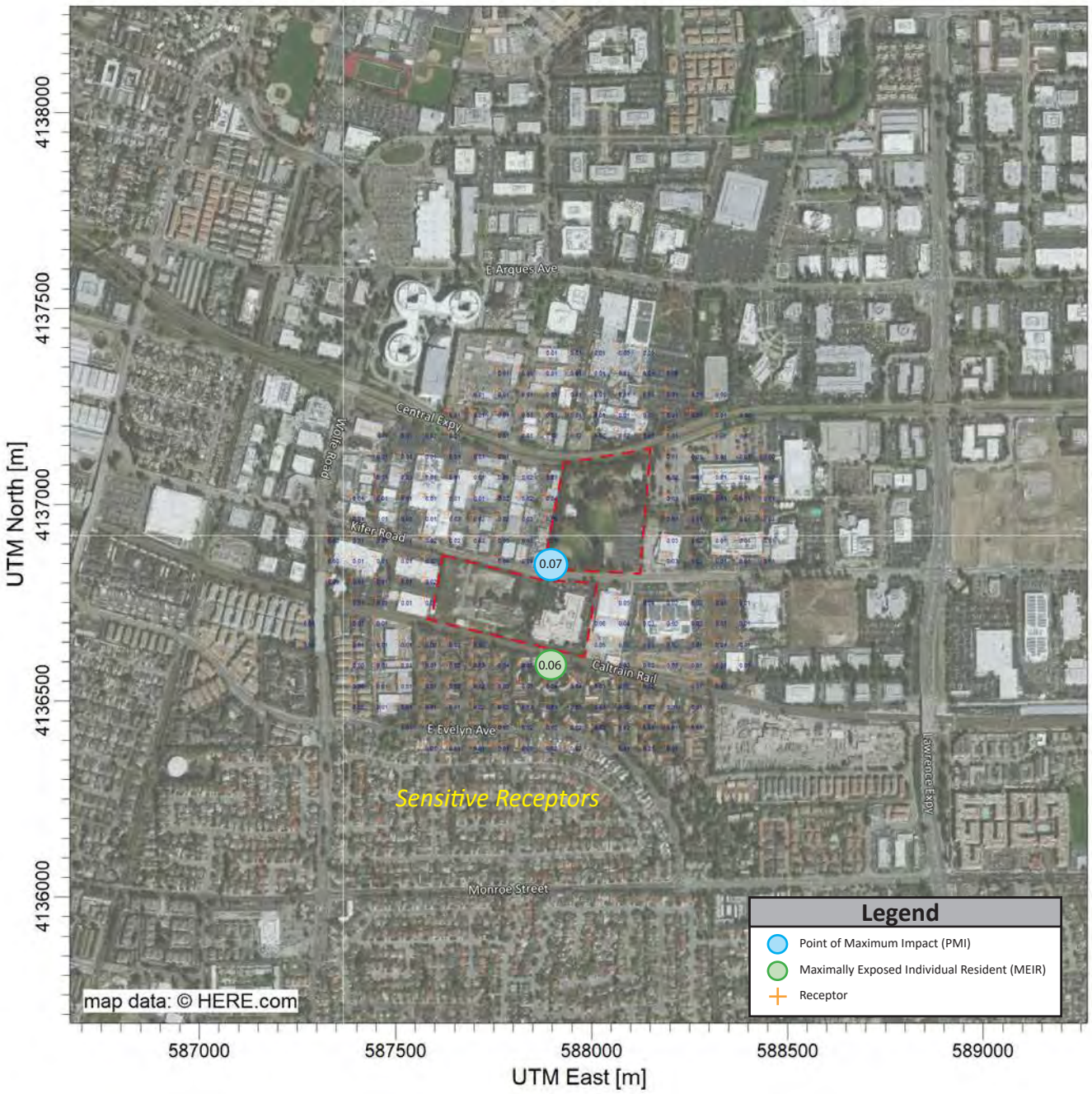
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COMMENTS:	SOURCES: 2	COMPANY NAME:	
	RECEPTORS: 238	MODELER:	
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PROJECT TITLE:

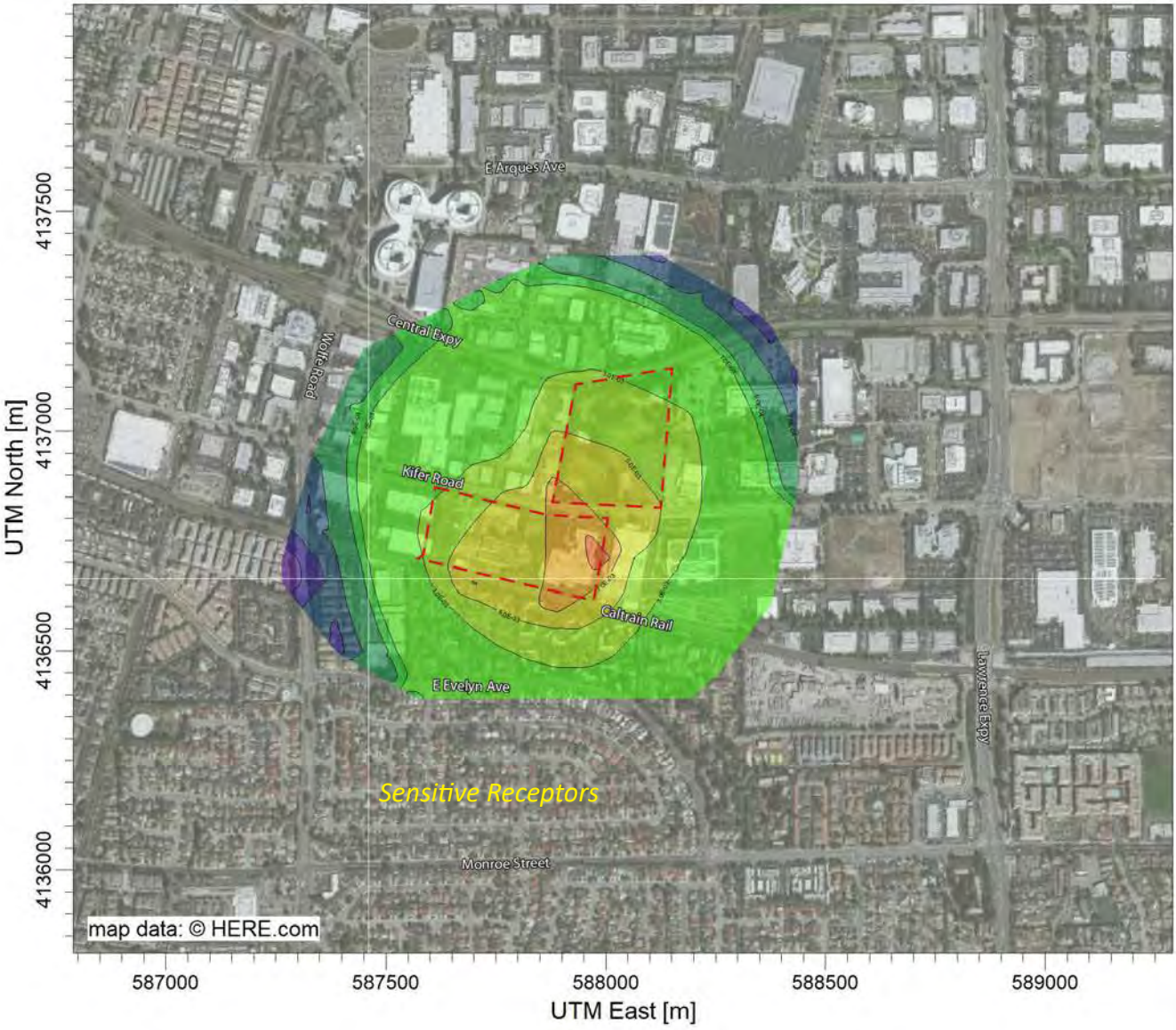
Construction - Tier 3 Receptors



COMMENTS:	SOURCES: **2**	COMPANY NAME:	
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PROJECT TITLE:

Construction - Tier 4 Range of Risk Values



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

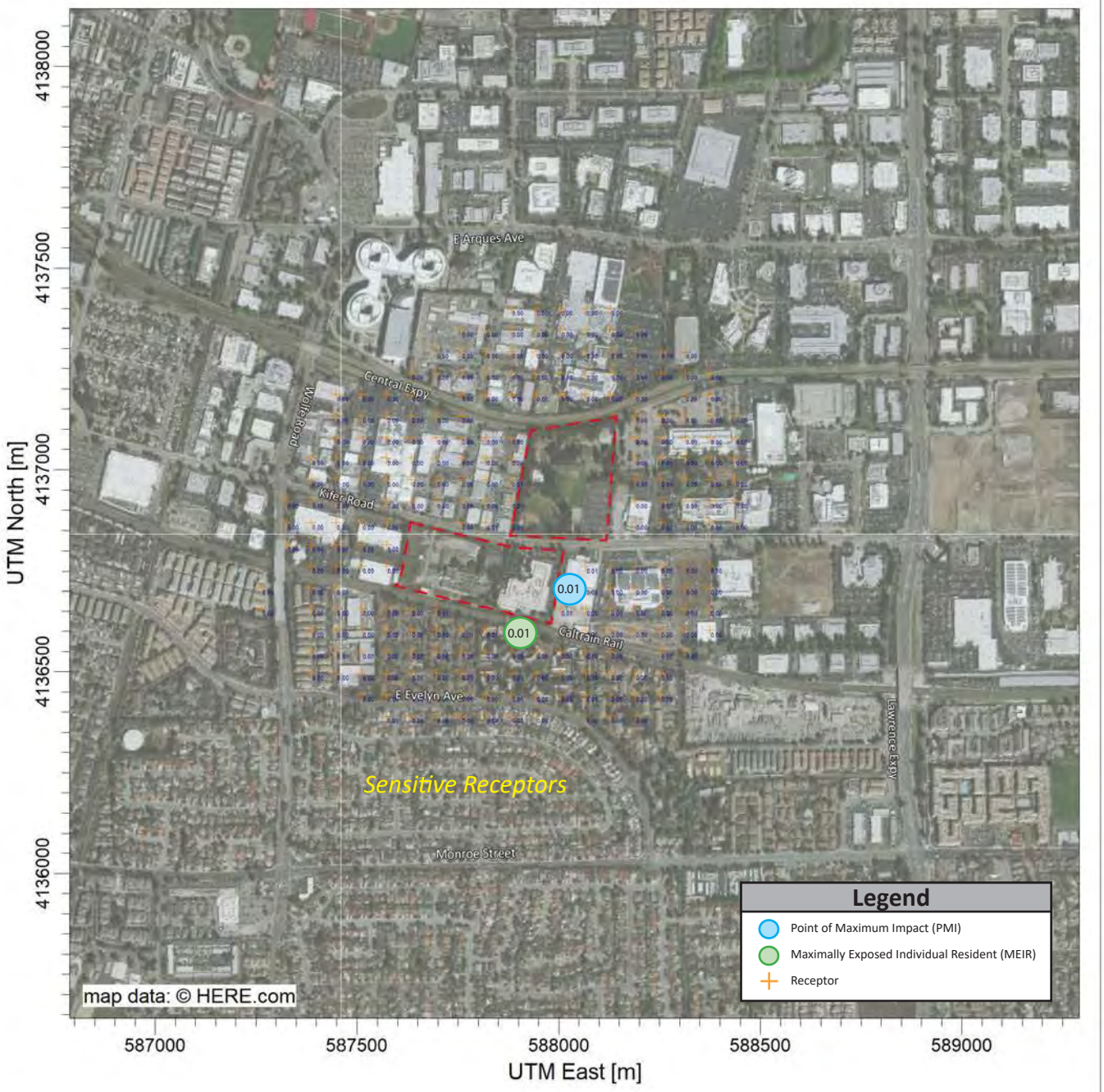
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4.1E-04 5.0E-04 6.0E-04 7.0E-04 9.0E-04 1.0E-03 3.0E-03 5.0E-03 7.0E-03 8.0E-03 8.1E-03

COMMENTS:	SOURCES: **2**	COMPANY NAME:	
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PROJECT TITLE:

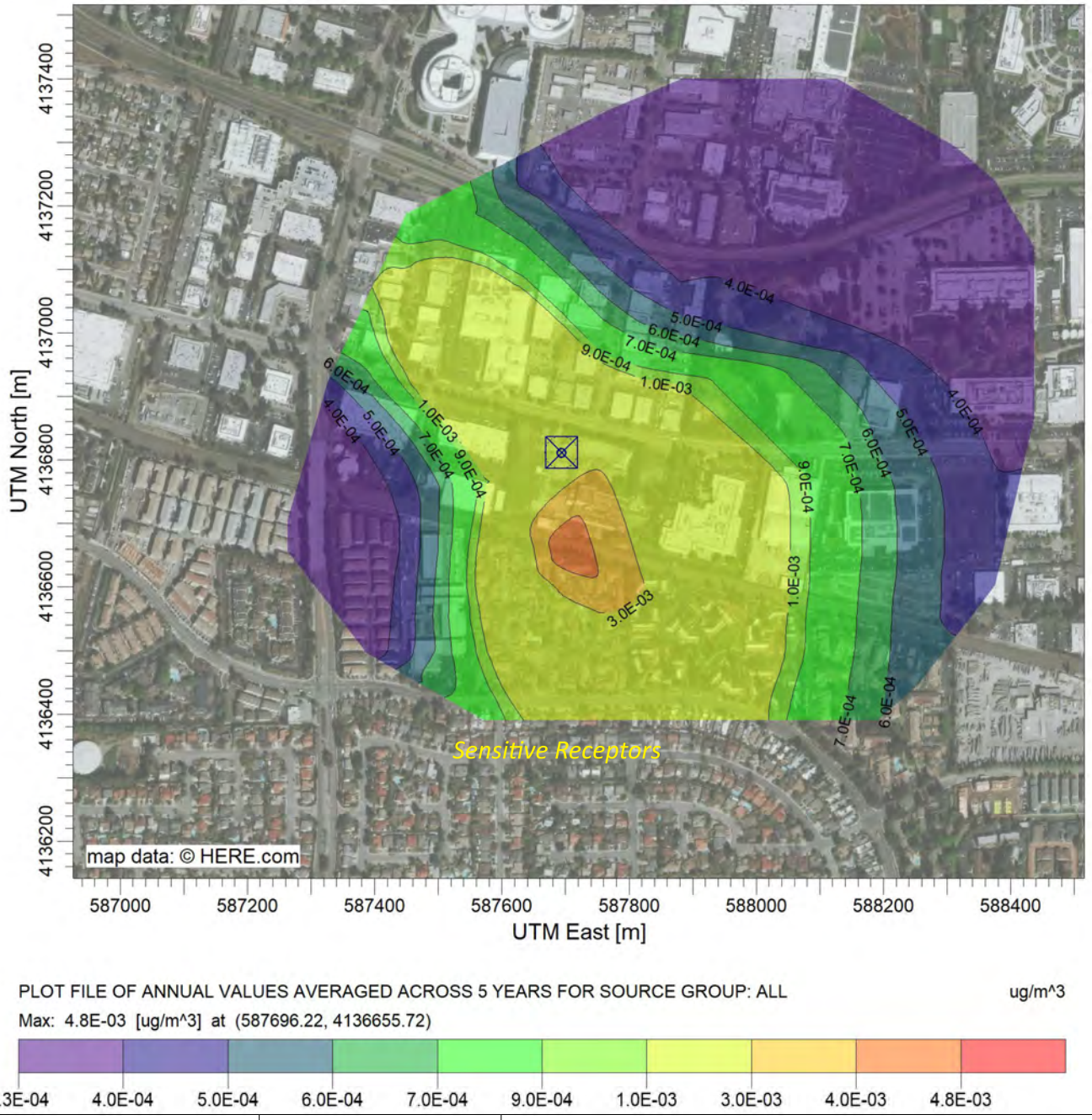
Construction - Tier 4 Receptors



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PROJECT TITLE:

Concrete Batch Plant - Range of Risk Values



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

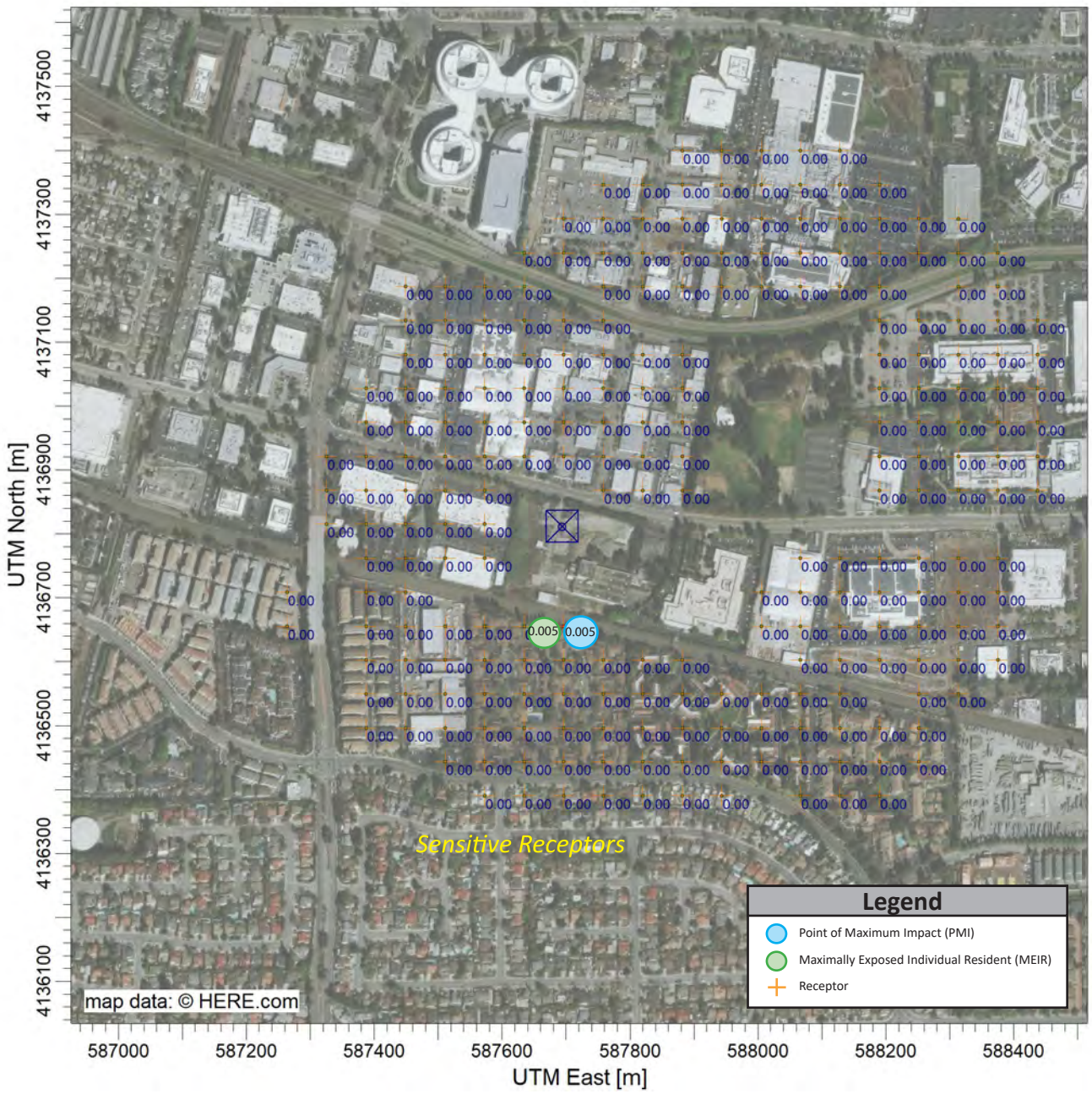
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1.3E-04 4.0E-04 5.0E-04 6.0E-04 7.0E-04 9.0E-04 1.0E-03 3.0E-03 4.0E-03 4.8E-03

COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **238**	MODELER:	
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PROJECT TITLE:

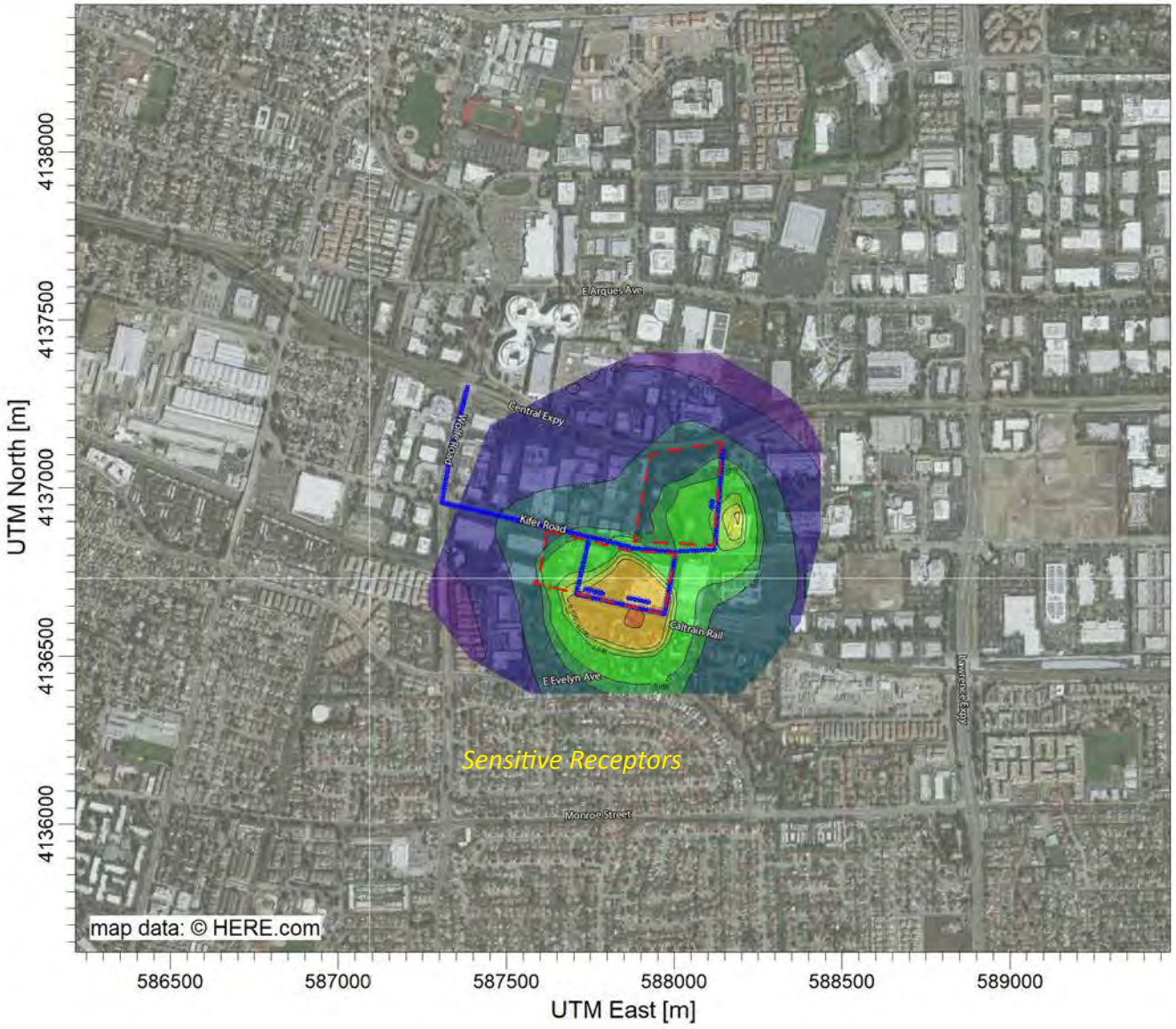
Concrete Batch Plant - Receptors



COMMENTS:	SOURCES: **1**	COMPANY NAME:	
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	MAX: **4.8E-03 ug/m^3**	DATE: **2/26/2020**	PROJECT NO.:

PROJECT TITLE:

Operational - Range of Risk Values TOG



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

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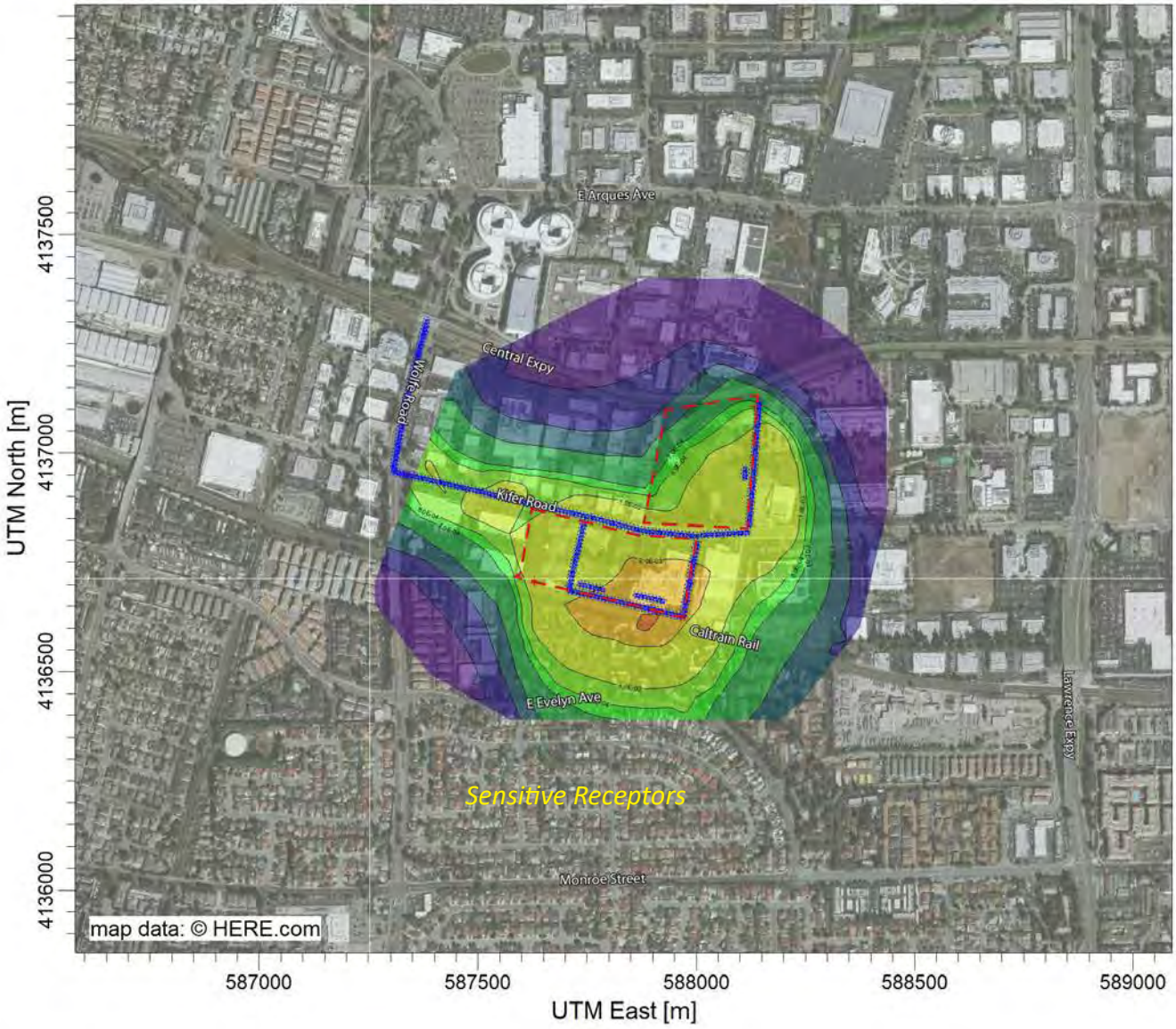
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	MAX: 0.237 ug/m^3	DATE: 1/15/2020	PROJECT NO.:

AERMOD View - Lakes Environmental Software

C:\Lakes\AERMOD View\Intuitive Original Earthwork\Intuitive Operational TOG\Intuitive Operational TOG.isc

PROJECT TITLE:

Operational - Range of Risk Values



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

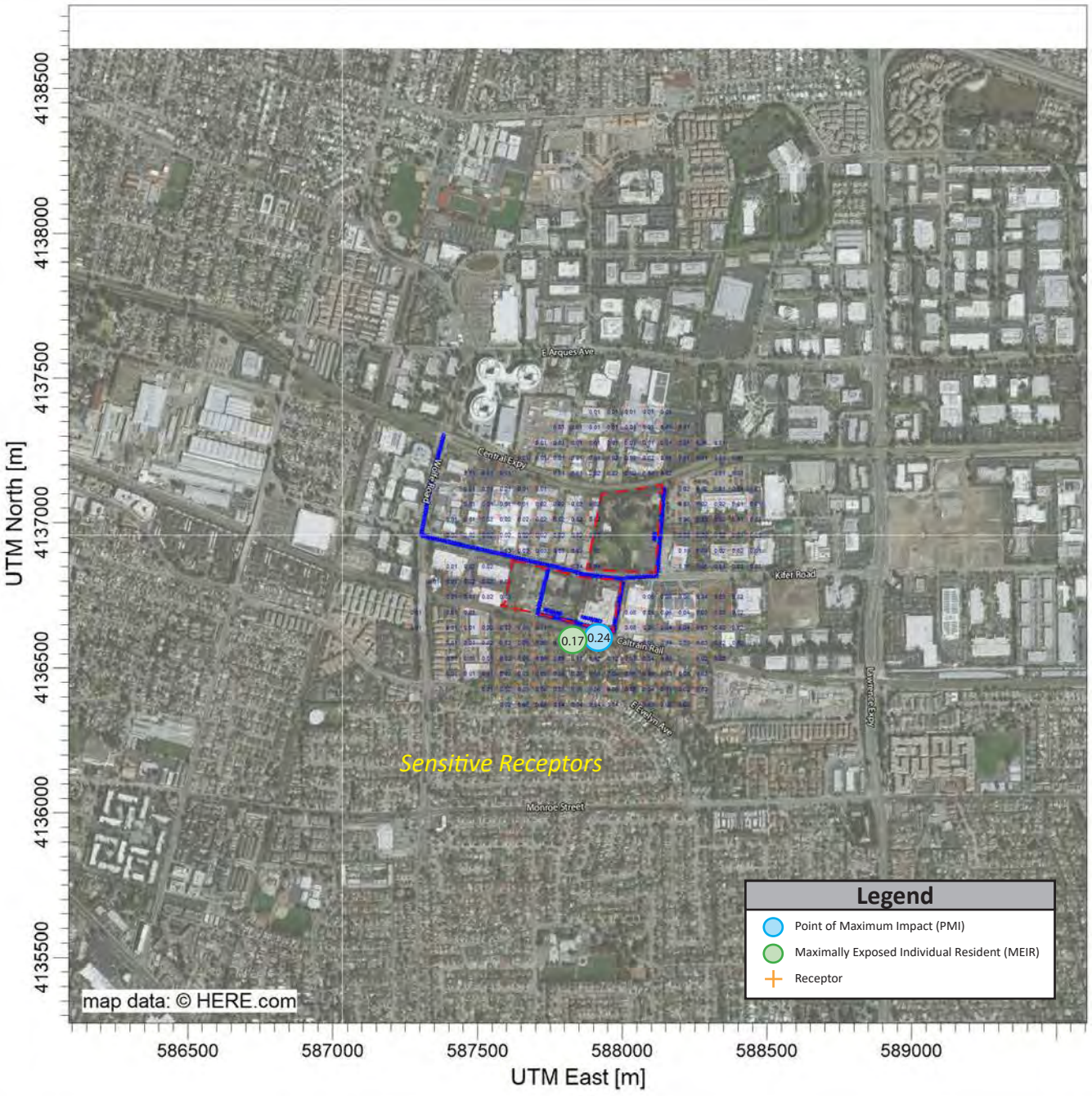
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1.3E-04 3.0E-04 4.0E-04 5.0E-04 7.0E-04 8.0E-04 1.0E-03 2.0E-03 3.0E-03 3.2E-03

COMMENTS:	SOURCES: **9**	COMPANY NAME:	
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PROJECT TITLE:

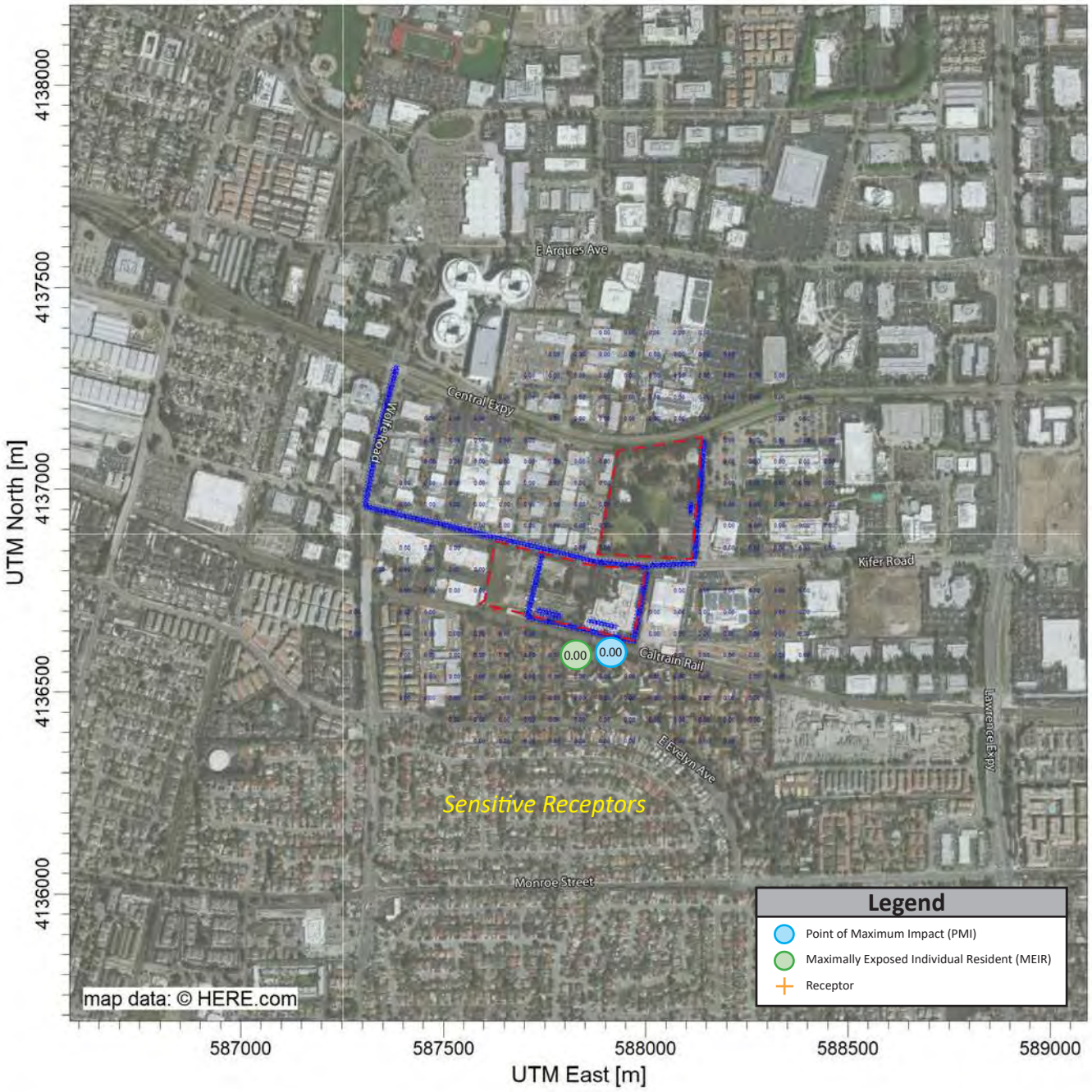
Operational - Receptors TOG



COMMENTS:	SOURCES: **9**	COMPANY NAME:	
	RECEPTORS: **228**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:22,106 — 0 — 0.5 km	
	MAX: **0.237 ug/m^3**	DATE: **1/15/2020**	PROJECT NO.:

PROJECT TITLE:

Operational - Receptors



COMMENTS:	SOURCES: **9**	COMPANY NAME:	
	RECEPTORS: **228**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:15,804 (0 — 0.5 km)	
	MAX: **3.2E-03 ug/m^3**	DATE: **1/15/2020**	PROJECT NO.:

PROJECT TITLE:

Operational Sources



COMMENTS:	SOURCES: 9	COMPANY NAME:	
	RECEPTORS: 228	MODELER:	
		SCALE: 1:15,804 (0 — 0.5 km)	
		DATE: 1/15/2020	PROJECT NO.:

Construction

		$PM_{2.5}$ On-Site Exhaust			
		Unmitigated		Mitigated	
Year	Phase	Tons/Year	g/s	Tons/Year	g/s
2020	Demolition	0.0138	3.97E-04	9.90E-04	2.85E-05
2020	Site Prep	0.0104	2.99E-04	6.80E-04	1.96E-05
2020	Grading	0.0357	1.03E-03	2.79E-03	8.03E-05
2021	Grading	0.0136	3.91E-04	1.07E-03	3.08E-05
2021	Trenching	0.0164	4.72E-04	9.10E-04	2.62E-05
2021	Building	0.0766	2.20E-03	9.80E-03	2.82E-04
2022	Building	0.0562	1.62E-03	6.61E-03	1.90E-04
2022	Paving	0.0131	3.77E-04	8.00E-04	2.30E-05
2023	Architectural Coating	5.23E-03	1.50E-04	2.20E-04	6.33E-06
		max:	2.20E-03	max:	2.82E-04
		0.24103		0.02387	
Max Site 1:			1.08E-03		1.38E-04
Max Site 2:			1.13E-03		1.44E-04

HARP 2 Risk Summary

					Unmitigated (Tier 3)				
						Cancer	Chronic	Acute	
INDEX	**GRP1**	**GRP2**	**POLID**	**POLABBREV**	**CONC**	**INH_RISK**	**RESP**	**CONC**	**RESP**
2			107028	Acrolein	0.00E+00	0.00E+00	0.00E+00	3.30E-01	
16			9901	DieselExhPM	6.57E-02	2.50E-05	1.31E-02	3.30E-01	1.32E-01
					Total	2.50E-05	1.31E-02		1.32E-01
					0.066	25.02	0.013		0.132

Mitigated (Tier 4)				
	Cancer	Chronic	Acute	
CONC	**INH_RISK**	**RESP**	**CONC**	**RESP**
0.00E+00	0.00E+00	0.00E+00	3.72E-02	1.49E-02
8.15E-03	3.11E-06	1.63E-03	3.72E-02	0.00E+00
Total	3.11E-06	1.63E-03		1.49E-02
0.008	3.11	0.002		0.015

Operational Emissions

Equipment	Fuel	Quantity	HP	LF	Total Hrs/Year	Emissions Factor (g/hp/hr) $PM_{2.5}$	Annual Emissions grams $PM_{2.5}$	Emissions Rate (g/sec)	Emissions Factor (g/hp/hr) TOG	Annual Emissions grams TOG	Emissions Rate (g/sec)
N Bldg Emergency Generator (Tier 4)	Diesel	1	1,200	0.74	50	0.03	1332	4.22E-05	1.120373	49744.5612	1.58E-03
S Bldg Emergency Generator (Tier 4)	Diesel	1	1,200	0.74	50	0.03	1332	4.22E-05	1.120373	49744.5612	1.58E-03

Truck Emissions

	Speed (mph)	Trips veh/day	$PM_{2.5}$ Emission Factor (g/mi)	Length (mi/veh)	$PM_{2.5}$ Emissions Rate (g/day)	(g/sec)	TOG Emission Factor (g/mi)	TOG Emissions Rate (g/day)	(g/sec)
North Building - Onsite	15	125	0.0278383	0.181005	0.62969312	7.28811E-06	0.37920446	8.577471802	9.92763E-05
North Building - Offsite	30	125	0.0215268	0.068289	0.183754379	2.12679E-06	0.12681503	1.082504087	1.2529E-05
South Building - Onsite	15	125	0.0278383	0.37593	1.308156184	1.51407E-05	0.37920446	17.81927167	0.000206242
South Building - Offsite	30	125	0.0215268	0.659275	1.774007246	2.05325E-05	0.12681503	10.45074464	0.000120958

		veh/day	$PM_{2.5}$ Emission Factor (g/veh/day)	Duration (hr/veh)	$PM_{2.5}$ Emissions Rate (g/day)	(g/sec)	TOG Emission Factor (g/veh/day)	Emissions Rate (g/day)	(g/sec)
North Building	Idle	125	0.0249722	0.25	0.780380689	9.03218E-06	2.95413296	92.31665508	0.00106848
South Building	Idle	125	0.0249722	0.25	0.780380689	9.03218E-06	2.95413296	92.31665508	0.00106848

Throughput	Source	Concrete Batch Plant Emissions[1]										Unit
		Arsenic	Beryllium	Cadmium	Total Chromium	Lead	Manganese	Nickel	Total Phosphorus	Selenium	Crystalline Silica	
138000	**Cement Silo Filling [2] (SCC 3-05-011-07)**	4.74E-07	5.05E-09	6.60E-08	7.11E-08	2.08E-07	5.70E-05	4.96E-06	3.33E-06	ND		lb/cu yd batched
	EMISSIONS	**6.54E-02**	**6.97E-04**	**9.11E-03**	**9.81E-03**	**2.86E-02**	**7.86E+00**	**6.85E-01**	**4.59E-01**			
138000	w/ Fabric Filter	1.20E-09	1.37E-10	ND	8.18E-09	3.07E-09	3.30E-08	1.18E-08	ND	ND	7.67E-06	lb/cu yd batched
	EMISSIONS	**0.000165004**	**1.89132E-05**		**0.001128564**	**0.000424184**	**0.004553172**	**0.001626689**			**1.0585152**	
	Cement Supplement Silo Filling [3] (SCC 3-05-011-17)	ND	ND	ND	ND	ND	ND	ND	ND	ND		lb/cu yd batched
138000	w/ Fabric Filter	2.82E-07	2.55E-08	5.58E-11	3.44E-07	1.47E-07	7.22E-08	6.43E-07	9.98E-07	2.04E-08	1.11E-04	lb/cu yd batched
	EMISSIONS	**0.038916**	**0.003518006**	**7.70537E-06**	**0.04747752**	**0.02023632**	**0.009962496**	**0.08872848**	**3.88E-02**	**0.002817518**	**15.255072**	
138000	**Weight Hopper Loading**	**4.54E-11**	**0**	**1.73E-12**	**3.10E-10**	**8.91E-11**	**9.19E-09**	**6.03E-10**	**2.93E-09**	**0**	**5.41E-07**	lb/cu yd batched
	EMISSIONS	**6.27E-06**	**0.00E+00**	**2.39E-07**	**4.28E-05**	**1.23E-05**	**1.27E-03**	**8.33E-05**	**4.05E-04**	**0.00E+00**	**7.47E-02**	
138000	**Central Mix Batching [4] (SCC 3-05-011-09)**	2.36E-06	ND	3.33E-07	4.00E-07	1.08E-07	1.73E-05	9.25E-07	5.70E-06	ND		lb/cu yd batched
	EMISSIONS	**3.26E-01**		**4.59E-02**	**5.53E-02**	**1.49E-02**	**2.38E+00**	**1.28E-01**	**7.86E-01**			
138000	w/ Fabric Filter	8.35E-08	ND	2.00E-10	3.58E-08	1.03E-08	1.07E-06	6.99E-08	3.38E-07	ND	2.71E-05	lb/cu yd batched
	EMISSIONS	**1.15E-02**		**2.76E-05**	**4.94E-03**	**1.42E-03**	**1.47E-01**	**9.65E-03**	**4.67E-02**		**3.74E+00**	

CENTRAL MIX												**Total Pounds**	**lb/day**	**g/s**
Controlled	**TOTAL EMISSIONS**	**5.06E-02**	**3.54E-03**	**3.56E-05**	**5.36E-02**	**2.21E-02**	**1.63E-01**	**1.00E-01**	**8.60E-02**	**2.82E-03**	**2.01E+01**	2.06E+01	4.26E-02	2.24E-04

ND=No data

1. All emission factors are in lb of pollutant per cubic yard batched. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete. Emission Factor Unit, derived from AP42 Table 11.12-8

2. The uncontrolled emission factors were developed from Reference 9. The controlled emission factors were developed form Reference 9 and 10.

Although controlled emissions of phosphorous compounds were below detection, it is reasonable to assume that the effectiveness is comparable to the average effectiveness (98%) for the other metals.

3. Reference 10.

4. Reference 9. The emission factor units are lb of pollutant per ton of cement and cement supplement. Emission factors were developed from a typical central mix operation. The average estimate of the percent of emissions captured during each test run is 94%.

Concrete Batch Plant Toxic Factors based on AP-42 11.12 Concrete Batching, June 2006 Final Section, Table 11.12-8
Since AP-42 Section 11.12 does not provide toxic emission factors for weigh hopper loading, the ratio of uncontrolled PM10 emission factors for weigh hopper loading (0.0024 lb/ton) and truck mixer loading (0.278 lb/ton) were used tc obtain the ratio 0.0086 to scale the toxic emission factors, based on truck mixer loading.

Storage Pile Emissions

Storage Pile Activity	24	hours/day
Days year 1	365	
Days year 2	119	
Storage Pile Size	0.2	acres
PM10 Emission Factor	24.6	lbs/acre/day (uncontrolled)
Control Efficiency	70%	water control
PM10 Emission Factor	7.38	lbs/acre/day (controlled)

	Default Composition					Year 1	Year 2
Pollutant	**Ci (ppmw)**	**Ci (lbs/lb)**	**Emissions Factor (lbs/acre/day)**	**Emissions (lbs/day)**	**Emissions (lbs/hr)**	**Emissions (lbs/year)**	**Emissions (lbs/year)**
Arsenic	22	2.20E-05	1.62E-04	3.25E-05	1.35E-06	1.19E-02	3.86E-03
Beryllium	1	1.00E-06	7.38E-06	1.48E-06	6.15E-08	5.39E-04	1.76E-04
Cadmium	1	1.00E-06	7.38E-06	1.48E-06	6.15E-08	5.39E-04	1.76E-04
Chromum Hexavalent	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cromium	28	2.80E-05	2.07E-04	4.13E-05	1.72E-06	1.51E-02	4.92E-03
Copper	37	3.70E-05	2.73E-04	5.46E-05	2.28E-06	1.99E-02	6.50E-03
Lead	50	5.00E-05	3.69E-04	7.38E-05	3.08E-06	2.69E-02	8.78E-03
Manganese	530	5.30E-04	3.91E-03	7.82E-04	3.26E-05	2.86E-01	9.31E-02
Mercury	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	28	2.80E-05	2.07E-04	4.13E-05	1.72E-06	1.51E-02	4.92E-03
Selenium	1	1.00E-06	7.38E-06	1.48E-06	6.15E-08	5.39E-04	1.76E-04
Total					lbs/year:	**3.76E-01**	**1.23E-01**
					lbs/day:	1.03E-03	1.03E-03
					g/s:	**1.19E-08**	**1.19E-08**

Source:
San Diego County Emissions Factor Guidance, Mineral Products Industry - Aggregate, December 1998.

Concrete Batch Plant - HARP2 Risk Assessment Standalone Tool Data

			Cancer	Chronic	Acute	
Pol_Name	POL	**CONC**	**INH_RISK**	**RESP**	**CONC**	**RESP**
Arsenic	7440382	1.17E-05	4.88E-08	7.83E-04	1.39E-04	0.00E+00
Beryllium	7440417	8.20E-07	2.39E-09	1.17E-04	9.69E-06	0.00E+00
Cadmium	7440439	8.25E-09	4.29E-11	4.13E-07	9.75E-08	0.00E+00
Chromium hexavalent	18540299	1.24E-05	0.00E+00	0.00E+00	1.47E-04	0.00E+00
Lead	7439921	5.13E-06	7.46E-11	0.00E+00	6.06E-05	0.00E+00
Manganese	7439965	3.78E-05	0.00E+00	0.00E+00	4.46E-04	0.00E+00
Nickel	7440020	2.32E-05	7.32E-09	1.66E-03	2.74E-04	0.00E+00
TotalPhosphorus	7723140	1.99E-05	0.00E+00	0.00E+00	2.36E-04	0.00E+00
Selenium	7782492	6.54E-07	0.00E+00	0.00E+00	7.72E-06	0.00E+00
Silica, Crystln	1175	4.67E-03	0.00E+00	1.56E-03	5.52E-02	0.00E+00
	Total	0.00478	5.8618E-08	0.004115		0
			0.06			0.00

Intuitive Construction - Santa Clara County, Annual

Intuitive Construction

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,213.00	1000sqft	27.85	1,213,000.00	0
General Light Industry	29.33	1000sqft	0.67	29,330.00	0
Enclosed Parking with Elevator	553.50	1000sqft	12.71	553,502.00	0
Other Non-Asphalt Surfaces	99.56	1000sqft	2.29	99,563.00	0
Parking Lot	30.30	1000sqft	0.70	30,303.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction run only

Land Use - Industrial - two Central Utility Plant areas

Construction Phase - Trenching = infrastructure improvements

Demolition - Per construction questionnaire

Grading - 570,000 cy for site/landscape, basement excavation, stockpile removal, and mat foundation excavation

Vehicle Trips - Construction only run

Energy Use -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measures

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	152.00
tblConstructionPhase	NumDays	740.00	305.00
tblConstructionPhase	NumDays	50.00	32.00
tblConstructionPhase	NumDays	75.00	76.00
tblConstructionPhase	NumDays	55.00	43.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/8/2024	2/28/2023
tblConstructionPhase	PhaseEndDate	2/5/2024	7/1/2022
tblConstructionPhase	PhaseEndDate	11/9/2020	9/15/2020
tblConstructionPhase	PhaseEndDate	4/5/2021	1/29/2021
tblConstructionPhase	PhaseEndDate	4/22/2024	8/31/2022
tblConstructionPhase	PhaseEndDate	12/21/2020	10/15/2020
tblConstructionPhase	PhaseEndDate	4/5/2021	4/30/2021
tblConstructionPhase	PhaseStartDate	4/23/2024	8/1/2022
tblConstructionPhase	PhaseStartDate	4/6/2021	5/1/2021
tblConstructionPhase	PhaseStartDate	9/1/2020	8/1/2020
tblConstructionPhase	PhaseStartDate	12/22/2020	10/16/2020
tblConstructionPhase	PhaseStartDate	2/6/2024	7/2/2022
tblConstructionPhase	PhaseStartDate	11/10/2020	9/16/2020
tblConstructionPhase	PhaseStartDate	4/6/2021	2/1/2021
tblGrading	MaterialExported	0.00	570,000.00
tblLandUse	LandUseSquareFeet	553,500.00	553,502.00
tblLandUse	LandUseSquareFeet	99,560.00	99,563.00
tblLandUse	LandUseSquareFeet	30,300.00	30,303.00
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.64	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.76	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.42	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4583	10.5792	3.1673	0.0251	1.6440	0.1372	1.7812	0.4615	0.1274	0.5889	0.0000	2,402.6211	2,402.6211	0.1745	0.0000	2,406.9823
2021	0.6045	7.9858	4.8759	0.0231	1.3533	0.1458	1.4991	0.3573	0.1363	0.4936	0.0000	2,164.5780	2,164.5780	0.1572	0.0000	2,168.5070
2022	5.1514	3.4274	3.1101	0.0116	0.5516	0.0759	0.6275	0.1498	0.0715	0.2213	0.0000	1,066.9232	1,066.9232	0.0801	0.0000	1,068.9256
2023	1.8411	0.0323	0.0937	2.6000e-004	0.0228	1.6200e-003	0.0244	6.0700e-003	1.6100e-003	7.6800e-003	0.0000	22.8730	22.8730	6.7000e-004	0.0000	22.8897
Maximum	**5.1514**	**10.5792**	**4.8759**	**0.0251**	**1.6440**	**0.1458**	**1.7812**	**0.4615**	**0.1363**	**0.5889**	**0.0000**	**2,402.6211**	**2,402.6211**	**0.1745**	**0.0000**	**2,406.9823**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3050	9.5281	3.3610	0.0251	1.0530	0.0866	1.1397	0.2914	0.0855	0.3769	0.0000	2,402.6208	2,402.6208	0.1745	0.0000	2,406.9820
2021	0.4601	7.4305	5.1085	0.0231	1.2410	0.1242	1.3652	0.3283	0.1233	0.4516	0.0000	2,164.5777	2,164.5777	0.1572	0.0000	2,168.5067
2022	5.0758	3.3231	3.2806	0.0116	0.5516	0.0812	0.6328	0.1498	0.0808	0.2307	0.0000	1,066.9229	1,066.9229	0.0801	0.0000	1,068.9253
2023	1.8383	0.0335	0.0941	2.6000e-004	0.0228	2.1300e-003	0.0250	6.0700e-003	2.1200e-003	8.1900e-003	0.0000	22.8730	22.8730	6.7000e-004	0.0000	22.8897
Maximum	**5.0758**	**9.5281**	**5.1085**	**0.0251**	**1.2410**	**0.1242**	**1.3652**	**0.3283**	**0.1233**	**0.4516**	**0.0000**	**2,402.6208**	**2,402.6208**	**0.1745**	**0.0000**	**2,406.9820**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.67**	**7.76**	**-5.31**	**0.00**	**19.69**	**18.41**	**19.57**	**20.41**	**13.39**	**18.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	6.4539	5.6972
2	12-1-2020	2-28-2021	7.0524	6.5637
3	3-1-2021	5-31-2021	0.8959	0.7714
4	6-1-2021	8-31-2021	1.8396	1.6944
5	9-1-2021	11-30-2021	1.8366	1.6930
6	12-1-2021	2-28-2022	1.7365	1.6354
7	3-1-2022	5-31-2022	1.7126	1.6312
8	6-1-2022	8-31-2022	1.8328	1.7951
9	9-1-2022	11-30-2022	2.9063	2.8999
10	12-1-2022	2-28-2023	2.8715	2.8677
		Highest	7.0524	6.5637

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Energy	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	9,324.2520	9,324.2520	0.3849	0.0999	9,363.6381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	236.3749	0.0000	236.3749	13.9694	0.0000	585.6087
Water						0.0000	0.0000		0.0000	0.0000	70.5489	484.5832	555.1321	7.2680	0.1756	789.1683
Total	**5.7021**	**1.2939**	**1.1044**	**7.7600e-003**	**0.0000**	**0.0984**	**0.0984**	**0.0000**	**0.0984**	**0.0984**	**306.9237**	**9,808.8696**	**10,115.7933**	**21.6223**	**0.2755**	**10,738.4517**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Energy	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	9,324.2520	9,324.2520	0.3849	0.0999	9,363.6381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	236.3749	0.0000	236.3749	13.9694	0.0000	585.6087
Water						0.0000	0.0000		0.0000	0.0000	70.5489	484.5832	555.1321	7.2680	0.1756	789.1683
Total	**5.7021**	**1.2939**	**1.1044**	**7.7600e-003**	**0.0000**	**0.0984**	**0.0984**	**0.0000**	**0.0984**	**0.0984**	**306.9237**	**9,808.8696**	**10,115.7933**	**21.6223**	**0.2755**	**10,738.4517**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	9/15/2020	5	32	
2	Site Preparation	Site Preparation	9/16/2020	10/15/2020	5	22	
3	Grading	Grading	10/16/2020	1/29/2021	5	76	
4	Trenching	Trenching	2/1/2021	4/30/2021	5	65	
5	Building Construction	Building Construction	5/1/2021	7/1/2022	5	305	
6	Paving	Paving	7/2/2022	8/31/2022	5	43	
7	Architectural Coating	Architectural Coating	8/1/2022	2/28/2023	5	152	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 190

Acres of Paving: 15.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,863,495; Non-Residential Outdoor: 621,165; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching	Excavators	2	8.00	158	0.38
Trenching	Trenchers	2	8.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	4,944.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	71,250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	687.00	316.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	137.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5350	0.0000	0.5350	0.0810	0.0000	0.0810	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0530	0.5312	0.3481	6.2000e-004		0.0265	0.0265		0.0247	0.0247	0.0000	54.3978	54.3978	0.0154	0.0000	54.7817
Total	**0.0530**	**0.5312**	**0.3481**	**6.2000e-004**	**0.5350**	**0.0265**	**0.5615**	**0.0810**	**0.0247**	**0.1057**	**0.0000**	**54.3978**	**54.3978**	**0.0154**	**0.0000**	**54.7817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0205	0.7173	0.1469	1.9500e-003	0.0419	2.3300e-003	0.0442	0.0115	2.2300e-003	0.0138	0.0000	188.5414	188.5414	8.6200e-003	0.0000	188.7570
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	5.7000e-004	6.0100e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6324	1.6324	4.0000e-005	0.0000	1.6334
Total	**0.0213**	**0.7179**	**0.1529**	**1.9700e-003**	**0.0438**	**2.3400e-003**	**0.0462**	**0.0120**	**2.2400e-003**	**0.0143**	**0.0000**	**190.1738**	**190.1738**	**8.6600e-003**	**0.0000**	**190.3904**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.2287	0.0000	0.2287	0.0346	0.0000	0.0346	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.2930	0.3948	6.2000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	54.3977	54.3977	0.0154	0.0000	54.7816
Total	**0.0148**	**0.2930**	**0.3948**	**6.2000e-004**	**0.2287**	**0.0138**	**0.2425**	**0.0346**	**0.0138**	**0.0484**	**0.0000**	**54.3977**	**54.3977**	**0.0154**	**0.0000**	**54.7816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0205	0.7173	0.1469	1.9500e-003	0.0419	2.3300e-003	0.0442	0.0115	2.2300e-003	0.0138	0.0000	188.5414	188.5414	8.6200e-003	0.0000	188.7570
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	5.7000e-004	6.0100e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6324	1.6324	4.0000e-005	0.0000	1.6334
Total	**0.0213**	**0.7179**	**0.1529**	**1.9700e-003**	**0.0438**	**2.3400e-003**	**0.0462**	**0.0120**	**2.2400e-003**	**0.0143**	**0.0000**	**190.1738**	**190.1738**	**8.6600e-003**	**0.0000**	**190.3904**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0448	0.4666	0.2367	4.2000e-004		0.0242	0.0242		0.0222	0.0222	0.0000	36.7738	36.7738	0.0119	0.0000	37.0711

Total	**0.0448**	**0.4666**	**0.2367**	**4.2000e-004**	**0.1987**	**0.0242**	**0.2229**	**0.1092**	**0.0222**	**0.1315**	**0.0000**	**36.7738**	**36.7738**	**0.0119**	**0.0000**	**37.0711**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.7000e-004	4.9600e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3467	1.3467	3.0000e-005	0.0000	1.3475
Total	**6.6000e-004**	**4.7000e-004**	**4.9600e-003**	**1.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3467**	**1.3467**	**3.0000e-005**	**0.0000**	**1.3475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0850	0.0000	0.0850	0.0467	0.0000	0.0467	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.2097	0.2526	4.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	36.7737	36.7737	0.0119	0.0000	37.0710
Total	**0.0102**	**0.2097**	**0.2526**	**4.2000e-004**	**0.0850**	**0.0104**	**0.0954**	**0.0467**	**0.0104**	**0.0571**	**0.0000**	**36.7737**	**36.7737**	**0.0119**	**0.0000**	**37.0710**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.7000e-004	4.9600e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3467	1.3467	3.0000e-005	0.0000	1.3475
Total	**6.6000e-004**	**4.7000e-004**	**4.9600e-003**	**1.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3467**	**1.3467**	**3.0000e-005**	**0.0000**	**1.3475**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2986	0.0000	0.2986	0.1068	0.0000	0.1068	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1224	1.3804	0.8789	1.7100e-003		0.0598	0.0598		0.0550	0.0550	0.0000	149.8318	149.8318	0.0485	0.0000	151.0433
Total	**0.1224**	**1.3804**	**0.8789**	**1.7100e-003**	**0.2986**	**0.0598**	**0.3584**	**0.1068**	**0.0550**	**0.1618**	**0.0000**	**149.8318**	**149.8318**	**0.0485**	**0.0000**	**151.0433**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.2142	7.4813	1.5321	0.0203	0.5620	0.0243	0.5863	0.1508	0.0233	0.1741	0.0000	1,966.3565	1,966.3565	0.0900	0.0000	1,968.6053
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.3100e-003	0.0138	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7408	3.7408	9.0000e-005	0.0000	3.7431
Total	**0.2161**	**7.4826**	**1.5459**	**0.0204**	**0.5664**	**0.0243**	**0.5907**	**0.1520**	**0.0233**	**0.1753**	**0.0000**	**1,970.0973**	**1,970.0973**	**0.0900**	**0.0000**	**1,972.3484**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1277	0.0000	0.1277	0.0457	0.0000	0.0457	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0419	0.8244	1.0099	1.7100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	149.8316	149.8316	0.0485	0.0000	151.0431
Total	**0.0419**	**0.8244**	**1.0099**	**1.7100e-003**	**0.1277**	**0.0357**	**0.1634**	**0.0457**	**0.0357**	**0.0814**	**0.0000**	**149.8316**	**149.8316**	**0.0485**	**0.0000**	**151.0431**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.2142	7.4813	1.5321	0.0203	0.5620	0.0243	0.5863	0.1508	0.0233	0.1741	0.0000	1,966.3565	1,966.3565	0.0900	0.0000	1,968.6053
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.3100e-003	0.0138	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7408	3.7408	9.0000e-005	0.0000	3.7431
Total	**0.2161**	**7.4826**	**1.5459**	**0.0204**	**0.5664**	**0.0243**	**0.5907**	**0.1520**	**0.0233**	**0.1753**	**0.0000**	**1,970.0973**	**1,970.0973**	**0.0900**	**0.0000**	**1,972.3484**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1962	0.0000	0.1962	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.4872	0.3242	6.5000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	57.2197	57.2197	0.0185	0.0000	57.6824
Total	**0.0440**	**0.4872**	**0.3242**	**6.5000e-004**	**0.1962**	**0.0209**	**0.2171**	**0.0505**	**0.0192**	**0.0697**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6824**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0772	2.6325	0.5736	7.6500e-003	0.4942	8.2200e-003	0.5024	0.1262	7.8600e-003	0.1341	0.0000	741.2669	741.2669	0.0336	0.0000	742.1078
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	4.8000e-003	2.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3787	1.3787	3.0000e-005	0.0000	1.3795
Total	**0.0778**	**2.6330**	**0.5784**	**7.6700e-003**	**0.4959**	**8.2300e-003**	**0.5041**	**0.1267**	**7.8700e-003**	**0.1345**	**0.0000**	**742.6456**	**742.6456**	**0.0337**	**0.0000**	**743.4873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0839	0.0000	0.0839	0.0216	0.0000	0.0216	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.3148	0.3856	6.5000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	57.2197	57.2197	0.0185	0.0000	57.6823
Total	**0.0160**	**0.3148**	**0.3856**	**6.5000e-004**	**0.0839**	**0.0136**	**0.0975**	**0.0216**	**0.0136**	**0.0352**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6823**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0772	2.6325	0.5736	7.6500e-003	0.4942	8.2200e-003	0.5024	0.1262	7.8600e-003	0.1341	0.0000	741.2669	741.2669	0.0336	0.0000	742.1078
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	4.8000e-003	2.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3787	1.3787	3.0000e-005	0.0000	1.3795
Total	**0.0778**	**2.6330**	**0.5784**	**7.6700e-003**	**0.4959**	**8.2300e-003**	**0.5041**	**0.1267**	**7.8700e-003**	**0.1345**	**0.0000**	**742.6456**	**742.6456**	**0.0337**	**0.0000**	**743.4873**

3.5 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0400	0.3701	0.3840	5.6000e-004		0.0235	0.0235		0.0216	0.0216	0.0000	49.0163	49.0163	0.0159	0.0000	49.4127

Total	**0.0400**	**0.3701**	**0.3840**	**5.6000e-004**		**0.0235**	**0.0235**		**0.0216**	**0.0216**	**0.0000**	**49.0163**	**49.0163**	**0.0159**	**0.0000**	**49.4127**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	7.4300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.1338	2.1338	5.0000e-005	0.0000	2.1350
Total	**1.0000e-003**	**6.9000e-004**	**7.4300e-003**	**2.0000e-005**	**2.5800e-003**	**2.0000e-005**	**2.5900e-003**	**6.9000e-004**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**2.1338**	**2.1338**	**5.0000e-005**	**0.0000**	**2.1350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.2836	0.4222	5.6000e-004		0.0164	0.0164		0.0164	0.0164	0.0000	49.0163	49.0163	0.0159	0.0000	49.4126
Total	**0.0137**	**0.2836**	**0.4222**	**5.6000e-004**		**0.0164**	**0.0164**		**0.0164**	**0.0164**	**0.0000**	**49.0163**	**49.0163**	**0.0159**	**0.0000**	**49.4126**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	7.4300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.1338	2.1338	5.0000e-005	0.0000	2.1350
Total	**1.0000e-003**	**6.9000e-004**	**7.4300e-003**	**2.0000e-005**	**2.5800e-003**	**2.0000e-005**	**2.5900e-003**	**6.9000e-004**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**2.1338**	**2.1338**	**5.0000e-005**	**0.0000**	**2.1350**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6826	202.6826	0.0489	0.0000	203.9051
Total	**0.1663**	**1.5253**	**1.4503**	**2.3600e-003**		**0.0839**	**0.0839**		**0.0789**	**0.0789**	**0.0000**	**202.6826**	**202.6826**	**0.0489**	**0.0000**	**203.9051**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0902	2.8413	0.7563	7.4700e-003	0.1819	6.3000e-003	0.1882	0.0526	6.0200e-003	0.0586	0.0000	716.2163	716.2163	0.0312	0.0000	716.9966
Worker	0.1852	0.1282	1.3751	4.3600e-003	0.4768	3.0000e-003	0.4798	0.1268	2.7600e-003	0.1296	0.0000	394.6637	394.6637	8.9800e-003	0.0000	394.8881
Total	**0.2754**	**2.9695**	**2.1315**	**0.0118**	**0.6587**	**9.3000e-003**	**0.6680**	**0.1794**	**8.7800e-003**	**0.1882**	**0.0000**	**1,110.8800**	**1,110.8800**	**0.0402**	**0.0000**	**1,111.8847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0762	1.2289	1.5834	2.3600e-003		0.0766	0.0766		0.0766	0.0766	0.0000	202.6824	202.6824	0.0489	0.0000	203.9048
Total	**0.0762**	**1.2289**	**1.5834**	**2.3600e-003**		**0.0766**	**0.0766**		**0.0766**	**0.0766**	**0.0000**	**202.6824**	**202.6824**	**0.0489**	**0.0000**	**203.9048**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0902	2.8413	0.7563	7.4700e-003	0.1819	6.3000e-003	0.1882	0.0526	6.0200e-003	0.0586	0.0000	716.2163	716.2163	0.0312	0.0000	716.9966
Worker	0.1852	0.1282	1.3751	4.3600e-003	0.4768	3.0000e-003	0.4798	0.1268	2.7600e-003	0.1296	0.0000	394.6637	394.6637	8.9800e-003	0.0000	394.8881
Total	**0.2754**	**2.9695**	**2.1315**	**0.0118**	**0.6587**	**9.3000e-003**	**0.6680**	**0.1794**	**8.7800e-003**	**0.1882**	**0.0000**	**1,110.8800**	**1,110.8800**	**0.0402**	**0.0000**	**1,111.8847**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1109	1.0150	1.0636	1.7500e-003		0.0526	0.0526		0.0495	0.0495	0.0000	150.6214	150.6214	0.0361	0.0000	151.5235
Total	**0.1109**	**1.0150**	**1.0636**	**1.7500e-003**		**0.0526**	**0.0526**		**0.0495**	**0.0495**	**0.0000**	**150.6214**	**150.6214**	**0.0361**	**0.0000**	**151.5235**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0625	1.9952	0.5292	5.4900e-003	0.1351	4.0700e-003	0.1392	0.0391	3.8900e-003	0.0430	0.0000	526.9563	526.9563	0.0221	0.0000	527.5098
Worker	0.1284	0.0855	0.9389	3.1200e-003	0.3542	2.1800e-003	0.3563	0.0942	2.0100e-003	0.0962	0.0000	282.5294	282.5294	5.9800e-003	0.0000	282.6789
Total	**0.1909**	**2.0807**	**1.4681**	**8.6100e-003**	**0.4893**	**6.2500e-003**	**0.4956**	**0.1333**	**5.9000e-003**	**0.1392**	**0.0000**	**809.4857**	**809.4857**	**0.0281**	**0.0000**	**810.1887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0549	0.9099	1.1747	1.7500e-003		0.0562	0.0562		0.0562	0.0562	0.0000	150.6212	150.6212	0.0361	0.0000	151.5233
Total	**0.0549**	**0.9099**	**1.1747**	**1.7500e-003**		**0.0562**	**0.0562**		**0.0562**	**0.0562**	**0.0000**	**150.6212**	**150.6212**	**0.0361**	**0.0000**	**151.5233**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0625	1.9952	0.5292	5.4900e-003	0.1351	4.0700e-003	0.1392	0.0391	3.8900e-003	0.0430	0.0000	526.9563	526.9563	0.0221	0.0000	527.5098
Worker	0.1284	0.0855	0.9389	3.1200e-003	0.3542	2.1800e-003	0.3563	0.0942	2.0100e-003	0.0962	0.0000	282.5294	282.5294	5.9800e-003	0.0000	282.6789
Total	**0.1909**	**2.0807**	**1.4681**	**8.6100e-003**	**0.4893**	**6.2500e-003**	**0.4956**	**0.1333**	**5.9000e-003**	**0.1392**	**0.0000**	**809.4857**	**809.4857**	**0.0281**	**0.0000**	**810.1887**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0237	0.2392	0.3135	4.9000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	43.0593	43.0593	0.0139	0.0000	43.4074

Paving	9.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0246**	**0.2392**	**0.3135**	**4.9000e-004**		**0.0122**	**0.0122**		**0.0112**	**0.0112**	**0.0000**	**43.0593**	**43.0593**	**0.0139**	**0.0000**	**43.4074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.2000e-004	6.7800e-003	2.0000e-005	2.5600e-003	2.0000e-005	2.5700e-003	6.8000e-004	1.0000e-005	6.9000e-004	0.0000	2.0404	2.0404	4.0000e-005	0.0000	2.0415
Total	**9.3000e-004**	**6.2000e-004**	**6.7800e-003**	**2.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.0404**	**2.0404**	**4.0000e-005**	**0.0000**	**2.0415**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0121	0.2429	0.3719	4.9000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	43.0592	43.0592	0.0139	0.0000	43.4074
Paving	9.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0130**	**0.2429**	**0.3719**	**4.9000e-004**		**0.0131**	**0.0131**		**0.0131**	**0.0131**	**0.0000**	**43.0592**	**43.0592**	**0.0139**	**0.0000**	**43.4074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.2000e-004	6.7800e-003	2.0000e-005	2.5600e-003	2.0000e-005	2.5700e-003	6.8000e-004	1.0000e-005	6.9000e-004	0.0000	2.0404	2.0404	4.0000e-005	0.0000	2.0415
Total	**9.3000e-004**	**6.2000e-004**	**6.7800e-003**	**2.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.0404**	**2.0404**	**4.0000e-005**	**0.0000**	**2.0415**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.7912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0113	0.0775	0.0998	1.6000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	14.0429	14.0429	9.1000e-004	0.0000	14.0658
Total	**4.8024**	**0.0775**	**0.0998**	**1.6000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**14.0429**	**14.0429**	**9.1000e-004**	**0.0000**	**14.0658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0144	0.1584	5.3000e-004	0.0598	3.7000e-004	0.0601	0.0159	3.4000e-004	0.0162	0.0000	47.6735	47.6735	1.0100e-003	0.0000	47.6987
Total	**0.0217**	**0.0144**	**0.1584**	**5.3000e-004**	**0.0598**	**3.7000e-004**	**0.0601**	**0.0159**	**3.4000e-004**	**0.0162**	**0.0000**	**47.6735**	**47.6735**	**1.0100e-003**	**0.0000**	**47.6987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.7912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2700e-003	0.0746	0.1008	1.6000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	14.0429	14.0429	9.1000e-004	0.0000	14.0657
Total	**4.7944**	**0.0746**	**0.1008**	**1.6000e-004**		**5.2300e-003**	**5.2300e-003**		**5.2300e-003**	**5.2300e-003**	**0.0000**	**14.0429**	**14.0429**	**9.1000e-004**	**0.0000**	**14.0657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0144	0.1584	5.3000e-004	0.0598	3.7000e-004	0.0601	0.0159	3.4000e-004	0.0162	0.0000	47.6735	47.6735	1.0100e-003	0.0000	47.6987
Total	**0.0217**	**0.0144**	**0.1584**	**5.3000e-004**	**0.0598**	**3.7000e-004**	**0.0601**	**0.0159**	**3.4000e-004**	**0.0162**	**0.0000**	**47.6735**	**47.6735**	**1.0100e-003**	**0.0000**	**47.6987**

3.8 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0200e-003	0.0274	0.0380	6.0000e-005		1.4900e-003	1.4900e-003		1.4900e-003	1.4900e-003	0.0000	5.3618	5.3618	3.2000e-004	0.0000	5.3699
Total	**1.8334**	**0.0274**	**0.0380**	**6.0000e-005**		**1.4900e-003**	**1.4900e-003**		**1.4900e-003**	**1.4900e-003**	**0.0000**	**5.3618**	**5.3618**	**3.2000e-004**	**0.0000**	**5.3699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7500e-003	4.9500e-003	0.0557	1.9000e-004	0.0228	1.4000e-004	0.0230	6.0700e-003	1.3000e-004	6.2000e-003	0.0000	17.5112	17.5112	3.5000e-004	0.0000	17.5198
Total	**7.7500e-003**	**4.9500e-003**	**0.0557**	**1.9000e-004**	**0.0228**	**1.4000e-004**	**0.0230**	**6.0700e-003**	**1.3000e-004**	**6.2000e-003**	**0.0000**	**17.5112**	**17.5112**	**3.5000e-004**	**0.0000**	**17.5198**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2500e-003	0.0285	0.0385	6.0000e-005		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	5.3618	5.3618	3.2000e-004	0.0000	5.3699
Total	**1.8306**	**0.0285**	**0.0385**	**6.0000e-005**		**2.0000e-003**	**2.0000e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**5.3618**	**5.3618**	**3.2000e-004**	**0.0000**	**5.3699**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7500e-003	4.9500e-003	0.0557	1.9000e-004	0.0228	1.4000e-004	0.0230	6.0700e-003	1.3000e-004	6.2000e-003	0.0000	17.5112	17.5112	3.5000e-004	0.0000	17.5198
Total	**7.7500e-003**	**4.9500e-003**	**0.0557**	**1.9000e-004**	**0.0228**	**1.4000e-004**	**0.0230**	**6.0700e-003**	**1.3000e-004**	**6.2000e-003**	**0.0000**	**17.5112**	**17.5112**	**3.5000e-004**	**0.0000**	**17.5198**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Office Park	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
General Light Industry	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Office Park	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Other Non-Asphalt Surfaces	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Parking Lot	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,915.8591	7,915.8591	0.3579	0.0741	7,946.8758
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,915.8591	7,915.8591	0.3579	0.0741	7,946.8758
NaturalGas Mitigated	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	1,408.3929	1,408.3929	0.0270	0.0258	1,416.7622
NaturalGas Unmitigated	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	1,408.3929	1,408.3929	0.0270	0.0258	1,416.7622

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	773725	4.1700e-003	0.0379	0.0319	2.3000e-004		2.8800e-003	2.8800e-003		2.8800e-003	2.8800e-003	0.0000	41.2889	41.2889	7.9000e-004	7.6000e-004	41.5343
Office Park	2.56186e+007	0.1381	1.2558	1.0549	7.5300e-003		0.0954	0.0954		0.0954	0.0954	0.0000	1,367.1039	1,367.1039	0.0262	0.0251	1,375.2279
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.1423**	**1.2937**	**1.0867**	**7.7600e-003**		**0.0983**	**0.0983**		**0.0983**	**0.0983**	**0.0000**	**1,408.3929**	**1,408.3929**	**0.0270**	**0.0258**	**1,416.7622**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	773725	4.1700e-003	0.0379	0.0319	2.3000e-004		2.8800e-003	2.8800e-003		2.8800e-003	2.8800e-003	0.0000	41.2889	41.2889	7.9000e-004	7.6000e-004	41.5343
Office Park	2.56186e+007	0.1381	1.2558	1.0549	7.5300e-003		0.0954	0.0954		0.0954	0.0954	0.0000	1,367.1039	1,367.1039	0.0262	0.0251	1,375.2279
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1423**	**1.2937**	**1.0867**	**7.7600e-003**		**0.0983**	**0.0983**		**0.0983**	**0.0983**	**0.0000**	**1,408.3929**	**1,408.3929**	**0.0270**	**0.0258**	**1,416.7622**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	3.24352e+006	943.5777	0.0427	8.8300e-003	947.2749
General Light Industry	242266	70.4779	3.1900e-003	6.6000e-004	70.7541
Office Park	2.37142e+007	6,898.7182	0.3119	0.0645	6,925.7494
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Parking Lot	10606	3.0854	1.4000e-004	3.0000e-005	3.0975
Total		**7,915.8591**	**0.3579**	**0.0741**	**7,946.8758**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	3.24352e+006	943.5777	0.0427	8.8300e-003	947.2749
General Light Industry	242266	70.4779	3.1900e-003	6.6000e-004	70.7541
Office Park	2.37142e+007	6,898.7182	0.3119	0.0645	6,925.7494
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10606	3.0854	1.4000e-004	3.0000e-005	3.0975
Total		**7,915.8591**	**0.3579**	**0.0741**	**7,946.8758**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Unmitigated	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6400e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Total	**5.5598**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0344**	**0.0344**	**9.0000e-005**	**0.0000**	**0.0367**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6400e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Total	**5.5598**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0344**	**0.0344**	**9.0000e-005**	**0.0000**	**0.0367**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	555.1321	7.2680	0.1756	789.1683
Unmitigated	555.1321	7.2680	0.1756	789.1683

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	6.78256 / 0	12.8284	0.2215	5.3200e-003	19.9506
Office Park	215.591 / 132.136	542.3037	7.0465	0.1703	769.2177
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**555.1321**	**7.2680**	**0.1756**	**789.1683**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	6.78256 / 0	12.8284	0.2215	5.3200e-003	19.9506
Office Park	215.591 / 132.136	542.3037	7.0465	0.1703	769.2177
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**555.1321**	**7.2680**	**0.1756**	**789.1683**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	236.3749	13.9694	0.0000	585.6087
Unmitigated	236.3749	13.9694	0.0000	585.6087

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	36.37	7.3828	0.4363	0.0000	18.2905
Office Park	1128.09	228.9921	13.5330	0.0000	567.3182
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**236.3749**	**13.9694**	**0.0000**	**585.6087**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	36.37	7.3828	0.4363	0.0000	18.2905
Office Park	1128.09	228.9921	13.5330	0.0000	567.3182
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Total		**236.3749**	**13.9694**	**0.0000**	**585.6087**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Intuitive Construction - Santa Clara County, Annual

Intuitive Construction

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,213.00	1000sqft	27.85	1,213,000.00	0
General Light Industry	29.33	1000sqft	0.67	29,330.00	0
Enclosed Parking with Elevator	553.50	1000sqft	12.71	553,502.00	0
Other Non-Asphalt Surfaces	99.56	1000sqft	2.29	99,563.00	0
Parking Lot	30.30	1000sqft	0.70	30,303.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction run only

Land Use - Industrial - two Central Utility Plant areas

Construction Phase - Trenching = infrastructure improvements

Demolition - Per construction questionnaire

Grading - 570,000 cy for site/landscape, basement excavation, stockpile removal, and mat foundation excavation

Vehicle Trips - Construction only run

Energy Use -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measures

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	55.00	152.00
tblConstructionPhase	NumDays	740.00	305.00
tblConstructionPhase	NumDays	50.00	32.00
tblConstructionPhase	NumDays	75.00	76.00
tblConstructionPhase	NumDays	55.00	43.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/8/2024	2/28/2023
tblConstructionPhase	PhaseEndDate	2/5/2024	7/1/2022
tblConstructionPhase	PhaseEndDate	11/9/2020	9/15/2020
tblConstructionPhase	PhaseEndDate	4/5/2021	1/29/2021
tblConstructionPhase	PhaseEndDate	4/22/2024	8/31/2022
tblConstructionPhase	PhaseEndDate	12/21/2020	10/15/2020
tblConstructionPhase	PhaseEndDate	4/5/2021	4/30/2021
tblConstructionPhase	PhaseStartDate	4/23/2024	8/1/2022
tblConstructionPhase	PhaseStartDate	4/6/2021	5/1/2021
tblConstructionPhase	PhaseStartDate	9/1/2020	8/1/2020
tblConstructionPhase	PhaseStartDate	12/22/2020	10/16/2020
tblConstructionPhase	PhaseStartDate	2/6/2024	7/2/2022
tblConstructionPhase	PhaseStartDate	11/10/2020	9/16/2020
tblConstructionPhase	PhaseStartDate	4/6/2021	2/1/2021
tblGrading	MaterialExported	0.00	570,000.00
tblLandUse	LandUseSquareFeet	553,500.00	553,502.00
tblLandUse	LandUseSquareFeet	99,560.00	99,563.00
tblLandUse	LandUseSquareFeet	30,300.00	30,303.00
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	1.64	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.76	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.42	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4583	10.5792	3.1673	0.0251	1.6440	0.1372	1.7812	0.4615	0.1274	0.5889	0.0000	2,402.6211	2,402.6211	0.1745	0.0000	2,406.9823
2021	0.6045	7.9858	4.8759	0.0231	1.3533	0.1458	1.4991	0.3573	0.1363	0.4936	0.0000	2,164.5780	2,164.5780	0.1572	0.0000	2,168.5070
2022	5.1514	3.4274	3.1101	0.0116	0.5516	0.0759	0.6275	0.1498	0.0715	0.2213	0.0000	1,066.9232	1,066.9232	0.0801	0.0000	1,068.9256
2023	1.8411	0.0323	0.0937	2.6000e-004	0.0228	1.6200e-003	0.0244	6.0700e-003	1.6100e-003	7.6800e-003	0.0000	22.8730	22.8730	6.7000e-004	0.0000	22.8897
Maximum	**5.1514**	**10.5792**	**4.8759**	**0.0251**	**1.6440**	**0.1458**	**1.7812**	**0.4615**	**0.1363**	**0.5889**	**0.0000**	**2,402.6211**	**2,402.6211**	**0.1745**	**0.0000**	**2,406.9823**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2715	8.3460	3.2133	0.0251	1.0530	0.0312	1.0842	0.2914	0.0300	0.3214	0.0000	2,402.6208	2,402.6208	0.1745	0.0000	2,406.9820
2021	0.4204	5.9072	5.0332	0.0231	1.2410	0.0293	1.2703	0.3283	0.0285	0.3568	0.0000	2,164.5777	2,164.5777	0.1572	0.0000	2,168.5067
2022	5.0497	2.3040	3.2538	0.0116	0.5516	0.0143	0.5659	0.1498	0.0139	0.1637	0.0000	1,066.9229	1,066.9229	0.0801	0.0000	1,068.9253
2023	1.8377	7.6600e-003	0.0941	2.6000e-004	0.0228	2.2000e-004	0.0230	6.0700e-003	2.1000e-004	6.2800e-003	0.0000	22.8730	22.8730	6.7000e-004	0.0000	22.8897
Maximum	**5.0497**	**8.3460**	**5.0332**	**0.0251**	**1.2410**	**0.0312**	**1.2703**	**0.3283**	**0.0300**	**0.3568**	**0.0000**	**2,402.6208**	**2,402.6208**	**0.1745**	**0.0000**	**2,406.9820**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.91**	**24.79**	**-3.09**	**0.00**	**19.69**	**79.20**	**25.15**	**20.41**	**78.46**	**35.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	6.4539	4.9689
2	12-1-2020	2-28-2021	7.0524	5.8954
3	3-1-2021	5-31-2021	0.8959	0.4683
4	6-1-2021	8-31-2021	1.8396	1.3137
5	9-1-2021	11-30-2021	1.8366	1.3164
6	12-1-2021	2-28-2022	1.7365	1.2629
7	3-1-2022	5-31-2022	1.7126	1.2504
8	6-1-2022	8-31-2022	1.8328	1.4271
9	9-1-2022	11-30-2022	2.9063	2.8590
10	12-1-2022	2-28-2023	2.8715	2.8273
		Highest	7.0524	5.8954

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Energy	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	9,324.2520	9,324.2520	0.3849	0.0999	9,363.6381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	236.3749	0.0000	236.3749	13.9694	0.0000	585.6087
Water						0.0000	0.0000		0.0000	0.0000	70.5489	484.5832	555.1321	7.2680	0.1756	789.1683
Total	**5.7021**	**1.2939**	**1.1044**	**7.7600e-003**	**0.0000**	**0.0984**	**0.0984**	**0.0000**	**0.0984**	**0.0984**	**306.9237**	**9,808.8696**	**10,115.7933**	**21.6223**	**0.2755**	**10,738.4517**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Energy	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	9,324.2520	9,324.2520	0.3849	0.0999	9,363.6381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	236.3749	0.0000	236.3749	13.9694	0.0000	585.6087
Water						0.0000	0.0000		0.0000	0.0000	70.5489	484.5832	555.1321	7.2680	0.1756	789.1683
Total	**5.7021**	**1.2939**	**1.1044**	**7.7600e-003**	**0.0000**	**0.0984**	**0.0984**	**0.0000**	**0.0984**	**0.0984**	**306.9237**	**9,808.8696**	**10,115.7933**	**21.6223**	**0.2755**	**10,738.4517**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	9/15/2020	5	32	
2	Site Preparation	Site Preparation	9/16/2020	10/15/2020	5	22	
3	Grading	Grading	10/16/2020	1/29/2021	5	76	
4	Trenching	Trenching	2/1/2021	4/30/2021	5	65	
5	Building Construction	Building Construction	5/1/2021	7/1/2022	5	305	
6	Paving	Paving	7/2/2022	8/31/2022	5	43	
7	Architectural Coating	Architectural Coating	8/1/2022	2/28/2023	5	152	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 190

Acres of Paving: 15.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,863,495; Non-Residential Outdoor: 621,165; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching	Excavators	2	8.00	158	0.38
Trenching	Trenchers	2	8.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	4,944.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	71,250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	687.00	316.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	137.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5350	0.0000	0.5350	0.0810	0.0000	0.0810	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0530	0.5312	0.3481	6.2000e-004		0.0265	0.0265		0.0247	0.0247	0.0000	54.3978	54.3978	0.0154	0.0000	54.7817
Total	**0.0530**	**0.5312**	**0.3481**	**6.2000e-004**	**0.5350**	**0.0265**	**0.5615**	**0.0810**	**0.0247**	**0.1057**	**0.0000**	**54.3978**	**54.3978**	**0.0154**	**0.0000**	**54.7817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0205	0.7173	0.1469	1.9500e-003	0.0419	2.3300e-003	0.0442	0.0115	2.2300e-003	0.0138	0.0000	188.5414	188.5414	8.6200e-003	0.0000	188.7570
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	5.7000e-004	6.0100e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6324	1.6324	4.0000e-005	0.0000	1.6334
Total	**0.0213**	**0.7179**	**0.1529**	**1.9700e-003**	**0.0438**	**2.3400e-003**	**0.0462**	**0.0120**	**2.2400e-003**	**0.0143**	**0.0000**	**190.1738**	**190.1738**	**8.6600e-003**	**0.0000**	**190.3904**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.2287	0.0000	0.2287	0.0346	0.0000	0.0346	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4000e-003	0.0321	0.3725	6.2000e-004		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	54.3977	54.3977	0.0154	0.0000	54.7816
Total	**7.4000e-003**	**0.0321**	**0.3725**	**6.2000e-004**	**0.2287**	**9.9000e-004**	**0.2297**	**0.0346**	**9.9000e-004**	**0.0356**	**0.0000**	**54.3977**	**54.3977**	**0.0154**	**0.0000**	**54.7816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0205	0.7173	0.1469	1.9500e-003	0.0419	2.3300e-003	0.0442	0.0115	2.2300e-003	0.0138	0.0000	188.5414	188.5414	8.6200e-003	0.0000	188.7570
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	5.7000e-004	6.0100e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6324	1.6324	4.0000e-005	0.0000	1.6334
Total	**0.0213**	**0.7179**	**0.1529**	**1.9700e-003**	**0.0438**	**2.3400e-003**	**0.0462**	**0.0120**	**2.2400e-003**	**0.0143**	**0.0000**	**190.1738**	**190.1738**	**8.6600e-003**	**0.0000**	**190.3904**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0448	0.4666	0.2367	4.2000e-004		0.0242	0.0242		0.0222	0.0222	0.0000	36.7738	36.7738	0.0119	0.0000	37.0711

Total	**0.0448**	**0.4666**	**0.2367**	**4.2000e-004**	**0.1987**	**0.0242**	**0.2229**	**0.1092**	**0.0222**	**0.1315**	**0.0000**	**36.7738**	**36.7738**	**0.0119**	**0.0000**	**37.0711**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.7000e-004	4.9600e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3467	1.3467	3.0000e-005	0.0000	1.3475
Total	**6.6000e-004**	**4.7000e-004**	**4.9600e-003**	**1.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3467**	**1.3467**	**3.0000e-005**	**0.0000**	**1.3475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0850	0.0000	0.0850	0.0467	0.0000	0.0467	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1200e-003	0.0222	0.2296	4.2000e-004		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	36.7737	36.7737	0.0119	0.0000	37.0710
Total	**5.1200e-003**	**0.0222**	**0.2296**	**4.2000e-004**	**0.0850**	**6.8000e-004**	**0.0856**	**0.0467**	**6.8000e-004**	**0.0474**	**0.0000**	**36.7737**	**36.7737**	**0.0119**	**0.0000**	**37.0710**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.7000e-004	4.9600e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3467	1.3467	3.0000e-005	0.0000	1.3475
Total	**6.6000e-004**	**4.7000e-004**	**4.9600e-003**	**1.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3467**	**1.3467**	**3.0000e-005**	**0.0000**	**1.3475**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2986	0.0000	0.2986	0.1068	0.0000	0.1068	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1224	1.3804	0.8789	1.7100e-003		0.0598	0.0598		0.0550	0.0550	0.0000	149.8318	149.8318	0.0485	0.0000	151.0433
Total	**0.1224**	**1.3804**	**0.8789**	**1.7100e-003**	**0.2986**	**0.0598**	**0.3584**	**0.1068**	**0.0550**	**0.1618**	**0.0000**	**149.8318**	**149.8318**	**0.0485**	**0.0000**	**151.0433**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.2142	7.4813	1.5321	0.0203	0.5620	0.0243	0.5863	0.1508	0.0233	0.1741	0.0000	1,966.3565	1,966.3565	0.0900	0.0000	1,968.6053
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.3100e-003	0.0138	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7408	3.7408	9.0000e-005	0.0000	3.7431
Total	**0.2161**	**7.4826**	**1.5459**	**0.0204**	**0.5664**	**0.0243**	**0.5907**	**0.1520**	**0.0233**	**0.1753**	**0.0000**	**1,970.0973**	**1,970.0973**	**0.0900**	**0.0000**	**1,972.3484**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1277	0.0000	0.1277	0.0457	0.0000	0.0457	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0209	0.0908	0.9075	1.7100e-003		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	149.8316	149.8316	0.0485	0.0000	151.0431
Total	**0.0209**	**0.0908**	**0.9075**	**1.7100e-003**	**0.1277**	**2.7900e-003**	**0.1304**	**0.0457**	**2.7900e-003**	**0.0484**	**0.0000**	**149.8316**	**149.8316**	**0.0485**	**0.0000**	**151.0431**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.2142	7.4813	1.5321	0.0203	0.5620	0.0243	0.5863	0.1508	0.0233	0.1741	0.0000	1,966.3565	1,966.3565	0.0900	0.0000	1,968.6053
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.3100e-003	0.0138	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7408	3.7408	9.0000e-005	0.0000	3.7431
Total	**0.2161**	**7.4826**	**1.5459**	**0.0204**	**0.5664**	**0.0243**	**0.5907**	**0.1520**	**0.0233**	**0.1753**	**0.0000**	**1,970.0973**	**1,970.0973**	**0.0900**	**0.0000**	**1,972.3484**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1962	0.0000	0.1962	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.4872	0.3242	6.5000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	57.2197	57.2197	0.0185	0.0000	57.6824
Total	**0.0440**	**0.4872**	**0.3242**	**6.5000e-004**	**0.1962**	**0.0209**	**0.2171**	**0.0505**	**0.0192**	**0.0697**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6824**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0772	2.6325	0.5736	7.6500e-003	0.4942	8.2200e-003	0.5024	0.1262	7.8600e-003	0.1341	0.0000	741.2669	741.2669	0.0336	0.0000	742.1078
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	4.8000e-003	2.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3787	1.3787	3.0000e-005	0.0000	1.3795
Total	**0.0778**	**2.6330**	**0.5784**	**7.6700e-003**	**0.4959**	**8.2300e-003**	**0.5041**	**0.1267**	**7.8700e-003**	**0.1345**	**0.0000**	**742.6456**	**742.6456**	**0.0337**	**0.0000**	**743.4873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0839	0.0000	0.0839	0.0216	0.0000	0.0216	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-003	0.0347	0.3465	6.5000e-004		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	57.2197	57.2197	0.0185	0.0000	57.6823
Total	**8.0000e-003**	**0.0347**	**0.3465**	**6.5000e-004**	**0.0839**	**1.0700e-003**	**0.0850**	**0.0216**	**1.0700e-003**	**0.0227**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6823**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0772	2.6325	0.5736	7.6500e-003	0.4942	8.2200e-003	0.5024	0.1262	7.8600e-003	0.1341	0.0000	741.2669	741.2669	0.0336	0.0000	742.1078
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.5000e-004	4.8000e-003	2.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3787	1.3787	3.0000e-005	0.0000	1.3795
Total	**0.0778**	**2.6330**	**0.5784**	**7.6700e-003**	**0.4959**	**8.2300e-003**	**0.5041**	**0.1267**	**7.8700e-003**	**0.1345**	**0.0000**	**742.6456**	**742.6456**	**0.0337**	**0.0000**	**743.4873**

3.5 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0400	0.3701	0.3840	5.6000e-004		0.0235	0.0235		0.0216	0.0216	0.0000	49.0163	49.0163	0.0159	0.0000	49.4127

Total	**0.0400**	**0.3701**	**0.3840**	**5.6000e-004**		**0.0235**	**0.0235**		**0.0216**	**0.0216**	**0.0000**	**49.0163**	**49.0163**	**0.0159**	**0.0000**	**49.4127**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	7.4300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.1338	2.1338	5.0000e-005	0.0000	2.1350
Total	**1.0000e-003**	**6.9000e-004**	**7.4300e-003**	**2.0000e-005**	**2.5800e-003**	**2.0000e-005**	**2.5900e-003**	**6.9000e-004**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**2.1338**	**2.1338**	**5.0000e-005**	**0.0000**	**2.1350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8500e-003	0.0297	0.4222	5.6000e-004		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	49.0163	49.0163	0.0159	0.0000	49.4126
Total	**6.8500e-003**	**0.0297**	**0.4222**	**5.6000e-004**		**9.1000e-004**	**9.1000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**49.0163**	**49.0163**	**0.0159**	**0.0000**	**49.4126**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	7.4300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.1338	2.1338	5.0000e-005	0.0000	2.1350
Total	**1.0000e-003**	**6.9000e-004**	**7.4300e-003**	**2.0000e-005**	**2.5800e-003**	**2.0000e-005**	**2.5900e-003**	**6.9000e-004**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**2.1338**	**2.1338**	**5.0000e-005**	**0.0000**	**2.1350**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6826	202.6826	0.0489	0.0000	203.9051
Total	**0.1663**	**1.5253**	**1.4503**	**2.3600e-003**		**0.0839**	**0.0839**		**0.0789**	**0.0789**	**0.0000**	**202.6826**	**202.6826**	**0.0489**	**0.0000**	**203.9051**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0902	2.8413	0.7563	7.4700e-003	0.1819	6.3000e-003	0.1882	0.0526	6.0200e-003	0.0586	0.0000	716.2163	716.2163	0.0312	0.0000	716.9966
Worker	0.1852	0.1282	1.3751	4.3600e-003	0.4768	3.0000e-003	0.4798	0.1268	2.7600e-003	0.1296	0.0000	394.6637	394.6637	8.9800e-003	0.0000	394.8881
Total	**0.2754**	**2.9695**	**2.1315**	**0.0118**	**0.6587**	**9.3000e-003**	**0.6680**	**0.1794**	**8.7800e-003**	**0.1882**	**0.0000**	**1,110.8800**	**1,110.8800**	**0.0402**	**0.0000**	**1,111.8847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0513	0.2397	1.5472	2.3600e-003		9.8000e-003	9.8000e-003		9.8000e-003	9.8000e-003	0.0000	202.6824	202.6824	0.0489	0.0000	203.9048
Total	**0.0513**	**0.2397**	**1.5472**	**2.3600e-003**		**9.8000e-003**	**9.8000e-003**		**9.8000e-003**	**9.8000e-003**	**0.0000**	**202.6824**	**202.6824**	**0.0489**	**0.0000**	**203.9048**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0902	2.8413	0.7563	7.4700e-003	0.1819	6.3000e-003	0.1882	0.0526	6.0200e-003	0.0586	0.0000	716.2163	716.2163	0.0312	0.0000	716.9966
Worker	0.1852	0.1282	1.3751	4.3600e-003	0.4768	3.0000e-003	0.4798	0.1268	2.7600e-003	0.1296	0.0000	394.6637	394.6637	8.9800e-003	0.0000	394.8881
Total	**0.2754**	**2.9695**	**2.1315**	**0.0118**	**0.6587**	**9.3000e-003**	**0.6680**	**0.1794**	**8.7800e-003**	**0.1882**	**0.0000**	**1,110.8800**	**1,110.8800**	**0.0402**	**0.0000**	**1,111.8847**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1109	1.0150	1.0636	1.7500e-003		0.0526	0.0526		0.0495	0.0495	0.0000	150.6214	150.6214	0.0361	0.0000	151.5235
Total	**0.1109**	**1.0150**	**1.0636**	**1.7500e-003**		**0.0526**	**0.0526**		**0.0495**	**0.0495**	**0.0000**	**150.6214**	**150.6214**	**0.0361**	**0.0000**	**151.5235**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0625	1.9952	0.5292	5.4900e-003	0.1351	4.0700e-003	0.1392	0.0391	3.8900e-003	0.0430	0.0000	526.9563	526.9563	0.0221	0.0000	527.5098
Worker	0.1284	0.0855	0.9389	3.1200e-003	0.3542	2.1800e-003	0.3563	0.0942	2.0100e-003	0.0962	0.0000	282.5294	282.5294	5.9800e-003	0.0000	282.6789
Total	**0.1909**	**2.0807**	**1.4681**	**8.6100e-003**	**0.4893**	**6.2500e-003**	**0.4956**	**0.1333**	**5.9000e-003**	**0.1392**	**0.0000**	**809.4857**	**809.4857**	**0.0281**	**0.0000**	**810.1887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0365	0.1751	1.1479	1.7500e-003		6.6100e-003	6.6100e-003		6.6100e-003	6.6100e-003	0.0000	150.6212	150.6212	0.0361	0.0000	151.5233
Total	**0.0365**	**0.1751**	**1.1479**	**1.7500e-003**		**6.6100e-003**	**6.6100e-003**		**6.6100e-003**	**6.6100e-003**	**0.0000**	**150.6212**	**150.6212**	**0.0361**	**0.0000**	**151.5233**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0625	1.9952	0.5292	5.4900e-003	0.1351	4.0700e-003	0.1392	0.0391	3.8900e-003	0.0430	0.0000	526.9563	526.9563	0.0221	0.0000	527.5098
Worker	0.1284	0.0855	0.9389	3.1200e-003	0.3542	2.1800e-003	0.3563	0.0942	2.0100e-003	0.0962	0.0000	282.5294	282.5294	5.9800e-003	0.0000	282.6789
Total	**0.1909**	**2.0807**	**1.4681**	**8.6100e-003**	**0.4893**	**6.2500e-003**	**0.4956**	**0.1333**	**5.9000e-003**	**0.1392**	**0.0000**	**809.4857**	**809.4857**	**0.0281**	**0.0000**	**810.1887**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0237	0.2392	0.3135	4.9000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	43.0593	43.0593	0.0139	0.0000	43.4074

Paving	9.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0246**	**0.2392**	**0.3135**	**4.9000e-004**		**0.0122**	**0.0122**		**0.0112**	**0.0112**	**0.0000**	**43.0593**	**43.0593**	**0.0139**	**0.0000**	**43.4074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.2000e-004	6.7800e-003	2.0000e-005	2.5600e-003	2.0000e-005	2.5700e-003	6.8000e-004	1.0000e-005	6.9000e-004	0.0000	2.0404	2.0404	4.0000e-005	0.0000	2.0415
Total	**9.3000e-004**	**6.2000e-004**	**6.7800e-003**	**2.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.0404**	**2.0404**	**4.0000e-005**	**0.0000**	**2.0415**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0300e-003	0.0261	0.3719	4.9000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	43.0592	43.0592	0.0139	0.0000	43.4074
Paving	9.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9500e-003**	**0.0261**	**0.3719**	**4.9000e-004**		**8.0000e-004**	**8.0000e-004**		**8.0000e-004**	**8.0000e-004**	**0.0000**	**43.0592**	**43.0592**	**0.0139**	**0.0000**	**43.4074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.2000e-004	6.7800e-003	2.0000e-005	2.5600e-003	2.0000e-005	2.5700e-003	6.8000e-004	1.0000e-005	6.9000e-004	0.0000	2.0404	2.0404	4.0000e-005	0.0000	2.0415
Total	**9.3000e-004**	**6.2000e-004**	**6.7800e-003**	**2.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.0404**	**2.0404**	**4.0000e-005**	**0.0000**	**2.0415**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.7912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0113	0.0775	0.0998	1.6000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	14.0429	14.0429	9.1000e-004	0.0000	14.0658
Total	**4.8024**	**0.0775**	**0.0998**	**1.6000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**14.0429**	**14.0429**	**9.1000e-004**	**0.0000**	**14.0658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0144	0.1584	5.3000e-004	0.0598	3.7000e-004	0.0601	0.0159	3.4000e-004	0.0162	0.0000	47.6735	47.6735	1.0100e-003	0.0000	47.6987
Total	**0.0217**	**0.0144**	**0.1584**	**5.3000e-004**	**0.0598**	**3.7000e-004**	**0.0601**	**0.0159**	**3.4000e-004**	**0.0162**	**0.0000**	**47.6735**	**47.6735**	**1.0100e-003**	**0.0000**	**47.6987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.7912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	7.0800e-003	0.1008	1.6000e-004		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	14.0429	14.0429	9.1000e-004	0.0000	14.0657
Total	**4.7928**	**7.0800e-003**	**0.1008**	**1.6000e-004**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**14.0429**	**14.0429**	**9.1000e-004**	**0.0000**	**14.0657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0144	0.1584	5.3000e-004	0.0598	3.7000e-004	0.0601	0.0159	3.4000e-004	0.0162	0.0000	47.6735	47.6735	1.0100e-003	0.0000	47.6987
Total	**0.0217**	**0.0144**	**0.1584**	**5.3000e-004**	**0.0598**	**3.7000e-004**	**0.0601**	**0.0159**	**3.4000e-004**	**0.0162**	**0.0000**	**47.6735**	**47.6735**	**1.0100e-003**	**0.0000**	**47.6987**

3.8 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0200e-003	0.0274	0.0380	6.0000e-005		1.4900e-003	1.4900e-003		1.4900e-003	1.4900e-003	0.0000	5.3618	5.3618	3.2000e-004	0.0000	5.3699
Total	**1.8334**	**0.0274**	**0.0380**	**6.0000e-005**		**1.4900e-003**	**1.4900e-003**		**1.4900e-003**	**1.4900e-003**	**0.0000**	**5.3618**	**5.3618**	**3.2000e-004**	**0.0000**	**5.3699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7500e-003	4.9500e-003	0.0557	1.9000e-004	0.0228	1.4000e-004	0.0230	6.0700e-003	1.3000e-004	6.2000e-003	0.0000	17.5112	17.5112	3.5000e-004	0.0000	17.5198
Total	**7.7500e-003**	**4.9500e-003**	**0.0557**	**1.9000e-004**	**0.0228**	**1.4000e-004**	**0.0230**	**6.0700e-003**	**1.3000e-004**	**6.2000e-003**	**0.0000**	**17.5112**	**17.5112**	**3.5000e-004**	**0.0000**	**17.5198**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2000e-004	2.7000e-003	0.0385	6.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	5.3618	5.3618	3.2000e-004	0.0000	5.3699
Total	**1.8300**	**2.7000e-003**	**0.0385**	**6.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**5.3618**	**5.3618**	**3.2000e-004**	**0.0000**	**5.3699**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7500e-003	4.9500e-003	0.0557	1.9000e-004	0.0228	1.4000e-004	0.0230	6.0700e-003	1.3000e-004	6.2000e-003	0.0000	17.5112	17.5112	3.5000e-004	0.0000	17.5198
Total	**7.7500e-003**	**4.9500e-003**	**0.0557**	**1.9000e-004**	**0.0228**	**1.4000e-004**	**0.0230**	**6.0700e-003**	**1.3000e-004**	**6.2000e-003**	**0.0000**	**17.5112**	**17.5112**	**3.5000e-004**	**0.0000**	**17.5198**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Office Park	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Office Park	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
General Light Industry	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Office Park	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Other Non-Asphalt Surfaces	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Parking Lot	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,915.8591	7,915.8591	0.3579	0.0741	7,946.8758
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,915.8591	7,915.8591	0.3579	0.0741	7,946.8758
NaturalGas Mitigated	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	1,408.3929	1,408.3929	0.0270	0.0258	1,416.7622
NaturalGas Unmitigated	0.1423	1.2937	1.0867	7.7600e-003		0.0983	0.0983		0.0983	0.0983	0.0000	1,408.3929	1,408.3929	0.0270	0.0258	1,416.7622

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	773725	4.1700e-003	0.0379	0.0319	2.3000e-004		2.8800e-003	2.8800e-003		2.8800e-003	2.8800e-003	0.0000	41.2889	41.2889	7.9000e-004	7.6000e-004	41.5343
Office Park	2.56186e+007	0.1381	1.2558	1.0549	7.5300e-003		0.0954	0.0954		0.0954	0.0954	0.0000	1,367.1039	1,367.1039	0.0262	0.0251	1,375.2279
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.1423**	**1.2937**	**1.0867**	**7.7600e-003**		**0.0983**	**0.0983**		**0.0983**	**0.0983**	**0.0000**	**1,408.3929**	**1,408.3929**	**0.0270**	**0.0258**	**1,416.7622**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	773725	4.1700e-003	0.0379	0.0319	2.3000e-004		2.8800e-003	2.8800e-003		2.8800e-003	2.8800e-003	0.0000	41.2889	41.2889	7.9000e-004	7.6000e-004	41.5343
Office Park	2.56186e+007	0.1381	1.2558	1.0549	7.5300e-003		0.0954	0.0954		0.0954	0.0954	0.0000	1,367.1039	1,367.1039	0.0262	0.0251	1,375.2279
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1423**	**1.2937**	**1.0867**	**7.7600e-003**		**0.0983**	**0.0983**		**0.0983**	**0.0983**	**0.0000**	**1,408.3929**	**1,408.3929**	**0.0270**	**0.0258**	**1,416.7622**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	3.24352e+006	943.5777	0.0427	8.8300e-003	947.2749
General Light Industry	242266	70.4779	3.1900e-003	6.6000e-004	70.7541
Office Park	2.37142e+007	6,898.7182	0.3119	0.0645	6,925.7494
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Parking Lot	10606	3.0854	1.4000e-004	3.0000e-005	3.0975
Total		**7,915.8591**	**0.3579**	**0.0741**	**7,946.8758**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	3.24352e+006	943.5777	0.0427	8.8300e-003	947.2749
General Light Industry	242266	70.4779	3.1900e-003	6.6000e-004	70.7541
Office Park	2.37142e+007	6,898.7182	0.3119	0.0645	6,925.7494
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10606	3.0854	1.4000e-004	3.0000e-005	3.0975
Total		**7,915.8591**	**0.3579**	**0.0741**	**7,946.8758**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Unmitigated	5.5598	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6400e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Total	**5.5598**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0344**	**0.0344**	**9.0000e-005**	**0.0000**	**0.0367**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.8961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6400e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0344	0.0344	9.0000e-005	0.0000	0.0367
Total	**5.5598**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0344**	**0.0344**	**9.0000e-005**	**0.0000**	**0.0367**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	555.1321	7.2680	0.1756	789.1683
Unmitigated	555.1321	7.2680	0.1756	789.1683

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	6.78256 / 0	12.8284	0.2215	5.3200e-003	19.9506
Office Park	215.591 / 132.136	542.3037	7.0465	0.1703	769.2177
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**555.1321**	**7.2680**	**0.1756**	**789.1683**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	6.78256 / 0	12.8284	0.2215	5.3200e-003	19.9506
Office Park	215.591 / 132.136	542.3037	7.0465	0.1703	769.2177
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**555.1321**	**7.2680**	**0.1756**	**789.1683**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	236.3749	13.9694	0.0000	585.6087
Unmitigated	236.3749	13.9694	0.0000	585.6087

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	36.37	7.3828	0.4363	0.0000	18.2905
Office Park	1128.09	228.9921	13.5330	0.0000	567.3182
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**236.3749**	**13.9694**	**0.0000**	**585.6087**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	36.37	7.3828	0.4363	0.0000	18.2905
Office Park	1128.09	228.9921	13.5330	0.0000	567.3182
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Total		**236.3749**	**13.9694**	**0.0000**	**585.6087**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 1/13/2020
** File: C:\Lakes\AERMOD View\Intuitive Tier 3 1.13\Intuitive Tier 3 1.ADI
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** AERMOD Control Pathway
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   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL "Intuitive Tier 3 1.err"
CO FINISHED
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**************************************
** AERMOD Source Pathway
**************************************
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**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC North Site On-site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.00108
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 31
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   LOCATION L0019666     VOLUME   587894.974 4136855.071 19.37
   LOCATION L0019667     VOLUME   587896.528 4136863.428 19.41
   LOCATION L0019668     VOLUME   587898.082 4136871.785 19.54
   LOCATION L0019669     VOLUME   587899.636 4136880.141 19.74
   LOCATION L0019670     VOLUME   587901.190 4136888.498 20.01
   LOCATION L0019671     VOLUME   587902.744 4136896.855 20.11
   LOCATION L0019672     VOLUME   587904.298 4136905.212 20.14
   LOCATION L0019673     VOLUME   587905.852 4136913.568 20.13
   LOCATION L0019674     VOLUME   587907.406 4136921.925 20.07
   LOCATION L0019675     VOLUME   587908.960 4136930.282 19.85
   LOCATION L0019676     VOLUME   587910.514 4136938.639 19.59
   LOCATION L0019677     VOLUME   587912.068 4136946.995 19.35
   LOCATION L0019678     VOLUME   587913.622 4136955.352 19.28
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   LOCATION L0019680     VOLUME   587916.730 4136972.066 19.33
   LOCATION L0019681     VOLUME   587918.283 4136980.422 19.39
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LOCATION	L0019687	VOLUME	587927.607	4137030.563 19.84
LOCATION	L0019688	VOLUME	587929.161	4137038.919 19.93
LOCATION	L0019689	VOLUME	587930.715	4137047.276 19.93
LOCATION	L0019690	VOLUME	587932.269	4137055.633 19.73
LOCATION	L0019691	VOLUME	587933.823	4137063.990 19.48
LOCATION	L0019692	VOLUME	587935.377	4137072.346 19.18
LOCATION	L0019693	VOLUME	587937.453	4137080.144 18.90
LOCATION	L0019694	VOLUME	587945.897	4137081.116 19.17
LOCATION	L0019695	VOLUME	587954.341	4137082.089 19.42
LOCATION	L0019696	VOLUME	587962.785	4137083.061 19.48
LOCATION	L0019697	VOLUME	587971.230	4137084.034 19.32
LOCATION	L0019698	VOLUME	587979.674	4137085.006 19.17
LOCATION	L0019699	VOLUME	587988.118	4137085.979 19.12
LOCATION	L0019700	VOLUME	587996.562	4137086.951 19.13
LOCATION	L0019701	VOLUME	588005.006	4137087.924 19.14
LOCATION	L0019702	VOLUME	588013.451	4137088.896 18.98
LOCATION	L0019703	VOLUME	588021.895	4137089.869 18.76
LOCATION	L0019704	VOLUME	588030.339	4137090.841 18.56
LOCATION	L0019705	VOLUME	588038.783	4137091.814 18.36
LOCATION	L0019706	VOLUME	588047.194	4137093.003 18.17
LOCATION	L0019707	VOLUME	588055.539	4137094.617 17.98
LOCATION	L0019708	VOLUME	588063.884	4137096.232 17.94
LOCATION	L0019709	VOLUME	588072.230	4137097.846 17.93
LOCATION	L0019710	VOLUME	588080.575	4137099.460 17.92
LOCATION	L0019711	VOLUME	588088.920	4137101.074 17.88
LOCATION	L0019712	VOLUME	588097.266	4137102.689 17.86
LOCATION	L0019713	VOLUME	588105.611	4137104.303 17.88
LOCATION	L0019714	VOLUME	588113.956	4137105.917 18.11
LOCATION	L0019715	VOLUME	588122.302	4137107.531 18.38
LOCATION	L0019716	VOLUME	588130.647	4137109.146 18.58
LOCATION	L0019717	VOLUME	588135.439	4137106.833 18.45
LOCATION	L0019718	VOLUME	588134.657	4137098.369 18.43
LOCATION	L0019719	VOLUME	588133.874	4137089.905 18.40
LOCATION	L0019720	VOLUME	588133.091	4137081.441 18.36
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LOCATION	L0019722	VOLUME	588131.526	4137064.513 18.80
LOCATION	L0019723	VOLUME	588130.744	4137056.049 19.06
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LOCATION	L0019725	VOLUME	588129.178	4137039.122 19.06
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LOCATION	L0019730	VOLUME	588125.265	4136996.802 18.33
LOCATION	L0019731	VOLUME	588124.483	4136988.338 18.29
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LOCATION	L0019736	VOLUME	588120.570	4136946.019 18.96
LOCATION	L0019737	VOLUME	588119.787	4136937.555 19.00
LOCATION	L0019738	VOLUME	588119.005	4136929.091 19.04
LOCATION	L0019739	VOLUME	588118.222	4136920.627 19.06
LOCATION	L0019740	VOLUME	588117.440	4136912.163 19.03
LOCATION	L0019741	VOLUME	588116.657	4136903.699 18.98
LOCATION	L0019742	VOLUME	588115.874	4136895.235 18.93
LOCATION	L0019743	VOLUME	588115.092	4136886.772 18.97
LOCATION	L0019744	VOLUME	588114.309	4136878.308 19.07
LOCATION	L0019745	VOLUME	588113.527	4136869.844 19.19
LOCATION	L0019746	VOLUME	588112.744	4136861.380 19.31
LOCATION	L0019747	VOLUME	588111.962	4136852.916 19.33
LOCATION	L0019748	VOLUME	588111.179	4136844.452 19.36
LOCATION	L0019749	VOLUME	588110.396	4136835.988 19.38
LOCATION	L0019750	VOLUME	588106.318	4136831.265 19.37
LOCATION	L0019751	VOLUME	588097.823	4136831.554 19.30
LOCATION	L0019752	VOLUME	588089.328	4136831.842 19.24
LOCATION	L0019753	VOLUME	588080.832	4136832.131 19.24
LOCATION	L0019754	VOLUME	588072.337	4136832.420 19.33
LOCATION	L0019755	VOLUME	588063.842	4136832.709 19.42
LOCATION	L0019756	VOLUME	588055.347	4136832.997 19.37
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LOCATION	L0019758	VOLUME	588038.357	4136833.575 19.05
LOCATION	L0019759	VOLUME	588029.862	4136833.864 19.22
LOCATION	L0019760	VOLUME	588021.367	4136834.152 19.57
LOCATION	L0019761	VOLUME	588012.872	4136834.441 19.91
LOCATION	L0019762	VOLUME	588004.377	4136834.730 19.96
LOCATION	L0019763	VOLUME	587995.882	4136835.019 19.93
LOCATION	L0019764	VOLUME	587987.386	4136835.308 19.89
LOCATION	L0019765	VOLUME	587978.891	4136835.596 19.78
LOCATION	L0019766	VOLUME	587970.396	4136835.885 19.66
LOCATION	L0019767	VOLUME	587961.901	4136836.174 19.55
LOCATION	L0019768	VOLUME	587953.406	4136836.463 19.45
LOCATION	L0019769	VOLUME	587944.911	4136836.751 19.35
LOCATION	L0019770	VOLUME	587936.416	4136837.040 19.26
LOCATION	L0019771	VOLUME	587927.921	4136837.329 19.26
LOCATION	L0019772	VOLUME	587919.426	4136837.618 19.28
LOCATION	L0019773	VOLUME	587910.931	4136837.906 19.30
LOCATION	L0019774	VOLUME	587910.430	4136844.770 19.31
LOCATION	L0019775	VOLUME	587911.786	4136853.161 19.32
LOCATION	L0019776	VOLUME	587913.142	4136861.552 19.41
LOCATION	L0019777	VOLUME	587914.498	4136869.944 19.72

LOCATION	L0019778	VOLUME	587915.854	4136878.335 19.99
LOCATION	L0019779	VOLUME	587917.210	4136886.726 20.21
LOCATION	L0019780	VOLUME	587918.567	4136895.117 20.12
LOCATION	L0019781	VOLUME	587919.923	4136903.508 19.86
LOCATION	L0019782	VOLUME	587921.279	4136911.899 19.61
LOCATION	L0019783	VOLUME	587922.635	4136920.290 19.36
LOCATION	L0019784	VOLUME	587923.991	4136928.681 19.45
LOCATION	L0019785	VOLUME	587925.347	4136937.073 19.69
LOCATION	L0019786	VOLUME	587926.703	4136945.464 20.04
LOCATION	L0019787	VOLUME	587928.059	4136953.855 20.40
LOCATION	L0019788	VOLUME	587929.416	4136962.246 20.50
LOCATION	L0019789	VOLUME	587930.772	4136970.637 20.63
LOCATION	L0019790	VOLUME	587932.128	4136979.028 20.77
LOCATION	L0019791	VOLUME	587933.484	4136987.419 20.84
LOCATION	L0019792	VOLUME	587934.840	4136995.810 20.85
LOCATION	L0019793	VOLUME	587936.196	4137004.202 20.62
LOCATION	L0019794	VOLUME	587937.552	4137012.593 20.31
LOCATION	L0019795	VOLUME	587938.909	4137020.984 20.08
LOCATION	L0019796	VOLUME	587940.265	4137029.375 19.86
LOCATION	L0019797	VOLUME	587941.621	4137037.766 19.65
LOCATION	L0019798	VOLUME	587942.977	4137046.157 19.45
LOCATION	L0019799	VOLUME	587944.333	4137054.548 19.36
LOCATION	L0019800	VOLUME	587945.651	4137062.942 19.40
LOCATION	L0019801	VOLUME	587945.646	4137071.442 19.52
LOCATION	L0019802	VOLUME	587953.113	4137073.234 19.83
LOCATION	L0019803	VOLUME	587961.565	4137074.141 20.10
LOCATION	L0019804	VOLUME	587970.016	4137075.049 20.08
LOCATION	L0019805	VOLUME	587978.467	4137075.957 19.97
LOCATION	L0019806	VOLUME	587986.919	4137076.865 19.89
LOCATION	L0019807	VOLUME	587995.370	4137077.772 19.95
LOCATION	L0019808	VOLUME	588003.822	4137078.680 20.00
LOCATION	L0019809	VOLUME	588012.273	4137079.588 19.85
LOCATION	L0019810	VOLUME	588020.724	4137080.496 19.52
LOCATION	L0019811	VOLUME	588029.176	4137081.403 19.21
LOCATION	L0019812	VOLUME	588037.627	4137082.311 18.92
LOCATION	L0019813	VOLUME	588046.078	4137083.219 18.65
LOCATION	L0019814	VOLUME	588054.530	4137084.127 18.39
LOCATION	L0019815	VOLUME	588062.981	4137085.035 18.34
LOCATION	L0019816	VOLUME	588071.433	4137085.942 18.37
LOCATION	L0019817	VOLUME	588079.884	4137086.850 18.39
LOCATION	L0019818	VOLUME	588088.335	4137087.758 18.28
LOCATION	L0019819	VOLUME	588096.787	4137088.666 18.14
LOCATION	L0019820	VOLUME	588105.238	4137089.573 18.02
LOCATION	L0019821	VOLUME	588113.690	4137090.481 18.15
LOCATION	L0019822	VOLUME	588121.847	4137091.093 18.31
LOCATION	L0019823	VOLUME	588120.992	4137082.636 18.28
LOCATION	L0019824	VOLUME	588120.136	4137074.180 18.29
LOCATION	L0019825	VOLUME	588119.281	4137065.723 18.36

LOCATION	L0019826	VOLUME	588118.425	4137057.266 18.39
LOCATION	L0019827	VOLUME	588117.570	4137048.809 18.39
LOCATION	L0019828	VOLUME	588116.715	4137040.352 18.31
LOCATION	L0019829	VOLUME	588115.859	4137031.895 18.22
LOCATION	L0019830	VOLUME	588115.004	4137023.439 18.17
LOCATION	L0019831	VOLUME	588114.148	4137014.982 18.14
LOCATION	L0019832	VOLUME	588113.293	4137006.525 18.05
LOCATION	L0019833	VOLUME	588112.437	4136998.068 17.96
LOCATION	L0019834	VOLUME	588111.582	4136989.611 17.85
LOCATION	L0019835	VOLUME	588110.726	4136981.154 17.90
LOCATION	L0019836	VOLUME	588109.871	4136972.697 18.25
LOCATION	L0019837	VOLUME	588109.016	4136964.241 18.62
LOCATION	L0019838	VOLUME	588108.160	4136955.784 19.03
LOCATION	L0019839	VOLUME	588107.305	4136947.327 19.15
LOCATION	L0019840	VOLUME	588106.449	4136938.870 19.17
LOCATION	L0019841	VOLUME	588105.594	4136930.413 19.19
LOCATION	L0019842	VOLUME	588104.738	4136921.956 19.20
LOCATION	L0019843	VOLUME	588103.883	4136913.500 19.11
LOCATION	L0019844	VOLUME	588103.027	4136905.043 19.03
LOCATION	L0019845	VOLUME	588102.172	4136896.586 18.97
LOCATION	L0019846	VOLUME	588101.317	4136888.129 19.00
LOCATION	L0019847	VOLUME	588100.461	4136879.672 19.15
LOCATION	L0019848	VOLUME	588099.606	4136871.215 19.30
LOCATION	L0019849	VOLUME	588098.750	4136862.759 19.45
LOCATION	L0019850	VOLUME	588095.482	4136857.062 19.49
LOCATION	L0019851	VOLUME	588086.987	4136857.345 19.59
LOCATION	L0019852	VOLUME	588078.491	4136857.628 19.59
LOCATION	L0019853	VOLUME	588069.996	4136857.911 19.54
LOCATION	L0019854	VOLUME	588061.501	4136858.195 19.48
LOCATION	L0019855	VOLUME	588053.006	4136858.478 19.19
LOCATION	L0019856	VOLUME	588044.510	4136858.761 18.83
LOCATION	L0019857	VOLUME	588036.015	4136859.044 18.47
LOCATION	L0019858	VOLUME	588027.520	4136859.327 18.48
LOCATION	L0019859	VOLUME	588019.024	4136859.611 18.54
LOCATION	L0019860	VOLUME	588010.529	4136859.894 18.59
LOCATION	L0019861	VOLUME	588002.034	4136860.177 18.60
LOCATION	L0019862	VOLUME	587993.539	4136860.460 18.62
LOCATION	L0019863	VOLUME	587985.043	4136860.743 18.65
LOCATION	L0019864	VOLUME	587976.548	4136861.026 18.65
LOCATION	L0019865	VOLUME	587968.053	4136861.310 18.65
LOCATION	L0019866	VOLUME	587959.558	4136861.593 18.65
LOCATION	L0019867	VOLUME	587951.062	4136861.876 18.62
LOCATION	L0019868	VOLUME	587942.567	4136862.159 18.58
LOCATION	L0019869	VOLUME	587934.072	4136862.442 18.65
LOCATION	L0019870	VOLUME	587927.278	4136864.144 18.94
LOCATION	L0019871	VOLUME	587928.530	4136872.551 19.04
LOCATION	L0019872	VOLUME	587929.781	4136880.959 19.09
LOCATION	L0019873	VOLUME	587931.032	4136889.366 19.10

LOCATION	L0019874	VOLUME	587932.284	4136897.774 18.90
LOCATION	L0019875	VOLUME	587933.535	4136906.181 18.68
LOCATION	L0019876	VOLUME	587934.786	4136914.588 18.47
LOCATION	L0019877	VOLUME	587936.038	4136922.996 18.48
LOCATION	L0019878	VOLUME	587937.289	4136931.403 19.18
LOCATION	L0019879	VOLUME	587938.540	4136939.811 19.80
LOCATION	L0019880	VOLUME	587939.792	4136948.218 20.35
LOCATION	L0019881	VOLUME	587941.043	4136956.625 20.49
LOCATION	L0019882	VOLUME	587942.294	4136965.033 20.36
LOCATION	L0019883	VOLUME	587943.546	4136973.440 20.21
LOCATION	L0019884	VOLUME	587944.797	4136981.848 20.04
LOCATION	L0019885	VOLUME	587946.048	4136990.255 19.74
LOCATION	L0019886	VOLUME	587947.300	4136998.662 19.44
LOCATION	L0019887	VOLUME	587948.551	4137007.070 19.12
LOCATION	L0019888	VOLUME	587949.802	4137015.477 18.84
LOCATION	L0019889	VOLUME	587951.054	4137023.884 18.65
LOCATION	L0019890	VOLUME	587952.305	4137032.292 18.47
LOCATION	L0019891	VOLUME	587953.556	4137040.699 18.30
LOCATION	L0019892	VOLUME	587954.808	4137049.107 18.42
LOCATION	L0019893	VOLUME	587956.059	4137057.514 18.88
LOCATION	L0019894	VOLUME	587957.310	4137065.921 19.44
LOCATION	L0019895	VOLUME	587964.822	4137067.505 19.54
LOCATION	L0019896	VOLUME	587973.306	4137068.029 19.54
LOCATION	L0019897	VOLUME	587981.790	4137068.552 19.53
LOCATION	L0019898	VOLUME	587990.273	4137069.076 19.64
LOCATION	L0019899	VOLUME	587998.757	4137069.600 19.80
LOCATION	L0019900	VOLUME	588007.241	4137070.123 19.95
LOCATION	L0019901	VOLUME	588015.725	4137070.647 19.74
LOCATION	L0019902	VOLUME	588024.209	4137071.171 19.48
LOCATION	L0019903	VOLUME	588032.693	4137071.694 19.21
LOCATION	L0019904	VOLUME	588041.177	4137072.218 18.99
LOCATION	L0019905	VOLUME	588049.660	4137072.742 18.76
LOCATION	L0019906	VOLUME	588058.144	4137073.266 18.55
LOCATION	L0019907	VOLUME	588066.628	4137073.789 18.62
LOCATION	L0019908	VOLUME	588075.112	4137074.313 18.69
LOCATION	L0019909	VOLUME	588083.596	4137074.837 18.71
LOCATION	L0019910	VOLUME	588092.080	4137075.360 18.49
LOCATION	L0019911	VOLUME	588100.563	4137075.884 18.26
LOCATION	L0019912	VOLUME	588109.047	4137076.408 18.13
LOCATION	L0019913	VOLUME	588110.607	4137070.550 18.10
LOCATION	L0019914	VOLUME	588109.393	4137062.137 17.98
LOCATION	L0019915	VOLUME	588108.180	4137053.724 17.81
LOCATION	L0019916	VOLUME	588106.967	4137045.311 17.62
LOCATION	L0019917	VOLUME	588105.753	4137036.898 17.74
LOCATION	L0019918	VOLUME	588104.540	4137028.485 17.84
LOCATION	L0019919	VOLUME	588103.326	4137020.072 17.91
LOCATION	L0019920	VOLUME	588102.113	4137011.660 17.90
LOCATION	L0019921	VOLUME	588100.899	4137003.247 17.81

LOCATION	L0019922	VOLUME	588099.686	4136994.834 17.73
LOCATION	L0019923	VOLUME	588098.473	4136986.421 17.66
LOCATION	L0019924	VOLUME	588097.259	4136978.008 17.90
LOCATION	L0019925	VOLUME	588096.046	4136969.595 18.24
LOCATION	L0019926	VOLUME	588094.832	4136961.182 18.56
LOCATION	L0019927	VOLUME	588093.619	4136952.769 18.84
LOCATION	L0019928	VOLUME	588092.406	4136944.356 18.88
LOCATION	L0019929	VOLUME	588091.192	4136935.943 18.92
LOCATION	L0019930	VOLUME	588089.979	4136927.530 18.97
LOCATION	L0019931	VOLUME	588088.765	4136919.117 19.00
LOCATION	L0019932	VOLUME	588087.552	4136910.704 19.02
LOCATION	L0019933	VOLUME	588086.339	4136902.291 19.05
LOCATION	L0019934	VOLUME	588085.125	4136893.878 19.10
LOCATION	L0019935	VOLUME	588083.912	4136885.465 19.24
LOCATION	L0019936	VOLUME	588081.154	4136878.875 19.34
LOCATION	L0019937	VOLUME	588072.656	4136879.057 19.30
LOCATION	L0019938	VOLUME	588064.158	4136879.239 19.26
LOCATION	L0019939	VOLUME	588055.660	4136879.421 19.13
LOCATION	L0019940	VOLUME	588047.162	4136879.603 18.88
LOCATION	L0019941	VOLUME	588038.664	4136879.785 18.64
LOCATION	L0019942	VOLUME	588030.166	4136879.967 18.53
LOCATION	L0019943	VOLUME	588021.668	4136880.149 18.51
LOCATION	L0019944	VOLUME	588013.170	4136880.331 18.50
LOCATION	L0019945	VOLUME	588004.672	4136880.513 18.57
LOCATION	L0019946	VOLUME	587996.174	4136880.696 18.69
LOCATION	L0019947	VOLUME	587987.675	4136880.878 18.81
LOCATION	L0019948	VOLUME	587979.177	4136881.060 18.85
LOCATION	L0019949	VOLUME	587970.679	4136881.242 18.86
LOCATION	L0019950	VOLUME	587962.181	4136881.424 18.87
LOCATION	L0019951	VOLUME	587953.683	4136881.606 18.80
LOCATION	L0019952	VOLUME	587950.552	4136886.328 18.80
LOCATION	L0019953	VOLUME	587951.780	4136894.739 18.81
LOCATION	L0019954	VOLUME	587953.009	4136903.150 18.76
LOCATION	L0019955	VOLUME	587954.237	4136911.560 18.72
LOCATION	L0019956	VOLUME	587955.466	4136919.971 18.68
LOCATION	L0019957	VOLUME	587956.694	4136928.382 18.80
LOCATION	L0019958	VOLUME	587957.923	4136936.793 18.87
LOCATION	L0019959	VOLUME	587959.151	4136945.203 18.87
LOCATION	L0019960	VOLUME	587960.380	4136953.614 18.77
LOCATION	L0019961	VOLUME	587961.608	4136962.025 18.62
LOCATION	L0019962	VOLUME	587962.837	4136970.436 18.47
LOCATION	L0019963	VOLUME	587964.066	4136978.846 18.33
LOCATION	L0019964	VOLUME	587965.294	4136987.257 18.18
LOCATION	L0019965	VOLUME	587966.523	4136995.668 18.04
LOCATION	L0019966	VOLUME	587967.751	4137004.079 17.92
LOCATION	L0019967	VOLUME	587968.980	4137012.489 17.81
LOCATION	L0019968	VOLUME	587970.208	4137020.900 17.81
LOCATION	L0019969	VOLUME	587971.437	4137029.311 17.83

LOCATION	L0019970	VOLUME	587972.665	4137037.722	17.85
LOCATION	L0019971	VOLUME	587973.894	4137046.132	17.98
LOCATION	L0019972	VOLUME	587978.267	4137051.191	18.38
LOCATION	L0019973	VOLUME	587986.739	4137051.880	18.51
LOCATION	L0019974	VOLUME	587995.211	4137052.568	18.65
LOCATION	L0019975	VOLUME	588003.683	4137053.257	18.79
LOCATION	L0019976	VOLUME	588012.155	4137053.946	18.79
LOCATION	L0019977	VOLUME	588020.627	4137054.635	18.60
LOCATION	L0019978	VOLUME	588029.099	4137055.323	18.41
LOCATION	L0019979	VOLUME	588037.571	4137056.012	18.32
LOCATION	L0019980	VOLUME	588046.043	4137056.701	18.31
LOCATION	L0019981	VOLUME	588054.515	4137057.390	18.27
LOCATION	L0019982	VOLUME	588062.987	4137058.079	18.29
LOCATION	L0019983	VOLUME	588071.460	4137058.767	18.33
LOCATION	L0019984	VOLUME	588079.932	4137059.456	18.38
LOCATION	L0019985	VOLUME	588088.404	4137060.145	18.26
LOCATION	L0019986	VOLUME	588090.511	4137055.109	18.10
LOCATION	L0019987	VOLUME	588088.932	4137046.757	17.95
LOCATION	L0019988	VOLUME	588087.354	4137038.405	17.90
LOCATION	L0019989	VOLUME	588085.775	4137030.052	17.84
LOCATION	L0019990	VOLUME	588084.196	4137021.700	17.74
LOCATION	L0019991	VOLUME	588082.617	4137013.348	17.64
LOCATION	L0019992	VOLUME	588081.039	4137004.996	17.66
LOCATION	L0019993	VOLUME	588079.460	4136996.644	17.68
LOCATION	L0019994	VOLUME	588077.881	4136988.292	17.70
LOCATION	L0019995	VOLUME	588076.302	4136979.940	17.83
LOCATION	L0019996	VOLUME	588074.724	4136971.588	18.03
LOCATION	L0019997	VOLUME	588073.145	4136963.236	18.21
LOCATION	L0019998	VOLUME	588071.566	4136954.884	18.36
LOCATION	L0019999	VOLUME	588069.987	4136946.531	18.41
LOCATION	L0020000	VOLUME	588068.409	4136938.179	18.43
LOCATION	L0020001	VOLUME	588066.830	4136929.827	18.44
LOCATION	L0020002	VOLUME	588065.251	4136921.475	18.46
LOCATION	L0020003	VOLUME	588063.672	4136913.123	18.60
LOCATION	L0020004	VOLUME	588062.094	4136904.771	18.77
LOCATION	L0020005	VOLUME	588053.836	4136903.944	18.71
LOCATION	L0020006	VOLUME	588045.355	4136903.368	18.64
LOCATION	L0020007	VOLUME	588036.875	4136902.791	18.56
LOCATION	L0020008	VOLUME	588028.394	4136902.215	18.50
LOCATION	L0020009	VOLUME	588019.914	4136901.639	18.44
LOCATION	L0020010	VOLUME	588011.434	4136901.062	18.38
LOCATION	L0020011	VOLUME	588002.953	4136900.486	18.50
LOCATION	L0020012	VOLUME	587994.473	4136899.910	18.65
LOCATION	L0020013	VOLUME	587985.992	4136899.333	18.81
LOCATION	L0020014	VOLUME	587977.512	4136898.757	18.85
LOCATION	L0020015	VOLUME	587969.031	4136898.181	18.89
LOCATION	L0020016	VOLUME	587964.796	4136901.376	18.88
LOCATION	L0020017	VOLUME	587966.365	4136909.730	18.81

LOCATION	L0020018	VOLUME	587967.935	4136918.083	18.72
LOCATION	L0020019	VOLUME	587969.505	4136926.437	18.67
LOCATION	L0020020	VOLUME	587971.075	4136934.791	18.63
LOCATION	L0020021	VOLUME	587972.645	4136943.145	18.58
LOCATION	L0020022	VOLUME	587974.215	4136951.499	18.52
LOCATION	L0020023	VOLUME	587975.784	4136959.852	18.40
LOCATION	L0020024	VOLUME	587977.354	4136968.206	18.28
LOCATION	L0020025	VOLUME	587978.924	4136976.560	18.17
LOCATION	L0020026	VOLUME	587980.494	4136984.914	18.07
LOCATION	L0020027	VOLUME	587982.064	4136993.267	18.02
LOCATION	L0020028	VOLUME	587983.634	4137001.621	17.99
LOCATION	L0020029	VOLUME	587985.204	4137009.975	17.98
LOCATION	L0020030	VOLUME	587986.773	4137018.329	18.00
LOCATION	L0020031	VOLUME	587988.343	4137026.683	18.03
LOCATION	L0020032	VOLUME	587989.913	4137035.036	18.07
LOCATION	L0020033	VOLUME	587994.720	4137039.634	18.13
LOCATION	L0020034	VOLUME	588003.214	4137039.952	18.22
LOCATION	L0020035	VOLUME	588011.708	4137040.271	18.22
LOCATION	L0020036	VOLUME	588020.202	4137040.589	18.07
LOCATION	L0020037	VOLUME	588028.696	4137040.908	17.92
LOCATION	L0020038	VOLUME	588037.190	4137041.226	17.87
LOCATION	L0020039	VOLUME	588045.684	4137041.545	17.93
LOCATION	L0020040	VOLUME	588054.178	4137041.863	18.00
LOCATION	L0020041	VOLUME	588062.672	4137042.182	18.02
LOCATION	L0020042	VOLUME	588066.055	4137038.026	17.99
LOCATION	L0020043	VOLUME	588064.615	4137029.649	17.94
LOCATION	L0020044	VOLUME	588063.175	4137021.272	17.89
LOCATION	L0020045	VOLUME	588061.735	4137012.895	17.87
LOCATION	L0020046	VOLUME	588060.296	4137004.517	17.89
LOCATION	L0020047	VOLUME	588058.856	4136996.140	17.92
LOCATION	L0020048	VOLUME	588057.416	4136987.763	17.95
LOCATION	L0020049	VOLUME	588055.976	4136979.386	18.00
LOCATION	L0020050	VOLUME	588054.536	4136971.009	18.07
LOCATION	L0020051	VOLUME	588053.096	4136962.632	18.14
LOCATION	L0020052	VOLUME	588051.657	4136954.254	18.20
LOCATION	L0020053	VOLUME	588050.217	4136945.877	18.24
LOCATION	L0020054	VOLUME	588048.777	4136937.500	18.28
LOCATION	L0020055	VOLUME	588047.337	4136929.123	18.32
LOCATION	L0020056	VOLUME	588045.897	4136920.746	18.38
LOCATION	L0020057	VOLUME	588037.498	4136919.953	18.42
LOCATION	L0020058	VOLUME	588029.028	4136919.237	18.40
LOCATION	L0020059	VOLUME	588020.559	4136918.522	18.33
LOCATION	L0020060	VOLUME	588012.089	4136917.806	18.26
LOCATION	L0020061	VOLUME	588003.619	4136917.090	18.33
LOCATION	L0020062	VOLUME	587995.149	4136916.374	18.46
LOCATION	L0020063	VOLUME	587986.679	4136915.659	18.58
LOCATION	L0020064	VOLUME	587978.433	4136915.136	18.67
LOCATION	L0020065	VOLUME	587980.355	4136923.416	18.56

LOCATION	L0020066	VOLUME	587982.277	4136931.696	18.49
LOCATION	L0020067	VOLUME	587984.199	4136939.975	18.41
LOCATION	L0020068	VOLUME	587986.121	4136948.255	18.32
LOCATION	L0020069	VOLUME	587988.043	4136956.535	18.25
LOCATION	L0020070	VOLUME	587989.965	4136964.815	18.19
LOCATION	L0020071	VOLUME	587991.887	4136973.095	18.13
LOCATION	L0020072	VOLUME	587993.809	4136981.375	18.09
LOCATION	L0020073	VOLUME	587995.732	4136989.654	18.09
LOCATION	L0020074	VOLUME	587997.654	4136997.934	18.10
LOCATION	L0020075	VOLUME	587999.576	4137006.214	18.11
LOCATION	L0020076	VOLUME	588001.498	4137014.494	18.12
LOCATION	L0020077	VOLUME	588004.485	4137021.567	18.17
LOCATION	L0020078	VOLUME	588012.939	4137022.448	18.22
LOCATION	L0020079	VOLUME	588021.394	4137023.328	18.22
LOCATION	L0020080	VOLUME	588029.848	4137024.209	18.20
LOCATION	L0020081	VOLUME	588038.302	4137025.090	18.13
LOCATION	L0020082	VOLUME	588046.756	4137025.970	18.05
LOCATION	L0020083	VOLUME	588047.404	4137019.803	18.09
LOCATION	L0020084	VOLUME	588045.667	4137011.482	18.15
LOCATION	L0020085	VOLUME	588043.929	4137003.162	18.17
LOCATION	L0020086	VOLUME	588042.192	4136994.841	18.18
LOCATION	L0020087	VOLUME	588040.455	4136986.521	18.19
LOCATION	L0020088	VOLUME	588038.718	4136978.200	18.22
LOCATION	L0020089	VOLUME	588036.980	4136969.879	18.26
LOCATION	L0020090	VOLUME	588035.243	4136961.559	18.29
LOCATION	L0020091	VOLUME	588033.506	4136953.238	18.31
LOCATION	L0020092	VOLUME	588031.768	4136944.918	18.33
LOCATION	L0020093	VOLUME	588027.566	4136939.207	18.31
LOCATION	L0020094	VOLUME	588019.160	4136937.946	18.25
LOCATION	L0020095	VOLUME	588010.754	4136936.685	18.19
LOCATION	L0020096	VOLUME	588002.348	4136935.424	18.25
LOCATION	L0020097	VOLUME	587993.942	4136934.164	18.34
LOCATION	L0020098	VOLUME	587994.520	4136940.916	18.30
LOCATION	L0020099	VOLUME	587996.730	4136949.124	18.24
LOCATION	L0020100	VOLUME	587998.940	4136957.332	18.20
LOCATION	L0020101	VOLUME	588001.150	4136965.539	18.17
LOCATION	L0020102	VOLUME	588003.359	4136973.747	18.15
LOCATION	L0020103	VOLUME	588005.569	4136981.955	18.15
LOCATION	L0020104	VOLUME	588007.779	4136990.163	18.16
LOCATION	L0020105	VOLUME	588009.989	4136998.370	18.18
LOCATION	L0020106	VOLUME	588012.199	4137006.578	18.21
LOCATION	L0020107	VOLUME	588019.520	4137008.115	18.27
LOCATION	L0020108	VOLUME	588028.020	4137008.115	18.34
LOCATION	L0020109	VOLUME	588029.127	4137002.477	18.32
LOCATION	L0020110	VOLUME	588026.880	4136994.279	18.28
LOCATION	L0020111	VOLUME	588024.632	4136986.082	18.24
LOCATION	L0020112	VOLUME	588022.384	4136977.884	18.23
LOCATION	L0020113	VOLUME	588020.137	4136969.687	18.22

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   LOCATION L0020114     VOLUME   588017.889 4136961.489 18.20
   LOCATION L0020115     VOLUME   588015.641 4136953.292 18.19
** End of LINE VOLUME Source ID = SLINE1
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC South Site On-Site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.00113
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 27
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   LOCATION L0020116     VOLUME   587615.458 4136711.252 21.22
   LOCATION L0020117     VOLUME   587623.731 4136709.302 21.06
   LOCATION L0020118     VOLUME   587632.005 4136707.353 20.92
   LOCATION L0020119     VOLUME   587640.278 4136705.404 20.82
   LOCATION L0020120     VOLUME   587648.551 4136703.454 20.80
   LOCATION L0020121     VOLUME   587656.825 4136701.505 20.84
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LOCATION	L0020123	VOLUME	587673.372	4136697.606 20.92
LOCATION	L0020124	VOLUME	587681.645	4136695.657 20.90
LOCATION	L0020125	VOLUME	587689.919	4136693.708 20.89
LOCATION	L0020126	VOLUME	587698.192	4136691.758 20.86
LOCATION	L0020127	VOLUME	587706.466	4136689.809 20.80
LOCATION	L0020128	VOLUME	587714.739	4136687.860 20.71
LOCATION	L0020129	VOLUME	587723.013	4136685.910 20.68
LOCATION	L0020130	VOLUME	587731.286	4136683.961 20.67
LOCATION	L0020131	VOLUME	587739.560	4136682.012 20.64
LOCATION	L0020132	VOLUME	587747.833	4136680.062 20.65
LOCATION	L0020133	VOLUME	587756.106	4136678.113 20.67
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LOCATION	L0020135	VOLUME	587772.653	4136674.214 20.67
LOCATION	L0020136	VOLUME	587780.927	4136672.265 20.68
LOCATION	L0020137	VOLUME	587789.200	4136670.316 20.73
LOCATION	L0020138	VOLUME	587797.474	4136668.366 20.68
LOCATION	L0020139	VOLUME	587805.747	4136666.417 20.62
LOCATION	L0020140	VOLUME	587814.021	4136664.468 20.58
LOCATION	L0020141	VOLUME	587822.294	4136662.518 20.49
LOCATION	L0020142	VOLUME	587830.568	4136660.569 20.37
LOCATION	L0020143	VOLUME	587838.841	4136658.620 20.23
LOCATION	L0020144	VOLUME	587847.115	4136656.671 20.24
LOCATION	L0020145	VOLUME	587855.388	4136654.721 20.24
LOCATION	L0020146	VOLUME	587863.661	4136652.772 20.19
LOCATION	L0020147	VOLUME	587871.935	4136650.823 20.18
LOCATION	L0020148	VOLUME	587880.208	4136648.873 20.19
LOCATION	L0020149	VOLUME	587888.482	4136646.924 20.20
LOCATION	L0020150	VOLUME	587896.755	4136644.975 20.15
LOCATION	L0020151	VOLUME	587905.029	4136643.025 20.08
LOCATION	L0020152	VOLUME	587913.302	4136641.076 20.12
LOCATION	L0020153	VOLUME	587921.576	4136639.127 20.18
LOCATION	L0020154	VOLUME	587929.849	4136637.177 20.25
LOCATION	L0020155	VOLUME	587938.123	4136635.228 20.32
LOCATION	L0020156	VOLUME	587946.396	4136633.279 20.40
LOCATION	L0020157	VOLUME	587954.670	4136631.329 20.43
LOCATION	L0020158	VOLUME	587962.778	4136629.634 20.43
LOCATION	L0020159	VOLUME	587964.381	4136637.981 20.32
LOCATION	L0020160	VOLUME	587965.984	4136646.329 20.24
LOCATION	L0020161	VOLUME	587967.587	4136654.677 20.21
LOCATION	L0020162	VOLUME	587969.189	4136663.024 20.18
LOCATION	L0020163	VOLUME	587970.792	4136671.372 20.15
LOCATION	L0020164	VOLUME	587972.395	4136679.719 20.13
LOCATION	L0020165	VOLUME	587973.998	4136688.067 20.12
LOCATION	L0020166	VOLUME	587975.600	4136696.414 20.11
LOCATION	L0020167	VOLUME	587977.203	4136704.762 20.10
LOCATION	L0020168	VOLUME	587978.806	4136713.109 20.08
LOCATION	L0020169	VOLUME	587980.408	4136721.457 20.05

LOCATION	L0020170	VOLUME	587982.011	4136729.804 20.02
LOCATION	L0020171	VOLUME	587983.614	4136738.152 20.01
LOCATION	L0020172	VOLUME	587985.217	4136746.499 20.11
LOCATION	L0020173	VOLUME	587986.819	4136754.847 20.23
LOCATION	L0020174	VOLUME	587988.422	4136763.194 20.31
LOCATION	L0020175	VOLUME	587990.025	4136771.542 20.19
LOCATION	L0020176	VOLUME	587991.628	4136779.889 19.92
LOCATION	L0020177	VOLUME	587992.267	4136787.486 19.71
LOCATION	L0020178	VOLUME	587983.781	4136787.971 19.85
LOCATION	L0020179	VOLUME	587975.294	4136788.456 19.93
LOCATION	L0020180	VOLUME	587966.808	4136788.941 20.01
LOCATION	L0020181	VOLUME	587958.322	4136789.426 20.05
LOCATION	L0020182	VOLUME	587949.836	4136789.911 20.01
LOCATION	L0020183	VOLUME	587941.350	4136790.396 19.98
LOCATION	L0020184	VOLUME	587932.864	4136790.881 19.92
LOCATION	L0020185	VOLUME	587924.377	4136791.365 19.83
LOCATION	L0020186	VOLUME	587915.891	4136791.850 19.74
LOCATION	L0020187	VOLUME	587907.405	4136792.335 19.66
LOCATION	L0020188	VOLUME	587898.919	4136792.820 19.56
LOCATION	L0020189	VOLUME	587890.433	4136793.305 19.47
LOCATION	L0020190	VOLUME	587881.947	4136793.790 19.49
LOCATION	L0020191	VOLUME	587873.461	4136794.275 19.57
LOCATION	L0020192	VOLUME	587864.974	4136794.760 19.65
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LOCATION	L0020194	VOLUME	587848.355	4136798.039 19.96
LOCATION	L0020195	VOLUME	587840.112	4136800.112 20.09
LOCATION	L0020196	VOLUME	587831.868	4136802.184 20.13
LOCATION	L0020197	VOLUME	587823.625	4136804.257 20.14
LOCATION	L0020198	VOLUME	587815.381	4136806.329 20.13
LOCATION	L0020199	VOLUME	587807.138	4136808.402 20.08
LOCATION	L0020200	VOLUME	587798.894	4136810.474 20.03
LOCATION	L0020201	VOLUME	587790.651	4136812.547 19.99
LOCATION	L0020202	VOLUME	587782.407	4136814.619 20.03
LOCATION	L0020203	VOLUME	587774.164	4136816.692 20.12
LOCATION	L0020204	VOLUME	587765.921	4136818.764 20.23
LOCATION	L0020205	VOLUME	587757.677	4136820.837 20.26
LOCATION	L0020206	VOLUME	587749.434	4136822.909 20.26
LOCATION	L0020207	VOLUME	587741.190	4136824.982 20.27
LOCATION	L0020208	VOLUME	587732.947	4136827.054 20.28
LOCATION	L0020209	VOLUME	587724.703	4136829.127 20.29
LOCATION	L0020210	VOLUME	587716.460	4136831.199 20.29
LOCATION	L0020211	VOLUME	587708.216	4136833.272 20.20
LOCATION	L0020212	VOLUME	587699.973	4136835.345 20.11
LOCATION	L0020213	VOLUME	587691.729	4136837.417 20.02
LOCATION	L0020214	VOLUME	587683.486	4136839.490 20.23
LOCATION	L0020215	VOLUME	587675.242	4136841.562 20.45
LOCATION	L0020216	VOLUME	587666.999	4136843.635 20.63
LOCATION	L0020217	VOLUME	587658.755	4136845.707 20.65

LOCATION	L0020218	VOLUME	587650.512	4136847.780	20.66
LOCATION	L0020219	VOLUME	587642.269	4136849.852	20.69
LOCATION	L0020220	VOLUME	587636.052	4136848.676	20.74
LOCATION	L0020221	VOLUME	587634.293	4136840.360	20.89
LOCATION	L0020222	VOLUME	587632.533	4136832.045	21.04
LOCATION	L0020223	VOLUME	587630.773	4136823.729	21.14
LOCATION	L0020224	VOLUME	587629.013	4136815.413	21.16
LOCATION	L0020225	VOLUME	587627.253	4136807.097	21.18
LOCATION	L0020226	VOLUME	587625.493	4136798.781	21.21
LOCATION	L0020227	VOLUME	587623.733	4136790.466	21.25
LOCATION	L0020228	VOLUME	587621.973	4136782.150	21.29
LOCATION	L0020229	VOLUME	587620.213	4136773.834	21.31
LOCATION	L0020230	VOLUME	587618.453	4136765.518	21.31
LOCATION	L0020231	VOLUME	587616.693	4136757.202	21.35
LOCATION	L0020232	VOLUME	587614.933	4136748.887	21.40
LOCATION	L0020233	VOLUME	587613.173	4136740.571	21.45
LOCATION	L0020234	VOLUME	587611.413	4136732.255	21.50
LOCATION	L0020235	VOLUME	587619.141	4136729.887	21.39
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LOCATION	L0020237	VOLUME	587635.644	4136725.808	20.76
LOCATION	L0020238	VOLUME	587643.896	4136723.768	20.54
LOCATION	L0020239	VOLUME	587652.147	4136721.729	20.55
LOCATION	L0020240	VOLUME	587660.399	4136719.689	20.57
LOCATION	L0020241	VOLUME	587668.651	4136717.649	20.58
LOCATION	L0020242	VOLUME	587676.902	4136715.610	20.54
LOCATION	L0020243	VOLUME	587685.154	4136713.570	20.48
LOCATION	L0020244	VOLUME	587693.406	4136711.531	20.41
LOCATION	L0020245	VOLUME	587701.657	4136709.491	20.38
LOCATION	L0020246	VOLUME	587709.909	4136707.452	20.33
LOCATION	L0020247	VOLUME	587718.161	4136705.412	20.27
LOCATION	L0020248	VOLUME	587726.412	4136703.372	20.27
LOCATION	L0020249	VOLUME	587734.664	4136701.333	20.32
LOCATION	L0020250	VOLUME	587742.916	4136699.293	20.36
LOCATION	L0020251	VOLUME	587751.168	4136697.254	20.43
LOCATION	L0020252	VOLUME	587759.419	4136695.214	20.49
LOCATION	L0020253	VOLUME	587767.671	4136693.175	20.53
LOCATION	L0020254	VOLUME	587775.923	4136691.135	20.55
LOCATION	L0020255	VOLUME	587784.174	4136689.096	20.56
LOCATION	L0020256	VOLUME	587792.426	4136687.056	20.55
LOCATION	L0020257	VOLUME	587800.678	4136685.016	20.42
LOCATION	L0020258	VOLUME	587808.929	4136682.977	20.28
LOCATION	L0020259	VOLUME	587817.181	4136680.937	20.13
LOCATION	L0020260	VOLUME	587825.433	4136678.898	19.99
LOCATION	L0020261	VOLUME	587833.684	4136676.858	19.83
LOCATION	L0020262	VOLUME	587841.936	4136674.819	19.72
LOCATION	L0020263	VOLUME	587850.188	4136672.779	19.92
LOCATION	L0020264	VOLUME	587858.439	4136670.739	20.13
LOCATION	L0020265	VOLUME	587866.691	4136668.700	20.25

LOCATION	L0020266	VOLUME	587874.943	4136666.660	20.24
LOCATION	L0020267	VOLUME	587883.194	4136664.621	20.24
LOCATION	L0020268	VOLUME	587891.446	4136662.581	20.24
LOCATION	L0020269	VOLUME	587899.698	4136660.542	20.19
LOCATION	L0020270	VOLUME	587907.949	4136658.502	20.14
LOCATION	L0020271	VOLUME	587916.201	4136656.462	20.09
LOCATION	L0020272	VOLUME	587924.453	4136654.423	20.07
LOCATION	L0020273	VOLUME	587932.704	4136652.383	20.04
LOCATION	L0020274	VOLUME	587940.956	4136650.344	20.04
LOCATION	L0020275	VOLUME	587946.940	4136651.943	20.10
LOCATION	L0020276	VOLUME	587948.744	4136660.249	20.15
LOCATION	L0020277	VOLUME	587950.548	4136668.556	20.19
LOCATION	L0020278	VOLUME	587952.352	4136676.862	20.22
LOCATION	L0020279	VOLUME	587954.156	4136685.168	20.23
LOCATION	L0020280	VOLUME	587955.960	4136693.475	20.24
LOCATION	L0020281	VOLUME	587957.764	4136701.781	20.26
LOCATION	L0020282	VOLUME	587959.568	4136710.087	20.27
LOCATION	L0020283	VOLUME	587961.371	4136718.394	20.28
LOCATION	L0020284	VOLUME	587963.175	4136726.700	20.27
LOCATION	L0020285	VOLUME	587964.979	4136735.007	20.25
LOCATION	L0020286	VOLUME	587966.783	4136743.313	20.24
LOCATION	L0020287	VOLUME	587968.587	4136751.619	20.25
LOCATION	L0020288	VOLUME	587970.391	4136759.926	20.29
LOCATION	L0020289	VOLUME	587972.195	4136768.232	20.32
LOCATION	L0020290	VOLUME	587971.061	4136774.315	20.21
LOCATION	L0020291	VOLUME	587962.577	4136774.833	20.20
LOCATION	L0020292	VOLUME	587954.093	4136775.352	20.14
LOCATION	L0020293	VOLUME	587945.609	4136775.870	20.07
LOCATION	L0020294	VOLUME	587937.125	4136776.389	20.00
LOCATION	L0020295	VOLUME	587928.640	4136776.907	19.87
LOCATION	L0020296	VOLUME	587920.156	4136777.426	19.75
LOCATION	L0020297	VOLUME	587911.672	4136777.944	19.65
LOCATION	L0020298	VOLUME	587903.188	4136778.463	19.64
LOCATION	L0020299	VOLUME	587894.704	4136778.981	19.62
LOCATION	L0020300	VOLUME	587886.220	4136779.500	19.62
LOCATION	L0020301	VOLUME	587877.735	4136780.018	19.67
LOCATION	L0020302	VOLUME	587869.251	4136780.537	19.73
LOCATION	L0020303	VOLUME	587860.767	4136781.055	19.83
LOCATION	L0020304	VOLUME	587852.486	4136782.905	19.99
LOCATION	L0020305	VOLUME	587844.234	4136784.942	20.15
LOCATION	L0020306	VOLUME	587835.982	4136786.980	20.29
LOCATION	L0020307	VOLUME	587827.730	4136789.018	20.38
LOCATION	L0020308	VOLUME	587819.478	4136791.056	20.46
LOCATION	L0020309	VOLUME	587811.226	4136793.094	20.49
LOCATION	L0020310	VOLUME	587802.974	4136795.132	20.45
LOCATION	L0020311	VOLUME	587794.722	4136797.170	20.39
LOCATION	L0020312	VOLUME	587786.469	4136799.207	20.34
LOCATION	L0020313	VOLUME	587778.217	4136801.245	20.32

LOCATION	L0020314	VOLUME	587769.965	4136803.283 20.34
LOCATION	L0020315	VOLUME	587761.713	4136805.321 20.36
LOCATION	L0020316	VOLUME	587753.461	4136807.359 20.36
LOCATION	L0020317	VOLUME	587745.209	4136809.397 20.37
LOCATION	L0020318	VOLUME	587736.957	4136811.435 20.38
LOCATION	L0020319	VOLUME	587728.705	4136813.473 20.39
LOCATION	L0020320	VOLUME	587720.453	4136815.510 20.40
LOCATION	L0020321	VOLUME	587712.201	4136817.548 20.37
LOCATION	L0020322	VOLUME	587703.949	4136819.586 20.28
LOCATION	L0020323	VOLUME	587695.696	4136821.624 20.19
LOCATION	L0020324	VOLUME	587687.444	4136823.662 20.28
LOCATION	L0020325	VOLUME	587679.192	4136825.700 20.63
LOCATION	L0020326	VOLUME	587670.940	4136827.738 20.93
LOCATION	L0020327	VOLUME	587662.688	4136829.775 21.06
LOCATION	L0020328	VOLUME	587654.436	4136831.813 21.03
LOCATION	L0020329	VOLUME	587650.584	4136826.172 21.18
LOCATION	L0020330	VOLUME	587648.169	4136818.022 21.18
LOCATION	L0020331	VOLUME	587645.754	4136809.873 21.18
LOCATION	L0020332	VOLUME	587643.340	4136801.723 21.20
LOCATION	L0020333	VOLUME	587640.925	4136793.573 21.23
LOCATION	L0020334	VOLUME	587638.510	4136785.423 21.33
LOCATION	L0020335	VOLUME	587636.095	4136777.273 21.41
LOCATION	L0020336	VOLUME	587633.681	4136769.124 21.47
LOCATION	L0020337	VOLUME	587631.266	4136760.974 21.44
LOCATION	L0020338	VOLUME	587628.851	4136752.824 21.30
LOCATION	L0020339	VOLUME	587629.461	4136746.391 21.20
LOCATION	L0020340	VOLUME	587637.696	4136744.285 20.98
LOCATION	L0020341	VOLUME	587645.931	4136742.180 20.73
LOCATION	L0020342	VOLUME	587654.166	4136740.074 20.54
LOCATION	L0020343	VOLUME	587662.401	4136737.969 20.42
LOCATION	L0020344	VOLUME	587670.636	4136735.863 20.38
LOCATION	L0020345	VOLUME	587678.872	4136733.758 20.39
LOCATION	L0020346	VOLUME	587687.107	4136731.653 20.40
LOCATION	L0020347	VOLUME	587695.342	4136729.547 20.42
LOCATION	L0020348	VOLUME	587703.577	4136727.442 20.46
LOCATION	L0020349	VOLUME	587711.812	4136725.336 20.48
LOCATION	L0020350	VOLUME	587720.047	4136723.231 20.49
LOCATION	L0020351	VOLUME	587728.282	4136721.125 20.51
LOCATION	L0020352	VOLUME	587736.517	4136719.020 20.53
LOCATION	L0020353	VOLUME	587744.752	4136716.914 20.54
LOCATION	L0020354	VOLUME	587752.987	4136714.809 20.57
LOCATION	L0020355	VOLUME	587761.223	4136712.703 20.59
LOCATION	L0020356	VOLUME	587769.458	4136710.598 20.59
LOCATION	L0020357	VOLUME	587777.693	4136708.492 20.57
LOCATION	L0020358	VOLUME	587785.928	4136706.387 20.54
LOCATION	L0020359	VOLUME	587794.163	4136704.281 20.46
LOCATION	L0020360	VOLUME	587802.398	4136702.176 20.37
LOCATION	L0020361	VOLUME	587810.633	4136700.070 20.28

LOCATION	L0020362	VOLUME	587818.868	4136697.965	20.19
LOCATION	L0020363	VOLUME	587827.103	4136695.860	20.11
LOCATION	L0020364	VOLUME	587835.339	4136693.754	20.01
LOCATION	L0020365	VOLUME	587843.574	4136691.649	19.97
LOCATION	L0020366	VOLUME	587851.809	4136689.543	20.03
LOCATION	L0020367	VOLUME	587860.044	4136687.438	20.12
LOCATION	L0020368	VOLUME	587868.279	4136685.332	20.21
LOCATION	L0020369	VOLUME	587876.514	4136683.227	20.25
LOCATION	L0020370	VOLUME	587884.749	4136681.121	20.27
LOCATION	L0020371	VOLUME	587892.984	4136679.016	20.27
LOCATION	L0020372	VOLUME	587901.219	4136676.910	20.25
LOCATION	L0020373	VOLUME	587909.455	4136674.805	20.22
LOCATION	L0020374	VOLUME	587917.690	4136672.699	20.20
LOCATION	L0020375	VOLUME	587925.925	4136670.594	20.18
LOCATION	L0020376	VOLUME	587933.792	4136669.110	20.16
LOCATION	L0020377	VOLUME	587935.906	4136677.343	20.20
LOCATION	L0020378	VOLUME	587938.020	4136685.576	20.19
LOCATION	L0020379	VOLUME	587940.133	4136693.809	20.20
LOCATION	L0020380	VOLUME	587942.247	4136702.042	20.20
LOCATION	L0020381	VOLUME	587944.361	4136710.275	20.23
LOCATION	L0020382	VOLUME	587946.475	4136718.508	20.26
LOCATION	L0020383	VOLUME	587948.589	4136726.741	20.28
LOCATION	L0020384	VOLUME	587950.703	4136734.974	20.30
LOCATION	L0020385	VOLUME	587952.817	4136743.206	20.27
LOCATION	L0020386	VOLUME	587954.931	4136751.439	20.25
LOCATION	L0020387	VOLUME	587957.044	4136759.672	20.24
LOCATION	L0020388	VOLUME	587951.757	4136762.466	20.19
LOCATION	L0020389	VOLUME	587943.268	4136762.907	20.12
LOCATION	L0020390	VOLUME	587934.780	4136763.348	20.02
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LOCATION	L0020392	VOLUME	587917.802	4136764.230	19.71
LOCATION	L0020393	VOLUME	587909.314	4136764.671	19.64
LOCATION	L0020394	VOLUME	587900.825	4136765.112	19.69
LOCATION	L0020395	VOLUME	587892.337	4136765.552	19.75
LOCATION	L0020396	VOLUME	587883.848	4136765.993	19.79
LOCATION	L0020397	VOLUME	587875.360	4136766.434	19.82
LOCATION	L0020398	VOLUME	587866.871	4136766.875	19.86
LOCATION	L0020399	VOLUME	587858.436	4136767.683	19.98
LOCATION	L0020400	VOLUME	587850.181	4136769.705	20.14
LOCATION	L0020401	VOLUME	587841.925	4136771.728	20.30
LOCATION	L0020402	VOLUME	587833.669	4136773.751	20.43
LOCATION	L0020403	VOLUME	587825.413	4136775.774	20.54
LOCATION	L0020404	VOLUME	587817.158	4136777.797	20.65
LOCATION	L0020405	VOLUME	587808.902	4136779.820	20.66
LOCATION	L0020406	VOLUME	587800.646	4136781.843	20.63
LOCATION	L0020407	VOLUME	587792.390	4136783.866	20.59
LOCATION	L0020408	VOLUME	587784.135	4136785.889	20.55
LOCATION	L0020409	VOLUME	587775.879	4136787.912	20.52

LOCATION	L0020410	VOLUME	587767.623	4136789.935 20.49
LOCATION	L0020411	VOLUME	587759.367	4136791.958 20.48
LOCATION	L0020412	VOLUME	587751.111	4136793.981 20.47
LOCATION	L0020413	VOLUME	587742.856	4136796.004 20.47
LOCATION	L0020414	VOLUME	587734.600	4136798.027 20.47
LOCATION	L0020415	VOLUME	587726.344	4136800.049 20.46
LOCATION	L0020416	VOLUME	587718.088	4136802.072 20.46
LOCATION	L0020417	VOLUME	587709.833	4136804.095 20.40
LOCATION	L0020418	VOLUME	587701.577	4136806.118 20.31
LOCATION	L0020419	VOLUME	587693.321	4136808.141 20.22
LOCATION	L0020420	VOLUME	587685.065	4136810.164 20.40
LOCATION	L0020421	VOLUME	587676.810	4136812.187 20.69
LOCATION	L0020422	VOLUME	587669.186	4136813.087 20.97
LOCATION	L0020423	VOLUME	587666.630	4136804.980 20.99
LOCATION	L0020424	VOLUME	587664.075	4136796.873 20.95
LOCATION	L0020425	VOLUME	587661.520	4136788.766 20.91
LOCATION	L0020426	VOLUME	587658.964	4136780.660 20.90
LOCATION	L0020427	VOLUME	587656.409	4136772.553 20.95
LOCATION	L0020428	VOLUME	587653.853	4136764.446 21.06
LOCATION	L0020429	VOLUME	587651.298	4136756.339 21.00
LOCATION	L0020430	VOLUME	587658.873	4136753.895 20.67
LOCATION	L0020431	VOLUME	587667.117	4136751.825 20.37
LOCATION	L0020432	VOLUME	587675.361	4136749.754 20.43
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LOCATION	L0020434	VOLUME	587691.849	4136745.613 20.52
LOCATION	L0020435	VOLUME	587700.093	4136743.543 20.53
LOCATION	L0020436	VOLUME	587708.337	4136741.472 20.56
LOCATION	L0020437	VOLUME	587716.581	4136739.402 20.60
LOCATION	L0020438	VOLUME	587724.825	4136737.331 20.66
LOCATION	L0020439	VOLUME	587733.069	4136735.261 20.73
LOCATION	L0020440	VOLUME	587741.313	4136733.190 20.78
LOCATION	L0020441	VOLUME	587749.557	4136731.120 20.82
LOCATION	L0020442	VOLUME	587757.801	4136729.049 20.86
LOCATION	L0020443	VOLUME	587766.045	4136726.979 20.90
LOCATION	L0020444	VOLUME	587774.289	4136724.908 20.89
LOCATION	L0020445	VOLUME	587782.533	4136722.838 20.88
LOCATION	L0020446	VOLUME	587790.777	4136720.767 20.86
LOCATION	L0020447	VOLUME	587799.021	4136718.697 20.71
LOCATION	L0020448	VOLUME	587807.265	4136716.626 20.56
LOCATION	L0020449	VOLUME	587815.509	4136714.556 20.43
LOCATION	L0020450	VOLUME	587823.753	4136712.485 20.33
LOCATION	L0020451	VOLUME	587831.997	4136710.415 20.25
LOCATION	L0020452	VOLUME	587840.241	4136708.344 20.17
LOCATION	L0020453	VOLUME	587848.485	4136706.274 20.12
LOCATION	L0020454	VOLUME	587856.729	4136704.203 20.09
LOCATION	L0020455	VOLUME	587864.973	4136702.133 20.10
LOCATION	L0020456	VOLUME	587873.217	4136700.062 20.18
LOCATION	L0020457	VOLUME	587881.461	4136697.992 20.25

LOCATION	L0020458	VOLUME	587889.705	4136695.921 20.30
LOCATION	L0020459	VOLUME	587897.949	4136693.851 20.27
LOCATION	L0020460	VOLUME	587906.193	4136691.780 20.24
LOCATION	L0020461	VOLUME	587914.437	4136689.710 20.21
LOCATION	L0020462	VOLUME	587922.681	4136687.639 20.20
LOCATION	L0020463	VOLUME	587926.882	4136692.406 20.20
LOCATION	L0020464	VOLUME	587929.042	4136700.627 20.20
LOCATION	L0020465	VOLUME	587931.201	4136708.848 20.20
LOCATION	L0020466	VOLUME	587933.360	4136717.069 20.21
LOCATION	L0020467	VOLUME	587935.519	4136725.290 20.25
LOCATION	L0020468	VOLUME	587937.678	4136733.512 20.31
LOCATION	L0020469	VOLUME	587939.837	4136741.733 20.27
LOCATION	L0020470	VOLUME	587941.431	4136749.547 20.21
LOCATION	L0020471	VOLUME	587932.949	4136750.108 20.11
LOCATION	L0020472	VOLUME	587924.468	4136750.669 19.96
LOCATION	L0020473	VOLUME	587915.986	4136751.231 19.81
LOCATION	L0020474	VOLUME	587907.505	4136751.792 19.79
LOCATION	L0020475	VOLUME	587899.023	4136752.353 19.83
LOCATION	L0020476	VOLUME	587890.542	4136752.914 19.87
LOCATION	L0020477	VOLUME	587882.060	4136753.476 19.88
LOCATION	L0020478	VOLUME	587873.579	4136754.037 19.89
LOCATION	L0020479	VOLUME	587865.098	4136754.598 19.90
LOCATION	L0020480	VOLUME	587856.616	4136755.160 20.06
LOCATION	L0020481	VOLUME	587848.352	4136757.105 20.23
LOCATION	L0020482	VOLUME	587840.108	4136759.173 20.40
LOCATION	L0020483	VOLUME	587831.863	4136761.242 20.54
LOCATION	L0020484	VOLUME	587823.619	4136763.310 20.68
LOCATION	L0020485	VOLUME	587815.374	4136765.379 20.83
LOCATION	L0020486	VOLUME	587807.130	4136767.447 20.82
LOCATION	L0020487	VOLUME	587798.885	4136769.516 20.80
LOCATION	L0020488	VOLUME	587790.641	4136771.584 20.77
LOCATION	L0020489	VOLUME	587782.396	4136773.653 20.72
LOCATION	L0020490	VOLUME	587774.152	4136775.721 20.68
LOCATION	L0020491	VOLUME	587765.908	4136777.790 20.64
LOCATION	L0020492	VOLUME	587757.663	4136779.858 20.63
LOCATION	L0020493	VOLUME	587749.419	4136781.927 20.63
LOCATION	L0020494	VOLUME	587741.174	4136783.995 20.62
LOCATION	L0020495	VOLUME	587732.930	4136786.064 20.58
LOCATION	L0020496	VOLUME	587724.685	4136788.132 20.54
LOCATION	L0020497	VOLUME	587716.441	4136790.201 20.52
LOCATION	L0020498	VOLUME	587708.196	4136792.269 20.44
LOCATION	L0020499	VOLUME	587699.952	4136794.338 20.35
LOCATION	L0020500	VOLUME	587691.707	4136796.406 20.25
LOCATION	L0020501	VOLUME	587683.463	4136798.475 20.46
LOCATION	L0020502	VOLUME	587678.064	4136795.214 20.61
LOCATION	L0020503	VOLUME	587675.195	4136787.212 20.63
LOCATION	L0020504	VOLUME	587672.327	4136779.211 20.60
LOCATION	L0020505	VOLUME	587669.459	4136771.210 20.51

LOCATION	L0020506	VOLUME	587670.399	4136765.245 20.43
LOCATION	L0020507	VOLUME	587678.647	4136763.189 20.52
LOCATION	L0020508	VOLUME	587686.894	4136761.132 20.61
LOCATION	L0020509	VOLUME	587695.142	4136759.075 20.65
LOCATION	L0020510	VOLUME	587703.389	4136757.019 20.63
LOCATION	L0020511	VOLUME	587711.637	4136754.962 20.62
LOCATION	L0020512	VOLUME	587719.884	4136752.905 20.66
LOCATION	L0020513	VOLUME	587728.131	4136750.849 20.72
LOCATION	L0020514	VOLUME	587736.379	4136748.792 20.79
LOCATION	L0020515	VOLUME	587744.626	4136746.735 20.84
LOCATION	L0020516	VOLUME	587752.874	4136744.679 20.88
LOCATION	L0020517	VOLUME	587761.121	4136742.622 20.94
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LOCATION	L0020519	VOLUME	587777.616	4136738.509 21.06
LOCATION	L0020520	VOLUME	587785.863	4136736.452 21.12
LOCATION	L0020521	VOLUME	587794.111	4136734.395 21.10
LOCATION	L0020522	VOLUME	587802.358	4136732.339 20.94
LOCATION	L0020523	VOLUME	587810.606	4136730.282 20.78
LOCATION	L0020524	VOLUME	587818.853	4136728.225 20.64
LOCATION	L0020525	VOLUME	587827.101	4136726.169 20.52
LOCATION	L0020526	VOLUME	587835.348	4136724.112 20.41
LOCATION	L0020527	VOLUME	587843.595	4136722.055 20.29
LOCATION	L0020528	VOLUME	587851.843	4136719.999 20.17
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LOCATION	L0020530	VOLUME	587868.338	4136715.885 20.06
LOCATION	L0020531	VOLUME	587876.585	4136713.829 20.13
LOCATION	L0020532	VOLUME	587884.833	4136711.772 20.22
LOCATION	L0020533	VOLUME	587893.080	4136709.715 20.25
LOCATION	L0020534	VOLUME	587901.328	4136707.659 20.24
LOCATION	L0020535	VOLUME	587909.575	4136705.602 20.22
LOCATION	L0020536	VOLUME	587917.822	4136703.545 20.21
LOCATION	L0020537	VOLUME	587920.624	4136710.888 20.17
LOCATION	L0020538	VOLUME	587922.941	4136719.066 20.15
LOCATION	L0020539	VOLUME	587925.258	4136727.244 20.14
LOCATION	L0020540	VOLUME	587927.575	4136735.422 20.16
LOCATION	L0020541	VOLUME	587926.850	4136741.320 20.09
LOCATION	L0020542	VOLUME	587918.350	4136741.388 19.95
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LOCATION	L0020545	VOLUME	587892.851	4136741.594 19.96
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LOCATION	L0020549	VOLUME	587858.852	4136741.868 20.05
LOCATION	L0020550	VOLUME	587850.371	4136742.068 20.24
LOCATION	L0020551	VOLUME	587842.174	4136744.319 20.42
LOCATION	L0020552	VOLUME	587833.977	4136746.569 20.55
LOCATION	L0020553	VOLUME	587825.781	4136748.819 20.66

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   LOCATION L0020560     VOLUME   587768.403 4136764.569 20.80
   LOCATION L0020561     VOLUME   587760.206 4136766.820 20.78
   LOCATION L0020562     VOLUME   587752.010 4136769.070 20.78
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   LOCATION L0020579     VOLUME   587752.198 4136758.250 20.85
   LOCATION L0020580     VOLUME   587760.426 4136756.118 20.86
   LOCATION L0020581     VOLUME   587768.654 4136753.985 20.89
   LOCATION L0020582     VOLUME   587776.882 4136751.853 20.94
   LOCATION L0020583     VOLUME   587785.111 4136749.721 20.99
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   LOCATION L0020585     VOLUME   587801.567 4136745.456 20.94
   LOCATION L0020586     VOLUME   587809.795 4136743.323 20.87
   LOCATION L0020587     VOLUME   587818.023 4136741.191 20.77
   LOCATION L0020588     VOLUME   587826.251 4136739.059 20.66
   LOCATION L0020589     VOLUME   587834.480 4136736.926 20.57
   LOCATION L0020590     VOLUME   587842.708 4136734.794 20.44
   LOCATION L0020591     VOLUME   587850.936 4136732.662 20.24
   LOCATION L0020592     VOLUME   587859.164 4136730.529 20.07
   LOCATION L0020593     VOLUME   587867.392 4136728.397 19.99
   LOCATION L0020594     VOLUME   587875.621 4136726.264 20.05
   LOCATION L0020595     VOLUME   587883.849 4136724.132 20.11
   LOCATION L0020596     VOLUME   587892.077 4136722.000 20.14
   LOCATION L0020597     VOLUME   587900.305 4136719.867 20.13
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** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
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   SRCPARAM L0020589     0.00000234      3.11      3.95      2.89
   SRCPARAM L0020590     0.00000234      3.11      3.95      2.89
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   SRCPARAM L0020592     0.00000234      3.11      3.95      2.89
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** AERMOD Receptor Pathway
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RE FINISHED
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** AERMOD Meteorology Pathway
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Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
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   UAIRDATA 23230 2009 OAKLAND/WSO_AP
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ME FINISHED
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** AERMOD Output Pathway
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   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "INTUITIVE TIER 3 1.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "INTUITIVE TIER 3 1.AD\24H1GALL.PLT" 32
   PLOTFILE 24 ALL 8TH "INTUITIVE TIER 3 1.AD\24H8GALL.PLT" 33
   PLOTFILE ANNUAL ALL "INTUITIVE TIER 3 1.AD\AN00GALL.PLT" 34
   SUMMFILE "Intuitive Tier 3 1.sum"
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** Project Parameters
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** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
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** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 1/13/2020
** File: C:\Lakes\AERMOD View\Intuitive Tier 3 1.13\Intuitive Tier 3 1.ADI
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** AERMOD Control Pathway
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   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
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CO FINISHED
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** AERMOD Source Pathway
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SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC North Site On-site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.00108
** Vertical Dimension = 6.22
** SZINIT = 2.89
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   LOCATION L0019668     VOLUME   587898.082 4136871.785 19.54
   LOCATION L0019669     VOLUME   587899.636 4136880.141 19.74
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   LOCATION L0019674     VOLUME   587907.406 4136921.925 20.07
   LOCATION L0019675     VOLUME   587908.960 4136930.282 19.85
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   LOCATION L0019678     VOLUME   587913.622 4136955.352 19.28
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LOCATION	L0019697	VOLUME	587971.230	4137084.034 19.32
LOCATION	L0019698	VOLUME	587979.674	4137085.006 19.17
LOCATION	L0019699	VOLUME	587988.118	4137085.979 19.12
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LOCATION	L0019713	VOLUME	588105.611	4137104.303 17.88
LOCATION	L0019714	VOLUME	588113.956	4137105.917 18.11
LOCATION	L0019715	VOLUME	588122.302	4137107.531 18.38
LOCATION	L0019716	VOLUME	588130.647	4137109.146 18.58
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LOCATION	L0019722	VOLUME	588131.526	4137064.513 18.80
LOCATION	L0019723	VOLUME	588130.744	4137056.049 19.06
LOCATION	L0019724	VOLUME	588129.961	4137047.586 19.28
LOCATION	L0019725	VOLUME	588129.178	4137039.122 19.06
LOCATION	L0019726	VOLUME	588128.396	4137030.658 18.80
LOCATION	L0019727	VOLUME	588127.613	4137022.194 18.55
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LOCATION	L0019742	VOLUME	588115.874	4136895.235 18.93
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LOCATION	L0019747	VOLUME	588111.962	4136852.916 19.33
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LOCATION	L0019783	VOLUME	587922.635	4136920.290 19.36
LOCATION	L0019784	VOLUME	587923.991	4136928.681 19.45
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LOCATION	L0019794	VOLUME	587937.552	4137012.593 20.31
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LOCATION	L0019797	VOLUME	587941.621	4137037.766 19.65
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LOCATION	L0019818	VOLUME	588088.335	4137087.758 18.28
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LOCATION	L0019832	VOLUME	588113.293	4137006.525 18.05
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LOCATION	L0019840	VOLUME	588106.449	4136938.870 19.17
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LOCATION	L0019843	VOLUME	588103.883	4136913.500 19.11
LOCATION	L0019844	VOLUME	588103.027	4136905.043 19.03
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LOCATION	L0019847	VOLUME	588100.461	4136879.672 19.15
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LOCATION	L0019852	VOLUME	588078.491	4136857.628 19.59
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LOCATION	L0019854	VOLUME	588061.501	4136858.195 19.48
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LOCATION	L0019856	VOLUME	588044.510	4136858.761 18.83
LOCATION	L0019857	VOLUME	588036.015	4136859.044 18.47
LOCATION	L0019858	VOLUME	588027.520	4136859.327 18.48
LOCATION	L0019859	VOLUME	588019.024	4136859.611 18.54
LOCATION	L0019860	VOLUME	588010.529	4136859.894 18.59
LOCATION	L0019861	VOLUME	588002.034	4136860.177 18.60
LOCATION	L0019862	VOLUME	587993.539	4136860.460 18.62
LOCATION	L0019863	VOLUME	587985.043	4136860.743 18.65
LOCATION	L0019864	VOLUME	587976.548	4136861.026 18.65
LOCATION	L0019865	VOLUME	587968.053	4136861.310 18.65
LOCATION	L0019866	VOLUME	587959.558	4136861.593 18.65
LOCATION	L0019867	VOLUME	587951.062	4136861.876 18.62
LOCATION	L0019868	VOLUME	587942.567	4136862.159 18.58
LOCATION	L0019869	VOLUME	587934.072	4136862.442 18.65
LOCATION	L0019870	VOLUME	587927.278	4136864.144 18.94
LOCATION	L0019871	VOLUME	587928.530	4136872.551 19.04
LOCATION	L0019872	VOLUME	587929.781	4136880.959 19.09
LOCATION	L0019873	VOLUME	587931.032	4136889.366 19.10

LOCATION	L0019874	VOLUME	587932.284	4136897.774 18.90
LOCATION	L0019875	VOLUME	587933.535	4136906.181 18.68
LOCATION	L0019876	VOLUME	587934.786	4136914.588 18.47
LOCATION	L0019877	VOLUME	587936.038	4136922.996 18.48
LOCATION	L0019878	VOLUME	587937.289	4136931.403 19.18
LOCATION	L0019879	VOLUME	587938.540	4136939.811 19.80
LOCATION	L0019880	VOLUME	587939.792	4136948.218 20.35
LOCATION	L0019881	VOLUME	587941.043	4136956.625 20.49
LOCATION	L0019882	VOLUME	587942.294	4136965.033 20.36
LOCATION	L0019883	VOLUME	587943.546	4136973.440 20.21
LOCATION	L0019884	VOLUME	587944.797	4136981.848 20.04
LOCATION	L0019885	VOLUME	587946.048	4136990.255 19.74
LOCATION	L0019886	VOLUME	587947.300	4136998.662 19.44
LOCATION	L0019887	VOLUME	587948.551	4137007.070 19.12
LOCATION	L0019888	VOLUME	587949.802	4137015.477 18.84
LOCATION	L0019889	VOLUME	587951.054	4137023.884 18.65
LOCATION	L0019890	VOLUME	587952.305	4137032.292 18.47
LOCATION	L0019891	VOLUME	587953.556	4137040.699 18.30
LOCATION	L0019892	VOLUME	587954.808	4137049.107 18.42
LOCATION	L0019893	VOLUME	587956.059	4137057.514 18.88
LOCATION	L0019894	VOLUME	587957.310	4137065.921 19.44
LOCATION	L0019895	VOLUME	587964.822	4137067.505 19.54
LOCATION	L0019896	VOLUME	587973.306	4137068.029 19.54
LOCATION	L0019897	VOLUME	587981.790	4137068.552 19.53
LOCATION	L0019898	VOLUME	587990.273	4137069.076 19.64
LOCATION	L0019899	VOLUME	587998.757	4137069.600 19.80
LOCATION	L0019900	VOLUME	588007.241	4137070.123 19.95
LOCATION	L0019901	VOLUME	588015.725	4137070.647 19.74
LOCATION	L0019902	VOLUME	588024.209	4137071.171 19.48
LOCATION	L0019903	VOLUME	588032.693	4137071.694 19.21
LOCATION	L0019904	VOLUME	588041.177	4137072.218 18.99
LOCATION	L0019905	VOLUME	588049.660	4137072.742 18.76
LOCATION	L0019906	VOLUME	588058.144	4137073.266 18.55
LOCATION	L0019907	VOLUME	588066.628	4137073.789 18.62
LOCATION	L0019908	VOLUME	588075.112	4137074.313 18.69
LOCATION	L0019909	VOLUME	588083.596	4137074.837 18.71
LOCATION	L0019910	VOLUME	588092.080	4137075.360 18.49
LOCATION	L0019911	VOLUME	588100.563	4137075.884 18.26
LOCATION	L0019912	VOLUME	588109.047	4137076.408 18.13
LOCATION	L0019913	VOLUME	588110.607	4137070.550 18.10
LOCATION	L0019914	VOLUME	588109.393	4137062.137 17.98
LOCATION	L0019915	VOLUME	588108.180	4137053.724 17.81
LOCATION	L0019916	VOLUME	588106.967	4137045.311 17.62
LOCATION	L0019917	VOLUME	588105.753	4137036.898 17.74
LOCATION	L0019918	VOLUME	588104.540	4137028.485 17.84
LOCATION	L0019919	VOLUME	588103.326	4137020.072 17.91
LOCATION	L0019920	VOLUME	588102.113	4137011.660 17.90
LOCATION	L0019921	VOLUME	588100.899	4137003.247 17.81

LOCATION	L0019922	VOLUME	588099.686	4136994.834 17.73
LOCATION	L0019923	VOLUME	588098.473	4136986.421 17.66
LOCATION	L0019924	VOLUME	588097.259	4136978.008 17.90
LOCATION	L0019925	VOLUME	588096.046	4136969.595 18.24
LOCATION	L0019926	VOLUME	588094.832	4136961.182 18.56
LOCATION	L0019927	VOLUME	588093.619	4136952.769 18.84
LOCATION	L0019928	VOLUME	588092.406	4136944.356 18.88
LOCATION	L0019929	VOLUME	588091.192	4136935.943 18.92
LOCATION	L0019930	VOLUME	588089.979	4136927.530 18.97
LOCATION	L0019931	VOLUME	588088.765	4136919.117 19.00
LOCATION	L0019932	VOLUME	588087.552	4136910.704 19.02
LOCATION	L0019933	VOLUME	588086.339	4136902.291 19.05
LOCATION	L0019934	VOLUME	588085.125	4136893.878 19.10
LOCATION	L0019935	VOLUME	588083.912	4136885.465 19.24
LOCATION	L0019936	VOLUME	588081.154	4136878.875 19.34
LOCATION	L0019937	VOLUME	588072.656	4136879.057 19.30
LOCATION	L0019938	VOLUME	588064.158	4136879.239 19.26
LOCATION	L0019939	VOLUME	588055.660	4136879.421 19.13
LOCATION	L0019940	VOLUME	588047.162	4136879.603 18.88
LOCATION	L0019941	VOLUME	588038.664	4136879.785 18.64
LOCATION	L0019942	VOLUME	588030.166	4136879.967 18.53
LOCATION	L0019943	VOLUME	588021.668	4136880.149 18.51
LOCATION	L0019944	VOLUME	588013.170	4136880.331 18.50
LOCATION	L0019945	VOLUME	588004.672	4136880.513 18.57
LOCATION	L0019946	VOLUME	587996.174	4136880.696 18.69
LOCATION	L0019947	VOLUME	587987.675	4136880.878 18.81
LOCATION	L0019948	VOLUME	587979.177	4136881.060 18.85
LOCATION	L0019949	VOLUME	587970.679	4136881.242 18.86
LOCATION	L0019950	VOLUME	587962.181	4136881.424 18.87
LOCATION	L0019951	VOLUME	587953.683	4136881.606 18.80
LOCATION	L0019952	VOLUME	587950.552	4136886.328 18.80
LOCATION	L0019953	VOLUME	587951.780	4136894.739 18.81
LOCATION	L0019954	VOLUME	587953.009	4136903.150 18.76
LOCATION	L0019955	VOLUME	587954.237	4136911.560 18.72
LOCATION	L0019956	VOLUME	587955.466	4136919.971 18.68
LOCATION	L0019957	VOLUME	587956.694	4136928.382 18.80
LOCATION	L0019958	VOLUME	587957.923	4136936.793 18.87
LOCATION	L0019959	VOLUME	587959.151	4136945.203 18.87
LOCATION	L0019960	VOLUME	587960.380	4136953.614 18.77
LOCATION	L0019961	VOLUME	587961.608	4136962.025 18.62
LOCATION	L0019962	VOLUME	587962.837	4136970.436 18.47
LOCATION	L0019963	VOLUME	587964.066	4136978.846 18.33
LOCATION	L0019964	VOLUME	587965.294	4136987.257 18.18
LOCATION	L0019965	VOLUME	587966.523	4136995.668 18.04
LOCATION	L0019966	VOLUME	587967.751	4137004.079 17.92
LOCATION	L0019967	VOLUME	587968.980	4137012.489 17.81
LOCATION	L0019968	VOLUME	587970.208	4137020.900 17.81
LOCATION	L0019969	VOLUME	587971.437	4137029.311 17.83

LOCATION	L0019970	VOLUME	587972.665	4137037.722	17.85
LOCATION	L0019971	VOLUME	587973.894	4137046.132	17.98
LOCATION	L0019972	VOLUME	587978.267	4137051.191	18.38
LOCATION	L0019973	VOLUME	587986.739	4137051.880	18.51
LOCATION	L0019974	VOLUME	587995.211	4137052.568	18.65
LOCATION	L0019975	VOLUME	588003.683	4137053.257	18.79
LOCATION	L0019976	VOLUME	588012.155	4137053.946	18.79
LOCATION	L0019977	VOLUME	588020.627	4137054.635	18.60
LOCATION	L0019978	VOLUME	588029.099	4137055.323	18.41
LOCATION	L0019979	VOLUME	588037.571	4137056.012	18.32
LOCATION	L0019980	VOLUME	588046.043	4137056.701	18.31
LOCATION	L0019981	VOLUME	588054.515	4137057.390	18.27
LOCATION	L0019982	VOLUME	588062.987	4137058.079	18.29
LOCATION	L0019983	VOLUME	588071.460	4137058.767	18.33
LOCATION	L0019984	VOLUME	588079.932	4137059.456	18.38
LOCATION	L0019985	VOLUME	588088.404	4137060.145	18.26
LOCATION	L0019986	VOLUME	588090.511	4137055.109	18.10
LOCATION	L0019987	VOLUME	588088.932	4137046.757	17.95
LOCATION	L0019988	VOLUME	588087.354	4137038.405	17.90
LOCATION	L0019989	VOLUME	588085.775	4137030.052	17.84
LOCATION	L0019990	VOLUME	588084.196	4137021.700	17.74
LOCATION	L0019991	VOLUME	588082.617	4137013.348	17.64
LOCATION	L0019992	VOLUME	588081.039	4137004.996	17.66
LOCATION	L0019993	VOLUME	588079.460	4136996.644	17.68
LOCATION	L0019994	VOLUME	588077.881	4136988.292	17.70
LOCATION	L0019995	VOLUME	588076.302	4136979.940	17.83
LOCATION	L0019996	VOLUME	588074.724	4136971.588	18.03
LOCATION	L0019997	VOLUME	588073.145	4136963.236	18.21
LOCATION	L0019998	VOLUME	588071.566	4136954.884	18.36
LOCATION	L0019999	VOLUME	588069.987	4136946.531	18.41
LOCATION	L0020000	VOLUME	588068.409	4136938.179	18.43
LOCATION	L0020001	VOLUME	588066.830	4136929.827	18.44
LOCATION	L0020002	VOLUME	588065.251	4136921.475	18.46
LOCATION	L0020003	VOLUME	588063.672	4136913.123	18.60
LOCATION	L0020004	VOLUME	588062.094	4136904.771	18.77
LOCATION	L0020005	VOLUME	588053.836	4136903.944	18.71
LOCATION	L0020006	VOLUME	588045.355	4136903.368	18.64
LOCATION	L0020007	VOLUME	588036.875	4136902.791	18.56
LOCATION	L0020008	VOLUME	588028.394	4136902.215	18.50
LOCATION	L0020009	VOLUME	588019.914	4136901.639	18.44
LOCATION	L0020010	VOLUME	588011.434	4136901.062	18.38
LOCATION	L0020011	VOLUME	588002.953	4136900.486	18.50
LOCATION	L0020012	VOLUME	587994.473	4136899.910	18.65
LOCATION	L0020013	VOLUME	587985.992	4136899.333	18.81
LOCATION	L0020014	VOLUME	587977.512	4136898.757	18.85
LOCATION	L0020015	VOLUME	587969.031	4136898.181	18.89
LOCATION	L0020016	VOLUME	587964.796	4136901.376	18.88
LOCATION	L0020017	VOLUME	587966.365	4136909.730	18.81

LOCATION	L0020018	VOLUME	587967.935	4136918.083 18.72
LOCATION	L0020019	VOLUME	587969.505	4136926.437 18.67
LOCATION	L0020020	VOLUME	587971.075	4136934.791 18.63
LOCATION	L0020021	VOLUME	587972.645	4136943.145 18.58
LOCATION	L0020022	VOLUME	587974.215	4136951.499 18.52
LOCATION	L0020023	VOLUME	587975.784	4136959.852 18.40
LOCATION	L0020024	VOLUME	587977.354	4136968.206 18.28
LOCATION	L0020025	VOLUME	587978.924	4136976.560 18.17
LOCATION	L0020026	VOLUME	587980.494	4136984.914 18.07
LOCATION	L0020027	VOLUME	587982.064	4136993.267 18.02
LOCATION	L0020028	VOLUME	587983.634	4137001.621 17.99
LOCATION	L0020029	VOLUME	587985.204	4137009.975 17.98
LOCATION	L0020030	VOLUME	587986.773	4137018.329 18.00
LOCATION	L0020031	VOLUME	587988.343	4137026.683 18.03
LOCATION	L0020032	VOLUME	587989.913	4137035.036 18.07
LOCATION	L0020033	VOLUME	587994.720	4137039.634 18.13
LOCATION	L0020034	VOLUME	588003.214	4137039.952 18.22
LOCATION	L0020035	VOLUME	588011.708	4137040.271 18.22
LOCATION	L0020036	VOLUME	588020.202	4137040.589 18.07
LOCATION	L0020037	VOLUME	588028.696	4137040.908 17.92
LOCATION	L0020038	VOLUME	588037.190	4137041.226 17.87
LOCATION	L0020039	VOLUME	588045.684	4137041.545 17.93
LOCATION	L0020040	VOLUME	588054.178	4137041.863 18.00
LOCATION	L0020041	VOLUME	588062.672	4137042.182 18.02
LOCATION	L0020042	VOLUME	588066.055	4137038.026 17.99
LOCATION	L0020043	VOLUME	588064.615	4137029.649 17.94
LOCATION	L0020044	VOLUME	588063.175	4137021.272 17.89
LOCATION	L0020045	VOLUME	588061.735	4137012.895 17.87
LOCATION	L0020046	VOLUME	588060.296	4137004.517 17.89
LOCATION	L0020047	VOLUME	588058.856	4136996.140 17.92
LOCATION	L0020048	VOLUME	588057.416	4136987.763 17.95
LOCATION	L0020049	VOLUME	588055.976	4136979.386 18.00
LOCATION	L0020050	VOLUME	588054.536	4136971.009 18.07
LOCATION	L0020051	VOLUME	588053.096	4136962.632 18.14
LOCATION	L0020052	VOLUME	588051.657	4136954.254 18.20
LOCATION	L0020053	VOLUME	588050.217	4136945.877 18.24
LOCATION	L0020054	VOLUME	588048.777	4136937.500 18.28
LOCATION	L0020055	VOLUME	588047.337	4136929.123 18.32
LOCATION	L0020056	VOLUME	588045.897	4136920.746 18.38
LOCATION	L0020057	VOLUME	588037.498	4136919.953 18.42
LOCATION	L0020058	VOLUME	588029.028	4136919.237 18.40
LOCATION	L0020059	VOLUME	588020.559	4136918.522 18.33
LOCATION	L0020060	VOLUME	588012.089	4136917.806 18.26
LOCATION	L0020061	VOLUME	588003.619	4136917.090 18.33
LOCATION	L0020062	VOLUME	587995.149	4136916.374 18.46
LOCATION	L0020063	VOLUME	587986.679	4136915.659 18.58
LOCATION	L0020064	VOLUME	587978.433	4136915.136 18.67
LOCATION	L0020065	VOLUME	587980.355	4136923.416 18.56

LOCATION	L0020066	VOLUME	587982.277	4136931.696	18.49
LOCATION	L0020067	VOLUME	587984.199	4136939.975	18.41
LOCATION	L0020068	VOLUME	587986.121	4136948.255	18.32
LOCATION	L0020069	VOLUME	587988.043	4136956.535	18.25
LOCATION	L0020070	VOLUME	587989.965	4136964.815	18.19
LOCATION	L0020071	VOLUME	587991.887	4136973.095	18.13
LOCATION	L0020072	VOLUME	587993.809	4136981.375	18.09
LOCATION	L0020073	VOLUME	587995.732	4136989.654	18.09
LOCATION	L0020074	VOLUME	587997.654	4136997.934	18.10
LOCATION	L0020075	VOLUME	587999.576	4137006.214	18.11
LOCATION	L0020076	VOLUME	588001.498	4137014.494	18.12
LOCATION	L0020077	VOLUME	588004.485	4137021.567	18.17
LOCATION	L0020078	VOLUME	588012.939	4137022.448	18.22
LOCATION	L0020079	VOLUME	588021.394	4137023.328	18.22
LOCATION	L0020080	VOLUME	588029.848	4137024.209	18.20
LOCATION	L0020081	VOLUME	588038.302	4137025.090	18.13
LOCATION	L0020082	VOLUME	588046.756	4137025.970	18.05
LOCATION	L0020083	VOLUME	588047.404	4137019.803	18.09
LOCATION	L0020084	VOLUME	588045.667	4137011.482	18.15
LOCATION	L0020085	VOLUME	588043.929	4137003.162	18.17
LOCATION	L0020086	VOLUME	588042.192	4136994.841	18.18
LOCATION	L0020087	VOLUME	588040.455	4136986.521	18.19
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LOCATION	L0020089	VOLUME	588036.980	4136969.879	18.26
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LOCATION	L0020091	VOLUME	588033.506	4136953.238	18.31
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LOCATION	L0020093	VOLUME	588027.566	4136939.207	18.31
LOCATION	L0020094	VOLUME	588019.160	4136937.946	18.25
LOCATION	L0020095	VOLUME	588010.754	4136936.685	18.19
LOCATION	L0020096	VOLUME	588002.348	4136935.424	18.25
LOCATION	L0020097	VOLUME	587993.942	4136934.164	18.34
LOCATION	L0020098	VOLUME	587994.520	4136940.916	18.30
LOCATION	L0020099	VOLUME	587996.730	4136949.124	18.24
LOCATION	L0020100	VOLUME	587998.940	4136957.332	18.20
LOCATION	L0020101	VOLUME	588001.150	4136965.539	18.17
LOCATION	L0020102	VOLUME	588003.359	4136973.747	18.15
LOCATION	L0020103	VOLUME	588005.569	4136981.955	18.15
LOCATION	L0020104	VOLUME	588007.779	4136990.163	18.16
LOCATION	L0020105	VOLUME	588009.989	4136998.370	18.18
LOCATION	L0020106	VOLUME	588012.199	4137006.578	18.21
LOCATION	L0020107	VOLUME	588019.520	4137008.115	18.27
LOCATION	L0020108	VOLUME	588028.020	4137008.115	18.34
LOCATION	L0020109	VOLUME	588029.127	4137002.477	18.32
LOCATION	L0020110	VOLUME	588026.880	4136994.279	18.28
LOCATION	L0020111	VOLUME	588024.632	4136986.082	18.24
LOCATION	L0020112	VOLUME	588022.384	4136977.884	18.23
LOCATION	L0020113	VOLUME	588020.137	4136969.687	18.22

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   LOCATION L0020114     VOLUME   588017.889 4136961.489 18.20
   LOCATION L0020115     VOLUME   588015.641 4136953.292 18.19
** End of LINE VOLUME Source ID = SLINE1
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC South Site On-Site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.00113
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 27
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** 587962.739, 4136629.428, 20.41, 3.11, 3.95
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** 587910.279, 4136717.283, 20.10, 3.11, 3.95
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   LOCATION L0020116     VOLUME   587615.458 4136711.252 21.22
   LOCATION L0020117     VOLUME   587623.731 4136709.302 21.06
   LOCATION L0020118     VOLUME   587632.005 4136707.353 20.92
   LOCATION L0020119     VOLUME   587640.278 4136705.404 20.82
   LOCATION L0020120     VOLUME   587648.551 4136703.454 20.80
   LOCATION L0020121     VOLUME   587656.825 4136701.505 20.84
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LOCATION	L0020122	VOLUME	587665.098	4136699.556 20.91
LOCATION	L0020123	VOLUME	587673.372	4136697.606 20.92
LOCATION	L0020124	VOLUME	587681.645	4136695.657 20.90
LOCATION	L0020125	VOLUME	587689.919	4136693.708 20.89
LOCATION	L0020126	VOLUME	587698.192	4136691.758 20.86
LOCATION	L0020127	VOLUME	587706.466	4136689.809 20.80
LOCATION	L0020128	VOLUME	587714.739	4136687.860 20.71
LOCATION	L0020129	VOLUME	587723.013	4136685.910 20.68
LOCATION	L0020130	VOLUME	587731.286	4136683.961 20.67
LOCATION	L0020131	VOLUME	587739.560	4136682.012 20.64
LOCATION	L0020132	VOLUME	587747.833	4136680.062 20.65
LOCATION	L0020133	VOLUME	587756.106	4136678.113 20.67
LOCATION	L0020134	VOLUME	587764.380	4136676.164 20.67
LOCATION	L0020135	VOLUME	587772.653	4136674.214 20.67
LOCATION	L0020136	VOLUME	587780.927	4136672.265 20.68
LOCATION	L0020137	VOLUME	587789.200	4136670.316 20.73
LOCATION	L0020138	VOLUME	587797.474	4136668.366 20.68
LOCATION	L0020139	VOLUME	587805.747	4136666.417 20.62
LOCATION	L0020140	VOLUME	587814.021	4136664.468 20.58
LOCATION	L0020141	VOLUME	587822.294	4136662.518 20.49
LOCATION	L0020142	VOLUME	587830.568	4136660.569 20.37
LOCATION	L0020143	VOLUME	587838.841	4136658.620 20.23
LOCATION	L0020144	VOLUME	587847.115	4136656.671 20.24
LOCATION	L0020145	VOLUME	587855.388	4136654.721 20.24
LOCATION	L0020146	VOLUME	587863.661	4136652.772 20.19
LOCATION	L0020147	VOLUME	587871.935	4136650.823 20.18
LOCATION	L0020148	VOLUME	587880.208	4136648.873 20.19
LOCATION	L0020149	VOLUME	587888.482	4136646.924 20.20
LOCATION	L0020150	VOLUME	587896.755	4136644.975 20.15
LOCATION	L0020151	VOLUME	587905.029	4136643.025 20.08
LOCATION	L0020152	VOLUME	587913.302	4136641.076 20.12
LOCATION	L0020153	VOLUME	587921.576	4136639.127 20.18
LOCATION	L0020154	VOLUME	587929.849	4136637.177 20.25
LOCATION	L0020155	VOLUME	587938.123	4136635.228 20.32
LOCATION	L0020156	VOLUME	587946.396	4136633.279 20.40
LOCATION	L0020157	VOLUME	587954.670	4136631.329 20.43
LOCATION	L0020158	VOLUME	587962.778	4136629.634 20.43
LOCATION	L0020159	VOLUME	587964.381	4136637.981 20.32
LOCATION	L0020160	VOLUME	587965.984	4136646.329 20.24
LOCATION	L0020161	VOLUME	587967.587	4136654.677 20.21
LOCATION	L0020162	VOLUME	587969.189	4136663.024 20.18
LOCATION	L0020163	VOLUME	587970.792	4136671.372 20.15
LOCATION	L0020164	VOLUME	587972.395	4136679.719 20.13
LOCATION	L0020165	VOLUME	587973.998	4136688.067 20.12
LOCATION	L0020166	VOLUME	587975.600	4136696.414 20.11
LOCATION	L0020167	VOLUME	587977.203	4136704.762 20.10
LOCATION	L0020168	VOLUME	587978.806	4136713.109 20.08
LOCATION	L0020169	VOLUME	587980.408	4136721.457 20.05

LOCATION	L0020170	VOLUME	587982.011	4136729.804 20.02
LOCATION	L0020171	VOLUME	587983.614	4136738.152 20.01
LOCATION	L0020172	VOLUME	587985.217	4136746.499 20.11
LOCATION	L0020173	VOLUME	587986.819	4136754.847 20.23
LOCATION	L0020174	VOLUME	587988.422	4136763.194 20.31
LOCATION	L0020175	VOLUME	587990.025	4136771.542 20.19
LOCATION	L0020176	VOLUME	587991.628	4136779.889 19.92
LOCATION	L0020177	VOLUME	587992.267	4136787.486 19.71
LOCATION	L0020178	VOLUME	587983.781	4136787.971 19.85
LOCATION	L0020179	VOLUME	587975.294	4136788.456 19.93
LOCATION	L0020180	VOLUME	587966.808	4136788.941 20.01
LOCATION	L0020181	VOLUME	587958.322	4136789.426 20.05
LOCATION	L0020182	VOLUME	587949.836	4136789.911 20.01
LOCATION	L0020183	VOLUME	587941.350	4136790.396 19.98
LOCATION	L0020184	VOLUME	587932.864	4136790.881 19.92
LOCATION	L0020185	VOLUME	587924.377	4136791.365 19.83
LOCATION	L0020186	VOLUME	587915.891	4136791.850 19.74
LOCATION	L0020187	VOLUME	587907.405	4136792.335 19.66
LOCATION	L0020188	VOLUME	587898.919	4136792.820 19.56
LOCATION	L0020189	VOLUME	587890.433	4136793.305 19.47
LOCATION	L0020190	VOLUME	587881.947	4136793.790 19.49
LOCATION	L0020191	VOLUME	587873.461	4136794.275 19.57
LOCATION	L0020192	VOLUME	587864.974	4136794.760 19.65
LOCATION	L0020193	VOLUME	587856.599	4136795.967 19.80
LOCATION	L0020194	VOLUME	587848.355	4136798.039 19.96
LOCATION	L0020195	VOLUME	587840.112	4136800.112 20.09
LOCATION	L0020196	VOLUME	587831.868	4136802.184 20.13
LOCATION	L0020197	VOLUME	587823.625	4136804.257 20.14
LOCATION	L0020198	VOLUME	587815.381	4136806.329 20.13
LOCATION	L0020199	VOLUME	587807.138	4136808.402 20.08
LOCATION	L0020200	VOLUME	587798.894	4136810.474 20.03
LOCATION	L0020201	VOLUME	587790.651	4136812.547 19.99
LOCATION	L0020202	VOLUME	587782.407	4136814.619 20.03
LOCATION	L0020203	VOLUME	587774.164	4136816.692 20.12
LOCATION	L0020204	VOLUME	587765.921	4136818.764 20.23
LOCATION	L0020205	VOLUME	587757.677	4136820.837 20.26
LOCATION	L0020206	VOLUME	587749.434	4136822.909 20.26
LOCATION	L0020207	VOLUME	587741.190	4136824.982 20.27
LOCATION	L0020208	VOLUME	587732.947	4136827.054 20.28
LOCATION	L0020209	VOLUME	587724.703	4136829.127 20.29
LOCATION	L0020210	VOLUME	587716.460	4136831.199 20.29
LOCATION	L0020211	VOLUME	587708.216	4136833.272 20.20
LOCATION	L0020212	VOLUME	587699.973	4136835.345 20.11
LOCATION	L0020213	VOLUME	587691.729	4136837.417 20.02
LOCATION	L0020214	VOLUME	587683.486	4136839.490 20.23
LOCATION	L0020215	VOLUME	587675.242	4136841.562 20.45
LOCATION	L0020216	VOLUME	587666.999	4136843.635 20.63
LOCATION	L0020217	VOLUME	587658.755	4136845.707 20.65

LOCATION	L0020218	VOLUME	587650.512	4136847.780 20.66
LOCATION	L0020219	VOLUME	587642.269	4136849.852 20.69
LOCATION	L0020220	VOLUME	587636.052	4136848.676 20.74
LOCATION	L0020221	VOLUME	587634.293	4136840.360 20.89
LOCATION	L0020222	VOLUME	587632.533	4136832.045 21.04
LOCATION	L0020223	VOLUME	587630.773	4136823.729 21.14
LOCATION	L0020224	VOLUME	587629.013	4136815.413 21.16
LOCATION	L0020225	VOLUME	587627.253	4136807.097 21.18
LOCATION	L0020226	VOLUME	587625.493	4136798.781 21.21
LOCATION	L0020227	VOLUME	587623.733	4136790.466 21.25
LOCATION	L0020228	VOLUME	587621.973	4136782.150 21.29
LOCATION	L0020229	VOLUME	587620.213	4136773.834 21.31
LOCATION	L0020230	VOLUME	587618.453	4136765.518 21.31
LOCATION	L0020231	VOLUME	587616.693	4136757.202 21.35
LOCATION	L0020232	VOLUME	587614.933	4136748.887 21.40
LOCATION	L0020233	VOLUME	587613.173	4136740.571 21.45
LOCATION	L0020234	VOLUME	587611.413	4136732.255 21.50
LOCATION	L0020235	VOLUME	587619.141	4136729.887 21.39
LOCATION	L0020236	VOLUME	587627.392	4136727.847 21.06
LOCATION	L0020237	VOLUME	587635.644	4136725.808 20.76
LOCATION	L0020238	VOLUME	587643.896	4136723.768 20.54
LOCATION	L0020239	VOLUME	587652.147	4136721.729 20.55
LOCATION	L0020240	VOLUME	587660.399	4136719.689 20.57
LOCATION	L0020241	VOLUME	587668.651	4136717.649 20.58
LOCATION	L0020242	VOLUME	587676.902	4136715.610 20.54
LOCATION	L0020243	VOLUME	587685.154	4136713.570 20.48
LOCATION	L0020244	VOLUME	587693.406	4136711.531 20.41
LOCATION	L0020245	VOLUME	587701.657	4136709.491 20.38
LOCATION	L0020246	VOLUME	587709.909	4136707.452 20.33
LOCATION	L0020247	VOLUME	587718.161	4136705.412 20.27
LOCATION	L0020248	VOLUME	587726.412	4136703.372 20.27
LOCATION	L0020249	VOLUME	587734.664	4136701.333 20.32
LOCATION	L0020250	VOLUME	587742.916	4136699.293 20.36
LOCATION	L0020251	VOLUME	587751.168	4136697.254 20.43
LOCATION	L0020252	VOLUME	587759.419	4136695.214 20.49
LOCATION	L0020253	VOLUME	587767.671	4136693.175 20.53
LOCATION	L0020254	VOLUME	587775.923	4136691.135 20.55
LOCATION	L0020255	VOLUME	587784.174	4136689.096 20.56
LOCATION	L0020256	VOLUME	587792.426	4136687.056 20.55
LOCATION	L0020257	VOLUME	587800.678	4136685.016 20.42
LOCATION	L0020258	VOLUME	587808.929	4136682.977 20.28
LOCATION	L0020259	VOLUME	587817.181	4136680.937 20.13
LOCATION	L0020260	VOLUME	587825.433	4136678.898 19.99
LOCATION	L0020261	VOLUME	587833.684	4136676.858 19.83
LOCATION	L0020262	VOLUME	587841.936	4136674.819 19.72
LOCATION	L0020263	VOLUME	587850.188	4136672.779 19.92
LOCATION	L0020264	VOLUME	587858.439	4136670.739 20.13
LOCATION	L0020265	VOLUME	587866.691	4136668.700 20.25

LOCATION	L0020266	VOLUME	587874.943	4136666.660	20.24
LOCATION	L0020267	VOLUME	587883.194	4136664.621	20.24
LOCATION	L0020268	VOLUME	587891.446	4136662.581	20.24
LOCATION	L0020269	VOLUME	587899.698	4136660.542	20.19
LOCATION	L0020270	VOLUME	587907.949	4136658.502	20.14
LOCATION	L0020271	VOLUME	587916.201	4136656.462	20.09
LOCATION	L0020272	VOLUME	587924.453	4136654.423	20.07
LOCATION	L0020273	VOLUME	587932.704	4136652.383	20.04
LOCATION	L0020274	VOLUME	587940.956	4136650.344	20.04
LOCATION	L0020275	VOLUME	587946.940	4136651.943	20.10
LOCATION	L0020276	VOLUME	587948.744	4136660.249	20.15
LOCATION	L0020277	VOLUME	587950.548	4136668.556	20.19
LOCATION	L0020278	VOLUME	587952.352	4136676.862	20.22
LOCATION	L0020279	VOLUME	587954.156	4136685.168	20.23
LOCATION	L0020280	VOLUME	587955.960	4136693.475	20.24
LOCATION	L0020281	VOLUME	587957.764	4136701.781	20.26
LOCATION	L0020282	VOLUME	587959.568	4136710.087	20.27
LOCATION	L0020283	VOLUME	587961.371	4136718.394	20.28
LOCATION	L0020284	VOLUME	587963.175	4136726.700	20.27
LOCATION	L0020285	VOLUME	587964.979	4136735.007	20.25
LOCATION	L0020286	VOLUME	587966.783	4136743.313	20.24
LOCATION	L0020287	VOLUME	587968.587	4136751.619	20.25
LOCATION	L0020288	VOLUME	587970.391	4136759.926	20.29
LOCATION	L0020289	VOLUME	587972.195	4136768.232	20.32
LOCATION	L0020290	VOLUME	587971.061	4136774.315	20.21
LOCATION	L0020291	VOLUME	587962.577	4136774.833	20.20
LOCATION	L0020292	VOLUME	587954.093	4136775.352	20.14
LOCATION	L0020293	VOLUME	587945.609	4136775.870	20.07
LOCATION	L0020294	VOLUME	587937.125	4136776.389	20.00
LOCATION	L0020295	VOLUME	587928.640	4136776.907	19.87
LOCATION	L0020296	VOLUME	587920.156	4136777.426	19.75
LOCATION	L0020297	VOLUME	587911.672	4136777.944	19.65
LOCATION	L0020298	VOLUME	587903.188	4136778.463	19.64
LOCATION	L0020299	VOLUME	587894.704	4136778.981	19.62
LOCATION	L0020300	VOLUME	587886.220	4136779.500	19.62
LOCATION	L0020301	VOLUME	587877.735	4136780.018	19.67
LOCATION	L0020302	VOLUME	587869.251	4136780.537	19.73
LOCATION	L0020303	VOLUME	587860.767	4136781.055	19.83
LOCATION	L0020304	VOLUME	587852.486	4136782.905	19.99
LOCATION	L0020305	VOLUME	587844.234	4136784.942	20.15
LOCATION	L0020306	VOLUME	587835.982	4136786.980	20.29
LOCATION	L0020307	VOLUME	587827.730	4136789.018	20.38
LOCATION	L0020308	VOLUME	587819.478	4136791.056	20.46
LOCATION	L0020309	VOLUME	587811.226	4136793.094	20.49
LOCATION	L0020310	VOLUME	587802.974	4136795.132	20.45
LOCATION	L0020311	VOLUME	587794.722	4136797.170	20.39
LOCATION	L0020312	VOLUME	587786.469	4136799.207	20.34
LOCATION	L0020313	VOLUME	587778.217	4136801.245	20.32

LOCATION	L0020314	VOLUME	587769.965	4136803.283	20.34
LOCATION	L0020315	VOLUME	587761.713	4136805.321	20.36
LOCATION	L0020316	VOLUME	587753.461	4136807.359	20.36
LOCATION	L0020317	VOLUME	587745.209	4136809.397	20.37
LOCATION	L0020318	VOLUME	587736.957	4136811.435	20.38
LOCATION	L0020319	VOLUME	587728.705	4136813.473	20.39
LOCATION	L0020320	VOLUME	587720.453	4136815.510	20.40
LOCATION	L0020321	VOLUME	587712.201	4136817.548	20.37
LOCATION	L0020322	VOLUME	587703.949	4136819.586	20.28
LOCATION	L0020323	VOLUME	587695.696	4136821.624	20.19
LOCATION	L0020324	VOLUME	587687.444	4136823.662	20.28
LOCATION	L0020325	VOLUME	587679.192	4136825.700	20.63
LOCATION	L0020326	VOLUME	587670.940	4136827.738	20.93
LOCATION	L0020327	VOLUME	587662.688	4136829.775	21.06
LOCATION	L0020328	VOLUME	587654.436	4136831.813	21.03
LOCATION	L0020329	VOLUME	587650.584	4136826.172	21.18
LOCATION	L0020330	VOLUME	587648.169	4136818.022	21.18
LOCATION	L0020331	VOLUME	587645.754	4136809.873	21.18
LOCATION	L0020332	VOLUME	587643.340	4136801.723	21.20
LOCATION	L0020333	VOLUME	587640.925	4136793.573	21.23
LOCATION	L0020334	VOLUME	587638.510	4136785.423	21.33
LOCATION	L0020335	VOLUME	587636.095	4136777.273	21.41
LOCATION	L0020336	VOLUME	587633.681	4136769.124	21.47
LOCATION	L0020337	VOLUME	587631.266	4136760.974	21.44
LOCATION	L0020338	VOLUME	587628.851	4136752.824	21.30
LOCATION	L0020339	VOLUME	587629.461	4136746.391	21.20
LOCATION	L0020340	VOLUME	587637.696	4136744.285	20.98
LOCATION	L0020341	VOLUME	587645.931	4136742.180	20.73
LOCATION	L0020342	VOLUME	587654.166	4136740.074	20.54
LOCATION	L0020343	VOLUME	587662.401	4136737.969	20.42
LOCATION	L0020344	VOLUME	587670.636	4136735.863	20.38
LOCATION	L0020345	VOLUME	587678.872	4136733.758	20.39
LOCATION	L0020346	VOLUME	587687.107	4136731.653	20.40
LOCATION	L0020347	VOLUME	587695.342	4136729.547	20.42
LOCATION	L0020348	VOLUME	587703.577	4136727.442	20.46
LOCATION	L0020349	VOLUME	587711.812	4136725.336	20.48
LOCATION	L0020350	VOLUME	587720.047	4136723.231	20.49
LOCATION	L0020351	VOLUME	587728.282	4136721.125	20.51
LOCATION	L0020352	VOLUME	587736.517	4136719.020	20.53
LOCATION	L0020353	VOLUME	587744.752	4136716.914	20.54
LOCATION	L0020354	VOLUME	587752.987	4136714.809	20.57
LOCATION	L0020355	VOLUME	587761.223	4136712.703	20.59
LOCATION	L0020356	VOLUME	587769.458	4136710.598	20.59
LOCATION	L0020357	VOLUME	587777.693	4136708.492	20.57
LOCATION	L0020358	VOLUME	587785.928	4136706.387	20.54
LOCATION	L0020359	VOLUME	587794.163	4136704.281	20.46
LOCATION	L0020360	VOLUME	587802.398	4136702.176	20.37
LOCATION	L0020361	VOLUME	587810.633	4136700.070	20.28

LOCATION	L0020362	VOLUME	587818.868	4136697.965 20.19
LOCATION	L0020363	VOLUME	587827.103	4136695.860 20.11
LOCATION	L0020364	VOLUME	587835.339	4136693.754 20.01
LOCATION	L0020365	VOLUME	587843.574	4136691.649 19.97
LOCATION	L0020366	VOLUME	587851.809	4136689.543 20.03
LOCATION	L0020367	VOLUME	587860.044	4136687.438 20.12
LOCATION	L0020368	VOLUME	587868.279	4136685.332 20.21
LOCATION	L0020369	VOLUME	587876.514	4136683.227 20.25
LOCATION	L0020370	VOLUME	587884.749	4136681.121 20.27
LOCATION	L0020371	VOLUME	587892.984	4136679.016 20.27
LOCATION	L0020372	VOLUME	587901.219	4136676.910 20.25
LOCATION	L0020373	VOLUME	587909.455	4136674.805 20.22
LOCATION	L0020374	VOLUME	587917.690	4136672.699 20.20
LOCATION	L0020375	VOLUME	587925.925	4136670.594 20.18
LOCATION	L0020376	VOLUME	587933.792	4136669.110 20.16
LOCATION	L0020377	VOLUME	587935.906	4136677.343 20.20
LOCATION	L0020378	VOLUME	587938.020	4136685.576 20.19
LOCATION	L0020379	VOLUME	587940.133	4136693.809 20.20
LOCATION	L0020380	VOLUME	587942.247	4136702.042 20.20
LOCATION	L0020381	VOLUME	587944.361	4136710.275 20.23
LOCATION	L0020382	VOLUME	587946.475	4136718.508 20.26
LOCATION	L0020383	VOLUME	587948.589	4136726.741 20.28
LOCATION	L0020384	VOLUME	587950.703	4136734.974 20.30
LOCATION	L0020385	VOLUME	587952.817	4136743.206 20.27
LOCATION	L0020386	VOLUME	587954.931	4136751.439 20.25
LOCATION	L0020387	VOLUME	587957.044	4136759.672 20.24
LOCATION	L0020388	VOLUME	587951.757	4136762.466 20.19
LOCATION	L0020389	VOLUME	587943.268	4136762.907 20.12
LOCATION	L0020390	VOLUME	587934.780	4136763.348 20.02
LOCATION	L0020391	VOLUME	587926.291	4136763.789 19.86
LOCATION	L0020392	VOLUME	587917.802	4136764.230 19.71
LOCATION	L0020393	VOLUME	587909.314	4136764.671 19.64
LOCATION	L0020394	VOLUME	587900.825	4136765.112 19.69
LOCATION	L0020395	VOLUME	587892.337	4136765.552 19.75
LOCATION	L0020396	VOLUME	587883.848	4136765.993 19.79
LOCATION	L0020397	VOLUME	587875.360	4136766.434 19.82
LOCATION	L0020398	VOLUME	587866.871	4136766.875 19.86
LOCATION	L0020399	VOLUME	587858.436	4136767.683 19.98
LOCATION	L0020400	VOLUME	587850.181	4136769.705 20.14
LOCATION	L0020401	VOLUME	587841.925	4136771.728 20.30
LOCATION	L0020402	VOLUME	587833.669	4136773.751 20.43
LOCATION	L0020403	VOLUME	587825.413	4136775.774 20.54
LOCATION	L0020404	VOLUME	587817.158	4136777.797 20.65
LOCATION	L0020405	VOLUME	587808.902	4136779.820 20.66
LOCATION	L0020406	VOLUME	587800.646	4136781.843 20.63
LOCATION	L0020407	VOLUME	587792.390	4136783.866 20.59
LOCATION	L0020408	VOLUME	587784.135	4136785.889 20.55
LOCATION	L0020409	VOLUME	587775.879	4136787.912 20.52

LOCATION	L0020410	VOLUME	587767.623	4136789.935 20.49
LOCATION	L0020411	VOLUME	587759.367	4136791.958 20.48
LOCATION	L0020412	VOLUME	587751.111	4136793.981 20.47
LOCATION	L0020413	VOLUME	587742.856	4136796.004 20.47
LOCATION	L0020414	VOLUME	587734.600	4136798.027 20.47
LOCATION	L0020415	VOLUME	587726.344	4136800.049 20.46
LOCATION	L0020416	VOLUME	587718.088	4136802.072 20.46
LOCATION	L0020417	VOLUME	587709.833	4136804.095 20.40
LOCATION	L0020418	VOLUME	587701.577	4136806.118 20.31
LOCATION	L0020419	VOLUME	587693.321	4136808.141 20.22
LOCATION	L0020420	VOLUME	587685.065	4136810.164 20.40
LOCATION	L0020421	VOLUME	587676.810	4136812.187 20.69
LOCATION	L0020422	VOLUME	587669.186	4136813.087 20.97
LOCATION	L0020423	VOLUME	587666.630	4136804.980 20.99
LOCATION	L0020424	VOLUME	587664.075	4136796.873 20.95
LOCATION	L0020425	VOLUME	587661.520	4136788.766 20.91
LOCATION	L0020426	VOLUME	587658.964	4136780.660 20.90
LOCATION	L0020427	VOLUME	587656.409	4136772.553 20.95
LOCATION	L0020428	VOLUME	587653.853	4136764.446 21.06
LOCATION	L0020429	VOLUME	587651.298	4136756.339 21.00
LOCATION	L0020430	VOLUME	587658.873	4136753.895 20.67
LOCATION	L0020431	VOLUME	587667.117	4136751.825 20.37
LOCATION	L0020432	VOLUME	587675.361	4136749.754 20.43
LOCATION	L0020433	VOLUME	587683.605	4136747.684 20.48
LOCATION	L0020434	VOLUME	587691.849	4136745.613 20.52
LOCATION	L0020435	VOLUME	587700.093	4136743.543 20.53
LOCATION	L0020436	VOLUME	587708.337	4136741.472 20.56
LOCATION	L0020437	VOLUME	587716.581	4136739.402 20.60
LOCATION	L0020438	VOLUME	587724.825	4136737.331 20.66
LOCATION	L0020439	VOLUME	587733.069	4136735.261 20.73
LOCATION	L0020440	VOLUME	587741.313	4136733.190 20.78
LOCATION	L0020441	VOLUME	587749.557	4136731.120 20.82
LOCATION	L0020442	VOLUME	587757.801	4136729.049 20.86
LOCATION	L0020443	VOLUME	587766.045	4136726.979 20.90
LOCATION	L0020444	VOLUME	587774.289	4136724.908 20.89
LOCATION	L0020445	VOLUME	587782.533	4136722.838 20.88
LOCATION	L0020446	VOLUME	587790.777	4136720.767 20.86
LOCATION	L0020447	VOLUME	587799.021	4136718.697 20.71
LOCATION	L0020448	VOLUME	587807.265	4136716.626 20.56
LOCATION	L0020449	VOLUME	587815.509	4136714.556 20.43
LOCATION	L0020450	VOLUME	587823.753	4136712.485 20.33
LOCATION	L0020451	VOLUME	587831.997	4136710.415 20.25
LOCATION	L0020452	VOLUME	587840.241	4136708.344 20.17
LOCATION	L0020453	VOLUME	587848.485	4136706.274 20.12
LOCATION	L0020454	VOLUME	587856.729	4136704.203 20.09
LOCATION	L0020455	VOLUME	587864.973	4136702.133 20.10
LOCATION	L0020456	VOLUME	587873.217	4136700.062 20.18
LOCATION	L0020457	VOLUME	587881.461	4136697.992 20.25

LOCATION	L0020458	VOLUME	587889.705	4136695.921 20.30
LOCATION	L0020459	VOLUME	587897.949	4136693.851 20.27
LOCATION	L0020460	VOLUME	587906.193	4136691.780 20.24
LOCATION	L0020461	VOLUME	587914.437	4136689.710 20.21
LOCATION	L0020462	VOLUME	587922.681	4136687.639 20.20
LOCATION	L0020463	VOLUME	587926.882	4136692.406 20.20
LOCATION	L0020464	VOLUME	587929.042	4136700.627 20.20
LOCATION	L0020465	VOLUME	587931.201	4136708.848 20.20
LOCATION	L0020466	VOLUME	587933.360	4136717.069 20.21
LOCATION	L0020467	VOLUME	587935.519	4136725.290 20.25
LOCATION	L0020468	VOLUME	587937.678	4136733.512 20.31
LOCATION	L0020469	VOLUME	587939.837	4136741.733 20.27
LOCATION	L0020470	VOLUME	587941.431	4136749.547 20.21
LOCATION	L0020471	VOLUME	587932.949	4136750.108 20.11
LOCATION	L0020472	VOLUME	587924.468	4136750.669 19.96
LOCATION	L0020473	VOLUME	587915.986	4136751.231 19.81
LOCATION	L0020474	VOLUME	587907.505	4136751.792 19.79
LOCATION	L0020475	VOLUME	587899.023	4136752.353 19.83
LOCATION	L0020476	VOLUME	587890.542	4136752.914 19.87
LOCATION	L0020477	VOLUME	587882.060	4136753.476 19.88
LOCATION	L0020478	VOLUME	587873.579	4136754.037 19.89
LOCATION	L0020479	VOLUME	587865.098	4136754.598 19.90
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LOCATION	L0020481	VOLUME	587848.352	4136757.105 20.23
LOCATION	L0020482	VOLUME	587840.108	4136759.173 20.40
LOCATION	L0020483	VOLUME	587831.863	4136761.242 20.54
LOCATION	L0020484	VOLUME	587823.619	4136763.310 20.68
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LOCATION	L0020487	VOLUME	587798.885	4136769.516 20.80
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LOCATION	L0020490	VOLUME	587774.152	4136775.721 20.68
LOCATION	L0020491	VOLUME	587765.908	4136777.790 20.64
LOCATION	L0020492	VOLUME	587757.663	4136779.858 20.63
LOCATION	L0020493	VOLUME	587749.419	4136781.927 20.63
LOCATION	L0020494	VOLUME	587741.174	4136783.995 20.62
LOCATION	L0020495	VOLUME	587732.930	4136786.064 20.58
LOCATION	L0020496	VOLUME	587724.685	4136788.132 20.54
LOCATION	L0020497	VOLUME	587716.441	4136790.201 20.52
LOCATION	L0020498	VOLUME	587708.196	4136792.269 20.44
LOCATION	L0020499	VOLUME	587699.952	4136794.338 20.35
LOCATION	L0020500	VOLUME	587691.707	4136796.406 20.25
LOCATION	L0020501	VOLUME	587683.463	4136798.475 20.46
LOCATION	L0020502	VOLUME	587678.064	4136795.214 20.61
LOCATION	L0020503	VOLUME	587675.195	4136787.212 20.63
LOCATION	L0020504	VOLUME	587672.327	4136779.211 20.60
LOCATION	L0020505	VOLUME	587669.459	4136771.210 20.51

LOCATION	L0020506	VOLUME	587670.399	4136765.245 20.43
LOCATION	L0020507	VOLUME	587678.647	4136763.189 20.52
LOCATION	L0020508	VOLUME	587686.894	4136761.132 20.61
LOCATION	L0020509	VOLUME	587695.142	4136759.075 20.65
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LOCATION	L0020515	VOLUME	587744.626	4136746.735 20.84
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LOCATION	L0020532	VOLUME	587884.833	4136711.772 20.22
LOCATION	L0020533	VOLUME	587893.080	4136709.715 20.25
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LOCATION	L0020535	VOLUME	587909.575	4136705.602 20.22
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LOCATION	L0020539	VOLUME	587925.258	4136727.244 20.14
LOCATION	L0020540	VOLUME	587927.575	4136735.422 20.16
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LOCATION	L0020545	VOLUME	587892.851	4136741.594 19.96
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LOCATION	L0020548	VOLUME	587867.352	4136741.799 19.94
LOCATION	L0020549	VOLUME	587858.852	4136741.868 20.05
LOCATION	L0020550	VOLUME	587850.371	4136742.068 20.24
LOCATION	L0020551	VOLUME	587842.174	4136744.319 20.42
LOCATION	L0020552	VOLUME	587833.977	4136746.569 20.55
LOCATION	L0020553	VOLUME	587825.781	4136748.819 20.66

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   LOCATION L0020560     VOLUME   587768.403 4136764.569 20.80
   LOCATION L0020561     VOLUME   587760.206 4136766.820 20.78
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   LOCATION L0020578     VOLUME   587743.970 4136760.382 20.85
   LOCATION L0020579     VOLUME   587752.198 4136758.250 20.85
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   LOCATION L0020581     VOLUME   587768.654 4136753.985 20.89
   LOCATION L0020582     VOLUME   587776.882 4136751.853 20.94
   LOCATION L0020583     VOLUME   587785.111 4136749.721 20.99
   LOCATION L0020584     VOLUME   587793.339 4136747.588 21.01
   LOCATION L0020585     VOLUME   587801.567 4136745.456 20.94
   LOCATION L0020586     VOLUME   587809.795 4136743.323 20.87
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   LOCATION L0020589     VOLUME   587834.480 4136736.926 20.57
   LOCATION L0020590     VOLUME   587842.708 4136734.794 20.44
   LOCATION L0020591     VOLUME   587850.936 4136732.662 20.24
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   LOCATION L0020593     VOLUME   587867.392 4136728.397 19.99
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   LOCATION L0020595     VOLUME   587883.849 4136724.132 20.11
   LOCATION L0020596     VOLUME   587892.077 4136722.000 20.14
   LOCATION L0020597     VOLUME   587900.305 4136719.867 20.13
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** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
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** ------------------------------------------------------------------------
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** AERMOD Receptor Pathway
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RE STARTING
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RE FINISHED
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**************************************
** AERMOD Meteorology Pathway
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Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
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ME FINISHED
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** AERMOD Output Pathway
**************************************
**
**
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   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "INTUITIVE TIER 3 1.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "INTUITIVE TIER 3 1.AD\24H1GALL.PLT" 32
   PLOTFILE 24 ALL 8TH "INTUITIVE TIER 3 1.AD\24H8GALL.PLT" 33
   PLOTFILE ANNUAL ALL "INTUITIVE TIER 3 1.AD\AN00GALL.PLT" 34
   SUMMFILE "Intuitive Tier 3 1.sum"
OU FINISHED

 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        20:43:19

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F
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 **Model Uses URBAN Dispersion Algorithm for the SBL for   935 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   1938000.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:    935 Source(s);       1 Source Group(s); and     238
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    935 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)
```

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 11.90 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;
Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 4.0 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: Intuitive Tier 3 1.err

**File for Summary of Results: Intuitive Tier 3 1.sum

*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0019664	0	0.23890E-05	587891.9	4136838.4	19.3	0.00	3.95	2.89	YES	
L0019665	0	0.23890E-05	587893.4	4136846.7	19.4	0.00	3.95	2.89	YES	
L0019666	0	0.23890E-05	587895.0	4136855.1	19.4	0.00	3.95			

2.89 YES							
L0019667	0	0.23890E-05	587896.5	4136863.4	19.4	0.00	3.95
2.89 YES							
L0019668	0	0.23890E-05	587898.1	4136871.8	19.5	0.00	3.95
2.89 YES							
L0019669	0	0.23890E-05	587899.6	4136880.1	19.7	0.00	3.95
2.89 YES							
L0019670	0	0.23890E-05	587901.2	4136888.5	20.0	0.00	3.95
2.89 YES							
L0019671	0	0.23890E-05	587902.7	4136896.9	20.1	0.00	3.95
2.89 YES							
L0019672	0	0.23890E-05	587904.3	4136905.2	20.1	0.00	3.95
2.89 YES							
L0019673	0	0.23890E-05	587905.9	4136913.6	20.1	0.00	3.95
2.89 YES							
L0019674	0	0.23890E-05	587907.4	4136921.9	20.1	0.00	3.95
2.89 YES							
L0019675	0	0.23890E-05	587909.0	4136930.3	19.9	0.00	3.95
2.89 YES							
L0019676	0	0.23890E-05	587910.5	4136938.6	19.6	0.00	3.95
2.89 YES							
L0019677	0	0.23890E-05	587912.1	4136947.0	19.4	0.00	3.95
2.89 YES							
L0019678	0	0.23890E-05	587913.6	4136955.4	19.3	0.00	3.95
2.89 YES							
L0019679	0	0.23890E-05	587915.2	4136963.7	19.3	0.00	3.95
2.89 YES							
L0019680	0	0.23890E-05	587916.7	4136972.1	19.3	0.00	3.95
2.89 YES							
L0019681	0	0.23890E-05	587918.3	4136980.4	19.4	0.00	3.95
2.89 YES							
L0019682	0	0.23890E-05	587919.8	4136988.8	19.5	0.00	3.95
2.89 YES							
L0019683	0	0.23890E-05	587921.4	4136997.1	19.5	0.00	3.95
2.89 YES							
L0019684	0	0.23890E-05	587922.9	4137005.5	19.6	0.00	3.95
2.89 YES							
L0019685	0	0.23890E-05	587924.5	4137013.8	19.6	0.00	3.95
2.89 YES							
L0019686	0	0.23890E-05	587926.1	4137022.2	19.8	0.00	3.95
2.89 YES							
L0019687	0	0.23890E-05	587927.6	4137030.6	19.8	0.00	3.95
2.89 YES							
L0019688	0	0.23890E-05	587929.2	4137038.9	19.9	0.00	3.95
2.89 YES							
L0019689	0	0.23890E-05	587930.7	4137047.3	19.9	0.00	3.95
2.89 YES							
L0019690	0	0.23890E-05	587932.3	4137055.6	19.7	0.00	3.95

```
2.89     YES
 L0019691         0   0.23890E-05  587933.8 4137064.0    19.5     0.00     3.95
2.89     YES
 L0019692         0   0.23890E-05  587935.4 4137072.3    19.2     0.00     3.95
2.89     YES
 L0019693         0   0.23890E-05  587937.5 4137080.1    18.9     0.00     3.95
2.89     YES
 L0019694         0   0.23890E-05  587945.9 4137081.1    19.2     0.00     3.95
2.89     YES
 L0019695         0   0.23890E-05  587954.3 4137082.1    19.4     0.00     3.95
2.89     YES
 L0019696         0   0.23890E-05  587962.8 4137083.1    19.5     0.00     3.95
2.89     YES
 L0019697         0   0.23890E-05  587971.2 4137084.0    19.3     0.00     3.95
2.89     YES
 L0019698         0   0.23890E-05  587979.7 4137085.0    19.2     0.00     3.95
2.89     YES
 L0019699         0   0.23890E-05  587988.1 4137086.0    19.1     0.00     3.95
2.89     YES
 L0019700         0   0.23890E-05  587996.6 4137087.0    19.1     0.00     3.95
2.89     YES
 L0019701         0   0.23890E-05  588005.0 4137087.9    19.1     0.00     3.95
2.89     YES
 L0019702         0   0.23890E-05  588013.5 4137088.9    19.0     0.00     3.95
2.89     YES
 L0019703         0   0.23890E-05  588021.9 4137089.9    18.8     0.00     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        20:43:19

                                   PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X         Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0019704         0   0.23890E-05  588030.3 4137090.8    18.6     0.00     3.95
```

2.89 YES							
L0019705	0	0.23890E-05	588038.8	4137091.8	18.4	0.00	3.95
2.89 YES							
L0019706	0	0.23890E-05	588047.2	4137093.0	18.2	0.00	3.95
2.89 YES							
L0019707	0	0.23890E-05	588055.5	4137094.6	18.0	0.00	3.95
2.89 YES							
L0019708	0	0.23890E-05	588063.9	4137096.2	17.9	0.00	3.95
2.89 YES							
L0019709	0	0.23890E-05	588072.2	4137097.8	17.9	0.00	3.95
2.89 YES							
L0019710	0	0.23890E-05	588080.6	4137099.5	17.9	0.00	3.95
2.89 YES							
L0019711	0	0.23890E-05	588088.9	4137101.1	17.9	0.00	3.95
2.89 YES							
L0019712	0	0.23890E-05	588097.3	4137102.7	17.9	0.00	3.95
2.89 YES							
L0019713	0	0.23890E-05	588105.6	4137104.3	17.9	0.00	3.95
2.89 YES							
L0019714	0	0.23890E-05	588114.0	4137105.9	18.1	0.00	3.95
2.89 YES							
L0019715	0	0.23890E-05	588122.3	4137107.5	18.4	0.00	3.95
2.89 YES							
L0019716	0	0.23890E-05	588130.6	4137109.1	18.6	0.00	3.95
2.89 YES							
L0019717	0	0.23890E-05	588135.4	4137106.8	18.4	0.00	3.95
2.89 YES							
L0019718	0	0.23890E-05	588134.7	4137098.4	18.4	0.00	3.95
2.89 YES							
L0019719	0	0.23890E-05	588133.9	4137089.9	18.4	0.00	3.95
2.89 YES							
L0019720	0	0.23890E-05	588133.1	4137081.4	18.4	0.00	3.95
2.89 YES							
L0019721	0	0.23890E-05	588132.3	4137073.0	18.5	0.00	3.95
2.89 YES							
L0019722	0	0.23890E-05	588131.5	4137064.5	18.8	0.00	3.95
2.89 YES							
L0019723	0	0.23890E-05	588130.7	4137056.0	19.1	0.00	3.95
2.89 YES							
L0019724	0	0.23890E-05	588130.0	4137047.6	19.3	0.00	3.95
2.89 YES							
L0019725	0	0.23890E-05	588129.2	4137039.1	19.1	0.00	3.95
2.89 YES							
L0019726	0	0.23890E-05	588128.4	4137030.7	18.8	0.00	3.95
2.89 YES							
L0019727	0	0.23890E-05	588127.6	4137022.2	18.6	0.00	3.95
2.89 YES							
L0019728	0	0.23890E-05	588126.8	4137013.7	18.4	0.00	3.95

```
2.89     YES
 L0019729         0   0.23890E-05  588126.0 4137005.3    18.4     0.00     3.95
2.89     YES
 L0019730         0   0.23890E-05  588125.3 4136996.8    18.3     0.00     3.95
2.89     YES
 L0019731         0   0.23890E-05  588124.5 4136988.3    18.3     0.00     3.95
2.89     YES
 L0019732         0   0.23890E-05  588123.7 4136979.9    18.4     0.00     3.95
2.89     YES
 L0019733         0   0.23890E-05  588122.9 4136971.4    18.5     0.00     3.95
2.89     YES
 L0019734         0   0.23890E-05  588122.1 4136962.9    18.7     0.00     3.95
2.89     YES
 L0019735         0   0.23890E-05  588121.4 4136954.5    18.9     0.00     3.95
2.89     YES
 L0019736         0   0.23890E-05  588120.6 4136946.0    19.0     0.00     3.95
2.89     YES
 L0019737         0   0.23890E-05  588119.8 4136937.6    19.0     0.00     3.95
2.89     YES
 L0019738         0   0.23890E-05  588119.0 4136929.1    19.0     0.00     3.95
2.89     YES
 L0019739         0   0.23890E-05  588118.2 4136920.6    19.1     0.00     3.95
2.89     YES
 L0019740         0   0.23890E-05  588117.4 4136912.2    19.0     0.00     3.95
2.89     YES
 L0019741         0   0.23890E-05  588116.7 4136903.7    19.0     0.00     3.95
2.89     YES
 L0019742         0   0.23890E-05  588115.9 4136895.2    18.9     0.00     3.95
2.89     YES
 L0019743         0   0.23890E-05  588115.1 4136886.8    19.0     0.00     3.95
2.89     YES
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                        *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
```

L0019744	0	0.23890E-05	588114.3	4136878.3	19.1	0.00	3.95	2.89 YES
L0019745	0	0.23890E-05	588113.5	4136869.8	19.2	0.00	3.95	2.89 YES
L0019746	0	0.23890E-05	588112.7	4136861.4	19.3	0.00	3.95	2.89 YES
L0019747	0	0.23890E-05	588112.0	4136852.9	19.3	0.00	3.95	2.89 YES
L0019748	0	0.23890E-05	588111.2	4136844.5	19.4	0.00	3.95	2.89 YES
L0019749	0	0.23890E-05	588110.4	4136836.0	19.4	0.00	3.95	2.89 YES
L0019750	0	0.23890E-05	588106.3	4136831.3	19.4	0.00	3.95	2.89 YES
L0019751	0	0.23890E-05	588097.8	4136831.6	19.3	0.00	3.95	2.89 YES
L0019752	0	0.23890E-05	588089.3	4136831.8	19.2	0.00	3.95	2.89 YES
L0019753	0	0.23890E-05	588080.8	4136832.1	19.2	0.00	3.95	2.89 YES
L0019754	0	0.23890E-05	588072.3	4136832.4	19.3	0.00	3.95	2.89 YES
L0019755	0	0.23890E-05	588063.8	4136832.7	19.4	0.00	3.95	2.89 YES
L0019756	0	0.23890E-05	588055.3	4136833.0	19.4	0.00	3.95	2.89 YES
L0019757	0	0.23890E-05	588046.9	4136833.3	19.2	0.00	3.95	2.89 YES
L0019758	0	0.23890E-05	588038.4	4136833.6	19.1	0.00	3.95	2.89 YES
L0019759	0	0.23890E-05	588029.9	4136833.9	19.2	0.00	3.95	2.89 YES
L0019760	0	0.23890E-05	588021.4	4136834.2	19.6	0.00	3.95	2.89 YES
L0019761	0	0.23890E-05	588012.9	4136834.4	19.9	0.00	3.95	2.89 YES
L0019762	0	0.23890E-05	588004.4	4136834.7	20.0	0.00	3.95	2.89 YES
L0019763	0	0.23890E-05	587995.9	4136835.0	19.9	0.00	3.95	2.89 YES
L0019764	0	0.23890E-05	587987.4	4136835.3	19.9	0.00	3.95	2.89 YES
L0019765	0	0.23890E-05	587978.9	4136835.6	19.8	0.00	3.95	2.89 YES
L0019766	0	0.23890E-05	587970.4	4136835.9	19.7	0.00	3.95	

```
2.89     YES
 L0019767         0   0.23890E-05  587961.9 4136836.2    19.6     0.00     3.95
2.89     YES
 L0019768         0   0.23890E-05  587953.4 4136836.5    19.4     0.00     3.95
2.89     YES
 L0019769         0   0.23890E-05  587944.9 4136836.8    19.4     0.00     3.95
2.89     YES
 L0019770         0   0.23890E-05  587936.4 4136837.0    19.3     0.00     3.95
2.89     YES
 L0019771         0   0.23890E-05  587927.9 4136837.3    19.3     0.00     3.95
2.89     YES
 L0019772         0   0.23890E-05  587919.4 4136837.6    19.3     0.00     3.95
2.89     YES
 L0019773         0   0.23890E-05  587910.9 4136837.9    19.3     0.00     3.95
2.89     YES
 L0019774         0   0.23890E-05  587910.4 4136844.8    19.3     0.00     3.95
2.89     YES
 L0019775         0   0.23890E-05  587911.8 4136853.2    19.3     0.00     3.95
2.89     YES
 L0019776         0   0.23890E-05  587913.1 4136861.6    19.4     0.00     3.95
2.89     YES
 L0019777         0   0.23890E-05  587914.5 4136869.9    19.7     0.00     3.95
2.89     YES
 L0019778         0   0.23890E-05  587915.9 4136878.3    20.0     0.00     3.95
2.89     YES
 L0019779         0   0.23890E-05  587917.2 4136886.7    20.2     0.00     3.95
2.89     YES
 L0019780         0   0.23890E-05  587918.6 4136895.1    20.1     0.00     3.95
2.89     YES
 L0019781         0   0.23890E-05  587919.9 4136903.5    19.9     0.00     3.95
2.89     YES
 L0019782         0   0.23890E-05  587921.3 4136911.9    19.6     0.00     3.95
2.89     YES
 L0019783         0   0.23890E-05  587922.6 4136920.3    19.4     0.00     3.95
2.89     YES
```


 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

	NUMBER	EMISSION RATE			BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE VARY BY
L0019784	0	0.23890E-05	587924.0	4136928.7	19.4	0.00	3.95	2.89 YES
L0019785	0	0.23890E-05	587925.3	4136937.1	19.7	0.00	3.95	2.89 YES
L0019786	0	0.23890E-05	587926.7	4136945.5	20.0	0.00	3.95	2.89 YES
L0019787	0	0.23890E-05	587928.1	4136953.9	20.4	0.00	3.95	2.89 YES
L0019788	0	0.23890E-05	587929.4	4136962.2	20.5	0.00	3.95	2.89 YES
L0019789	0	0.23890E-05	587930.8	4136970.6	20.6	0.00	3.95	2.89 YES
L0019790	0	0.23890E-05	587932.1	4136979.0	20.8	0.00	3.95	2.89 YES
L0019791	0	0.23890E-05	587933.5	4136987.4	20.8	0.00	3.95	2.89 YES
L0019792	0	0.23890E-05	587934.8	4136995.8	20.9	0.00	3.95	2.89 YES
L0019793	0	0.23890E-05	587936.2	4137004.2	20.6	0.00	3.95	2.89 YES
L0019794	0	0.23890E-05	587937.6	4137012.6	20.3	0.00	3.95	2.89 YES
L0019795	0	0.23890E-05	587938.9	4137021.0	20.1	0.00	3.95	2.89 YES
L0019796	0	0.23890E-05	587940.3	4137029.4	19.9	0.00	3.95	2.89 YES
L0019797	0	0.23890E-05	587941.6	4137037.8	19.7	0.00	3.95	2.89 YES
L0019798	0	0.23890E-05	587943.0	4137046.2	19.4	0.00	3.95	2.89 YES
L0019799	0	0.23890E-05	587944.3	4137054.5	19.4	0.00	3.95	2.89 YES
L0019800	0	0.23890E-05	587945.7	4137062.9	19.4	0.00	3.95	2.89 YES
L0019801	0	0.23890E-05	587945.6	4137071.4	19.5	0.00	3.95	2.89 YES
L0019802	0	0.23890E-05	587953.1	4137073.2	19.8	0.00	3.95	2.89 YES
L0019803	0	0.23890E-05	587961.6	4137074.1	20.1	0.00	3.95	2.89 YES
L0019804	0	0.23890E-05	587970.0	4137075.0	20.1	0.00	3.95	

```
2.89     YES
 L0019805         0   0.23890E-05  587978.5 4137076.0    20.0     0.00     3.95
2.89     YES
 L0019806         0   0.23890E-05  587986.9 4137076.9    19.9     0.00     3.95
2.89     YES
 L0019807         0   0.23890E-05  587995.4 4137077.8    19.9     0.00     3.95
2.89     YES
 L0019808         0   0.23890E-05  588003.8 4137078.7    20.0     0.00     3.95
2.89     YES
 L0019809         0   0.23890E-05  588012.3 4137079.6    19.9     0.00     3.95
2.89     YES
 L0019810         0   0.23890E-05  588020.7 4137080.5    19.5     0.00     3.95
2.89     YES
 L0019811         0   0.23890E-05  588029.2 4137081.4    19.2     0.00     3.95
2.89     YES
 L0019812         0   0.23890E-05  588037.6 4137082.3    18.9     0.00     3.95
2.89     YES
 L0019813         0   0.23890E-05  588046.1 4137083.2    18.7     0.00     3.95
2.89     YES
 L0019814         0   0.23890E-05  588054.5 4137084.1    18.4     0.00     3.95
2.89     YES
 L0019815         0   0.23890E-05  588063.0 4137085.0    18.3     0.00     3.95
2.89     YES
 L0019816         0   0.23890E-05  588071.4 4137085.9    18.4     0.00     3.95
2.89     YES
 L0019817         0   0.23890E-05  588079.9 4137086.8    18.4     0.00     3.95
2.89     YES
 L0019818         0   0.23890E-05  588088.3 4137087.8    18.3     0.00     3.95
2.89     YES
 L0019819         0   0.23890E-05  588096.8 4137088.7    18.1     0.00     3.95
2.89     YES
 L0019820         0   0.23890E-05  588105.2 4137089.6    18.0     0.00     3.95
2.89     YES
 L0019821         0   0.23890E-05  588113.7 4137090.5    18.2     0.00     3.95
2.89     YES
 L0019822         0   0.23890E-05  588121.8 4137091.1    18.3     0.00     3.95
2.89     YES
 L0019823         0   0.23890E-05  588121.0 4137082.6    18.3     0.00     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
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*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0019824	0	0.23890E-05	588120.1	4137074.2	18.3	0.00	3.95	2.89	YES
L0019825	0	0.23890E-05	588119.3	4137065.7	18.4	0.00	3.95	2.89	YES
L0019826	0	0.23890E-05	588118.4	4137057.3	18.4	0.00	3.95	2.89	YES
L0019827	0	0.23890E-05	588117.6	4137048.8	18.4	0.00	3.95	2.89	YES
L0019828	0	0.23890E-05	588116.7	4137040.4	18.3	0.00	3.95	2.89	YES
L0019829	0	0.23890E-05	588115.9	4137031.9	18.2	0.00	3.95	2.89	YES
L0019830	0	0.23890E-05	588115.0	4137023.4	18.2	0.00	3.95	2.89	YES
L0019831	0	0.23890E-05	588114.1	4137015.0	18.1	0.00	3.95	2.89	YES
L0019832	0	0.23890E-05	588113.3	4137006.5	18.1	0.00	3.95	2.89	YES
L0019833	0	0.23890E-05	588112.4	4136998.1	18.0	0.00	3.95	2.89	YES
L0019834	0	0.23890E-05	588111.6	4136989.6	17.9	0.00	3.95	2.89	YES
L0019835	0	0.23890E-05	588110.7	4136981.2	17.9	0.00	3.95	2.89	YES
L0019836	0	0.23890E-05	588109.9	4136972.7	18.2	0.00	3.95	2.89	YES
L0019837	0	0.23890E-05	588109.0	4136964.2	18.6	0.00	3.95	2.89	YES
L0019838	0	0.23890E-05	588108.2	4136955.8	19.0	0.00	3.95	2.89	YES
L0019839	0	0.23890E-05	588107.3	4136947.3	19.2	0.00	3.95	2.89	YES
L0019840	0	0.23890E-05	588106.4	4136938.9	19.2	0.00	3.95	2.89	YES
L0019841	0	0.23890E-05	588105.6	4136930.4	19.2	0.00	3.95	2.89	YES
L0019842	0	0.23890E-05	588104.7	4136922.0	19.2	0.00	3.95		

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2.89     YES
 L0019843         0   0.23890E-05  588103.9 4136913.5    19.1     0.00     3.95
2.89     YES
 L0019844         0   0.23890E-05  588103.0 4136905.0    19.0     0.00     3.95
2.89     YES
 L0019845         0   0.23890E-05  588102.2 4136896.6    19.0     0.00     3.95
2.89     YES
 L0019846         0   0.23890E-05  588101.3 4136888.1    19.0     0.00     3.95
2.89     YES
 L0019847         0   0.23890E-05  588100.5 4136879.7    19.2     0.00     3.95
2.89     YES
 L0019848         0   0.23890E-05  588099.6 4136871.2    19.3     0.00     3.95
2.89     YES
 L0019849         0   0.23890E-05  588098.8 4136862.8    19.4     0.00     3.95
2.89     YES
 L0019850         0   0.23890E-05  588095.5 4136857.1    19.5     0.00     3.95
2.89     YES
 L0019851         0   0.23890E-05  588087.0 4136857.3    19.6     0.00     3.95
2.89     YES
 L0019852         0   0.23890E-05  588078.5 4136857.6    19.6     0.00     3.95
2.89     YES
 L0019853         0   0.23890E-05  588070.0 4136857.9    19.5     0.00     3.95
2.89     YES
 L0019854         0   0.23890E-05  588061.5 4136858.2    19.5     0.00     3.95
2.89     YES
 L0019855         0   0.23890E-05  588053.0 4136858.5    19.2     0.00     3.95
2.89     YES
 L0019856         0   0.23890E-05  588044.5 4136858.8    18.8     0.00     3.95
2.89     YES
 L0019857         0   0.23890E-05  588036.0 4136859.0    18.5     0.00     3.95
2.89     YES
 L0019858         0   0.23890E-05  588027.5 4136859.3    18.5     0.00     3.95
2.89     YES
 L0019859         0   0.23890E-05  588019.0 4136859.6    18.5     0.00     3.95
2.89     YES
 L0019860         0   0.23890E-05  588010.5 4136859.9    18.6     0.00     3.95
2.89     YES
 L0019861         0   0.23890E-05  588002.0 4136860.2    18.6     0.00     3.95
2.89     YES
 L0019862         0   0.23890E-05  587993.5 4136860.5    18.6     0.00     3.95
2.89     YES
 L0019863         0   0.23890E-05  587985.0 4136860.7    18.7     0.00     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE
L0019864	0	0.23890E-05	587976.5	4136861.0	18.7	0.00	3.95	2.89	YES
L0019865	0	0.23890E-05	587968.1	4136861.3	18.7	0.00	3.95	2.89	YES
L0019866	0	0.23890E-05	587959.6	4136861.6	18.7	0.00	3.95	2.89	YES
L0019867	0	0.23890E-05	587951.1	4136861.9	18.6	0.00	3.95	2.89	YES
L0019868	0	0.23890E-05	587942.6	4136862.2	18.6	0.00	3.95	2.89	YES
L0019869	0	0.23890E-05	587934.1	4136862.4	18.7	0.00	3.95	2.89	YES
L0019870	0	0.23890E-05	587927.3	4136864.1	18.9	0.00	3.95	2.89	YES
L0019871	0	0.23890E-05	587928.5	4136872.6	19.0	0.00	3.95	2.89	YES
L0019872	0	0.23890E-05	587929.8	4136881.0	19.1	0.00	3.95	2.89	YES
L0019873	0	0.23890E-05	587931.0	4136889.4	19.1	0.00	3.95	2.89	YES
L0019874	0	0.23890E-05	587932.3	4136897.8	18.9	0.00	3.95	2.89	YES
L0019875	0	0.23890E-05	587933.5	4136906.2	18.7	0.00	3.95	2.89	YES
L0019876	0	0.23890E-05	587934.8	4136914.6	18.5	0.00	3.95	2.89	YES
L0019877	0	0.23890E-05	587936.0	4136923.0	18.5	0.00	3.95	2.89	YES
L0019878	0	0.23890E-05	587937.3	4136931.4	19.2	0.00	3.95	2.89	YES
L0019879	0	0.23890E-05	587938.5	4136939.8	19.8	0.00	3.95	2.89	YES
L0019880	0	0.23890E-05	587939.8	4136948.2	20.4	0.00	3.95		

2.89	YES						
L0019881	0	0.23890E-05	587941.0	4136956.6	20.5	0.00	3.95
2.89	YES						
L0019882	0	0.23890E-05	587942.3	4136965.0	20.4	0.00	3.95
2.89	YES						
L0019883	0	0.23890E-05	587943.5	4136973.4	20.2	0.00	3.95
2.89	YES						
L0019884	0	0.23890E-05	587944.8	4136981.8	20.0	0.00	3.95
2.89	YES						
L0019885	0	0.23890E-05	587946.0	4136990.3	19.7	0.00	3.95
2.89	YES						
L0019886	0	0.23890E-05	587947.3	4136998.7	19.4	0.00	3.95
2.89	YES						
L0019887	0	0.23890E-05	587948.6	4137007.1	19.1	0.00	3.95
2.89	YES						
L0019888	0	0.23890E-05	587949.8	4137015.5	18.8	0.00	3.95
2.89	YES						
L0019889	0	0.23890E-05	587951.1	4137023.9	18.7	0.00	3.95
2.89	YES						
L0019890	0	0.23890E-05	587952.3	4137032.3	18.5	0.00	3.95
2.89	YES						
L0019891	0	0.23890E-05	587953.6	4137040.7	18.3	0.00	3.95
2.89	YES						
L0019892	0	0.23890E-05	587954.8	4137049.1	18.4	0.00	3.95
2.89	YES						
L0019893	0	0.23890E-05	587956.1	4137057.5	18.9	0.00	3.95
2.89	YES						
L0019894	0	0.23890E-05	587957.3	4137065.9	19.4	0.00	3.95
2.89	YES						
L0019895	0	0.23890E-05	587964.8	4137067.5	19.5	0.00	3.95
2.89	YES						
L0019896	0	0.23890E-05	587973.3	4137068.0	19.5	0.00	3.95
2.89	YES						
L0019897	0	0.23890E-05	587981.8	4137068.6	19.5	0.00	3.95
2.89	YES						
L0019898	0	0.23890E-05	587990.3	4137069.1	19.6	0.00	3.95
2.89	YES						
L0019899	0	0.23890E-05	587998.8	4137069.6	19.8	0.00	3.95
2.89	YES						
L0019900	0	0.23890E-05	588007.2	4137070.1	19.9	0.00	3.95
2.89	YES						
L0019901	0	0.23890E-05	588015.7	4137070.6	19.7	0.00	3.95
2.89	YES						
L0019902	0	0.23890E-05	588024.2	4137071.2	19.5	0.00	3.95
2.89	YES						
L0019903	0	0.23890E-05	588032.7	4137071.7	19.2	0.00	3.95
2.89	YES						

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0019904	0	0.23890E-05	588041.2	4137072.2	19.0	0.00	3.95	2.89	YES
L0019905	0	0.23890E-05	588049.7	4137072.7	18.8	0.00	3.95	2.89	YES
L0019906	0	0.23890E-05	588058.1	4137073.3	18.6	0.00	3.95	2.89	YES
L0019907	0	0.23890E-05	588066.6	4137073.8	18.6	0.00	3.95	2.89	YES
L0019908	0	0.23890E-05	588075.1	4137074.3	18.7	0.00	3.95	2.89	YES
L0019909	0	0.23890E-05	588083.6	4137074.8	18.7	0.00	3.95	2.89	YES
L0019910	0	0.23890E-05	588092.1	4137075.4	18.5	0.00	3.95	2.89	YES
L0019911	0	0.23890E-05	588100.6	4137075.9	18.3	0.00	3.95	2.89	YES
L0019912	0	0.23890E-05	588109.0	4137076.4	18.1	0.00	3.95	2.89	YES
L0019913	0	0.23890E-05	588110.6	4137070.5	18.1	0.00	3.95	2.89	YES
L0019914	0	0.23890E-05	588109.4	4137062.1	18.0	0.00	3.95	2.89	YES
L0019915	0	0.23890E-05	588108.2	4137053.7	17.8	0.00	3.95	2.89	YES
L0019916	0	0.23890E-05	588107.0	4137045.3	17.6	0.00	3.95	2.89	YES
L0019917	0	0.23890E-05	588105.8	4137036.9	17.7	0.00	3.95	2.89	YES
L0019918	0	0.23890E-05	588104.5	4137028.5	17.8	0.00	3.95		

2.89 YES							
L0019919	0	0.23890E-05	588103.3	4137020.1	17.9	0.00	3.95
2.89 YES							
L0019920	0	0.23890E-05	588102.1	4137011.7	17.9	0.00	3.95
2.89 YES							
L0019921	0	0.23890E-05	588100.9	4137003.2	17.8	0.00	3.95
2.89 YES							
L0019922	0	0.23890E-05	588099.7	4136994.8	17.7	0.00	3.95
2.89 YES							
L0019923	0	0.23890E-05	588098.5	4136986.4	17.7	0.00	3.95
2.89 YES							
L0019924	0	0.23890E-05	588097.3	4136978.0	17.9	0.00	3.95
2.89 YES							
L0019925	0	0.23890E-05	588096.0	4136969.6	18.2	0.00	3.95
2.89 YES							
L0019926	0	0.23890E-05	588094.8	4136961.2	18.6	0.00	3.95
2.89 YES							
L0019927	0	0.23890E-05	588093.6	4136952.8	18.8	0.00	3.95
2.89 YES							
L0019928	0	0.23890E-05	588092.4	4136944.4	18.9	0.00	3.95
2.89 YES							
L0019929	0	0.23890E-05	588091.2	4136935.9	18.9	0.00	3.95
2.89 YES							
L0019930	0	0.23890E-05	588090.0	4136927.5	19.0	0.00	3.95
2.89 YES							
L0019931	0	0.23890E-05	588088.8	4136919.1	19.0	0.00	3.95
2.89 YES							
L0019932	0	0.23890E-05	588087.6	4136910.7	19.0	0.00	3.95
2.89 YES							
L0019933	0	0.23890E-05	588086.3	4136902.3	19.1	0.00	3.95
2.89 YES							
L0019934	0	0.23890E-05	588085.1	4136893.9	19.1	0.00	3.95
2.89 YES							
L0019935	0	0.23890E-05	588083.9	4136885.5	19.2	0.00	3.95
2.89 YES							
L0019936	0	0.23890E-05	588081.2	4136878.9	19.3	0.00	3.95
2.89 YES							
L0019937	0	0.23890E-05	588072.7	4136879.1	19.3	0.00	3.95
2.89 YES							
L0019938	0	0.23890E-05	588064.2	4136879.2	19.3	0.00	3.95
2.89 YES							
L0019939	0	0.23890E-05	588055.7	4136879.4	19.1	0.00	3.95
2.89 YES							
L0019940	0	0.23890E-05	588047.2	4136879.6	18.9	0.00	3.95
2.89 YES							
L0019941	0	0.23890E-05	588038.7	4136879.8	18.6	0.00	3.95
2.89 YES							
L0019942	0	0.23890E-05	588030.2	4136880.0	18.5	0.00	3.95

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2.89     YES
 L0019943         0   0.23890E-05  588021.7 4136880.1    18.5     0.00     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0019944         0   0.23890E-05  588013.2 4136880.3    18.5     0.00     3.95
2.89     YES
 L0019945         0   0.23890E-05  588004.7 4136880.5    18.6     0.00     3.95
2.89     YES
 L0019946         0   0.23890E-05  587996.2 4136880.7    18.7     0.00     3.95
2.89     YES
 L0019947         0   0.23890E-05  587987.7 4136880.9    18.8     0.00     3.95
2.89     YES
 L0019948         0   0.23890E-05  587979.2 4136881.1    18.9     0.00     3.95
2.89     YES
 L0019949         0   0.23890E-05  587970.7 4136881.2    18.9     0.00     3.95
2.89     YES
 L0019950         0   0.23890E-05  587962.2 4136881.4    18.9     0.00     3.95
2.89     YES
 L0019951         0   0.23890E-05  587953.7 4136881.6    18.8     0.00     3.95
2.89     YES
 L0019952         0   0.23890E-05  587950.6 4136886.3    18.8     0.00     3.95
2.89     YES
 L0019953         0   0.23890E-05  587951.8 4136894.7    18.8     0.00     3.95
2.89     YES
 L0019954         0   0.23890E-05  587953.0 4136903.1    18.8     0.00     3.95
2.89     YES
 L0019955         0   0.23890E-05  587954.2 4136911.6    18.7     0.00     3.95
2.89     YES
 L0019956         0   0.23890E-05  587955.5 4136920.0    18.7     0.00     3.95
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2.89 YES							
L0019957	0	0.23890E-05	587956.7	4136928.4	18.8	0.00	3.95
2.89 YES							
L0019958	0	0.23890E-05	587957.9	4136936.8	18.9	0.00	3.95
2.89 YES							
L0019959	0	0.23890E-05	587959.2	4136945.2	18.9	0.00	3.95
2.89 YES							
L0019960	0	0.23890E-05	587960.4	4136953.6	18.8	0.00	3.95
2.89 YES							
L0019961	0	0.23890E-05	587961.6	4136962.0	18.6	0.00	3.95
2.89 YES							
L0019962	0	0.23890E-05	587962.8	4136970.4	18.5	0.00	3.95
2.89 YES							
L0019963	0	0.23890E-05	587964.1	4136978.8	18.3	0.00	3.95
2.89 YES							
L0019964	0	0.23890E-05	587965.3	4136987.3	18.2	0.00	3.95
2.89 YES							
L0019965	0	0.23890E-05	587966.5	4136995.7	18.0	0.00	3.95
2.89 YES							
L0019966	0	0.23890E-05	587967.8	4137004.1	17.9	0.00	3.95
2.89 YES							
L0019967	0	0.23890E-05	587969.0	4137012.5	17.8	0.00	3.95
2.89 YES							
L0019968	0	0.23890E-05	587970.2	4137020.9	17.8	0.00	3.95
2.89 YES							
L0019969	0	0.23890E-05	587971.4	4137029.3	17.8	0.00	3.95
2.89 YES							
L0019970	0	0.23890E-05	587972.7	4137037.7	17.9	0.00	3.95
2.89 YES							
L0019971	0	0.23890E-05	587973.9	4137046.1	18.0	0.00	3.95
2.89 YES							
L0019972	0	0.23890E-05	587978.3	4137051.2	18.4	0.00	3.95
2.89 YES							
L0019973	0	0.23890E-05	587986.7	4137051.9	18.5	0.00	3.95
2.89 YES							
L0019974	0	0.23890E-05	587995.2	4137052.6	18.7	0.00	3.95
2.89 YES							
L0019975	0	0.23890E-05	588003.7	4137053.3	18.8	0.00	3.95
2.89 YES							
L0019976	0	0.23890E-05	588012.2	4137053.9	18.8	0.00	3.95
2.89 YES							
L0019977	0	0.23890E-05	588020.6	4137054.6	18.6	0.00	3.95
2.89 YES							
L0019978	0	0.23890E-05	588029.1	4137055.3	18.4	0.00	3.95
2.89 YES							
L0019979	0	0.23890E-05	588037.6	4137056.0	18.3	0.00	3.95
2.89 YES							
L0019980	0	0.23890E-05	588046.0	4137056.7	18.3	0.00	3.95

2.89 YES
L0019981 0 0.23890E-05 588054.5 4137057.4 18.3 0.00 3.95
2.89 YES
L0019982 0 0.23890E-05 588063.0 4137058.1 18.3 0.00 3.95
2.89 YES
L0019983 0 0.23890E-05 588071.5 4137058.8 18.3 0.00 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0019984	0	0.23890E-05	588079.9	4137059.5	18.4	0.00	3.95	2.89	YES	
L0019985	0	0.23890E-05	588088.4	4137060.1	18.3	0.00	3.95	2.89	YES	
L0019986	0	0.23890E-05	588090.5	4137055.1	18.1	0.00	3.95	2.89	YES	
L0019987	0	0.23890E-05	588088.9	4137046.8	17.9	0.00	3.95	2.89	YES	
L0019988	0	0.23890E-05	588087.4	4137038.4	17.9	0.00	3.95	2.89	YES	
L0019989	0	0.23890E-05	588085.8	4137030.1	17.8	0.00	3.95	2.89	YES	
L0019990	0	0.23890E-05	588084.2	4137021.7	17.7	0.00	3.95	2.89	YES	
L0019991	0	0.23890E-05	588082.6	4137013.3	17.6	0.00	3.95	2.89	YES	
L0019992	0	0.23890E-05	588081.0	4137005.0	17.7	0.00	3.95	2.89	YES	
L0019993	0	0.23890E-05	588079.5	4136996.6	17.7	0.00	3.95	2.89	YES	
L0019994	0	0.23890E-05	588077.9	4136988.3	17.7	0.00	3.95			

2.89 YES							
L0019995	0	0.23890E-05	588076.3	4136979.9	17.8	0.00	3.95
2.89 YES							
L0019996	0	0.23890E-05	588074.7	4136971.6	18.0	0.00	3.95
2.89 YES							
L0019997	0	0.23890E-05	588073.1	4136963.2	18.2	0.00	3.95
2.89 YES							
L0019998	0	0.23890E-05	588071.6	4136954.9	18.4	0.00	3.95
2.89 YES							
L0019999	0	0.23890E-05	588070.0	4136946.5	18.4	0.00	3.95
2.89 YES							
L0020000	0	0.23890E-05	588068.4	4136938.2	18.4	0.00	3.95
2.89 YES							
L0020001	0	0.23890E-05	588066.8	4136929.8	18.4	0.00	3.95
2.89 YES							
L0020002	0	0.23890E-05	588065.3	4136921.5	18.5	0.00	3.95
2.89 YES							
L0020003	0	0.23890E-05	588063.7	4136913.1	18.6	0.00	3.95
2.89 YES							
L0020004	0	0.23890E-05	588062.1	4136904.8	18.8	0.00	3.95
2.89 YES							
L0020005	0	0.23890E-05	588053.8	4136903.9	18.7	0.00	3.95
2.89 YES							
L0020006	0	0.23890E-05	588045.4	4136903.4	18.6	0.00	3.95
2.89 YES							
L0020007	0	0.23890E-05	588036.9	4136902.8	18.6	0.00	3.95
2.89 YES							
L0020008	0	0.23890E-05	588028.4	4136902.2	18.5	0.00	3.95
2.89 YES							
L0020009	0	0.23890E-05	588019.9	4136901.6	18.4	0.00	3.95
2.89 YES							
L0020010	0	0.23890E-05	588011.4	4136901.1	18.4	0.00	3.95
2.89 YES							
L0020011	0	0.23890E-05	588003.0	4136900.5	18.5	0.00	3.95
2.89 YES							
L0020012	0	0.23890E-05	587994.5	4136899.9	18.7	0.00	3.95
2.89 YES							
L0020013	0	0.23890E-05	587986.0	4136899.3	18.8	0.00	3.95
2.89 YES							
L0020014	0	0.23890E-05	587977.5	4136898.8	18.9	0.00	3.95
2.89 YES							
L0020015	0	0.23890E-05	587969.0	4136898.2	18.9	0.00	3.95
2.89 YES							
L0020016	0	0.23890E-05	587964.8	4136901.4	18.9	0.00	3.95
2.89 YES							
L0020017	0	0.23890E-05	587966.4	4136909.7	18.8	0.00	3.95
2.89 YES							
L0020018	0	0.23890E-05	587967.9	4136918.1	18.7	0.00	3.95

```
2.89     YES
 L0020019         0   0.23890E-05  587969.5 4136926.4    18.7     0.00     3.95
2.89     YES
 L0020020         0   0.23890E-05  587971.1 4136934.8    18.6     0.00     3.95
2.89     YES
 L0020021         0   0.23890E-05  587972.6 4136943.1    18.6     0.00     3.95
2.89     YES
 L0020022         0   0.23890E-05  587974.2 4136951.5    18.5     0.00     3.95
2.89     YES
 L0020023         0   0.23890E-05  587975.8 4136959.9    18.4     0.00     3.95
2.89     YES
```


*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020024	0	0.23890E-05	587977.4	4136968.2	18.3	0.00	3.95	2.89	YES	
L0020025	0	0.23890E-05	587978.9	4136976.6	18.2	0.00	3.95	2.89	YES	
L0020026	0	0.23890E-05	587980.5	4136984.9	18.1	0.00	3.95	2.89	YES	
L0020027	0	0.23890E-05	587982.1	4136993.3	18.0	0.00	3.95	2.89	YES	
L0020028	0	0.23890E-05	587983.6	4137001.6	18.0	0.00	3.95	2.89	YES	
L0020029	0	0.23890E-05	587985.2	4137010.0	18.0	0.00	3.95	2.89	YES	
L0020030	0	0.23890E-05	587986.8	4137018.3	18.0	0.00	3.95	2.89	YES	
L0020031	0	0.23890E-05	587988.3	4137026.7	18.0	0.00	3.95	2.89	YES	
L0020032	0	0.23890E-05	587989.9	4137035.0	18.1	0.00	3.95			

2.89	YES						
L0020033	0	0.23890E-05	587994.7	4137039.6	18.1	0.00	3.95
2.89	YES						
L0020034	0	0.23890E-05	588003.2	4137040.0	18.2	0.00	3.95
2.89	YES						
L0020035	0	0.23890E-05	588011.7	4137040.3	18.2	0.00	3.95
2.89	YES						
L0020036	0	0.23890E-05	588020.2	4137040.6	18.1	0.00	3.95
2.89	YES						
L0020037	0	0.23890E-05	588028.7	4137040.9	17.9	0.00	3.95
2.89	YES						
L0020038	0	0.23890E-05	588037.2	4137041.2	17.9	0.00	3.95
2.89	YES						
L0020039	0	0.23890E-05	588045.7	4137041.5	17.9	0.00	3.95
2.89	YES						
L0020040	0	0.23890E-05	588054.2	4137041.9	18.0	0.00	3.95
2.89	YES						
L0020041	0	0.23890E-05	588062.7	4137042.2	18.0	0.00	3.95
2.89	YES						
L0020042	0	0.23890E-05	588066.1	4137038.0	18.0	0.00	3.95
2.89	YES						
L0020043	0	0.23890E-05	588064.6	4137029.6	17.9	0.00	3.95
2.89	YES						
L0020044	0	0.23890E-05	588063.2	4137021.3	17.9	0.00	3.95
2.89	YES						
L0020045	0	0.23890E-05	588061.7	4137012.9	17.9	0.00	3.95
2.89	YES						
L0020046	0	0.23890E-05	588060.3	4137004.5	17.9	0.00	3.95
2.89	YES						
L0020047	0	0.23890E-05	588058.9	4136996.1	17.9	0.00	3.95
2.89	YES						
L0020048	0	0.23890E-05	588057.4	4136987.8	17.9	0.00	3.95
2.89	YES						
L0020049	0	0.23890E-05	588056.0	4136979.4	18.0	0.00	3.95
2.89	YES						
L0020050	0	0.23890E-05	588054.5	4136971.0	18.1	0.00	3.95
2.89	YES						
L0020051	0	0.23890E-05	588053.1	4136962.6	18.1	0.00	3.95
2.89	YES						
L0020052	0	0.23890E-05	588051.7	4136954.3	18.2	0.00	3.95
2.89	YES						
L0020053	0	0.23890E-05	588050.2	4136945.9	18.2	0.00	3.95
2.89	YES						
L0020054	0	0.23890E-05	588048.8	4136937.5	18.3	0.00	3.95
2.89	YES						
L0020055	0	0.23890E-05	588047.3	4136929.1	18.3	0.00	3.95
2.89	YES						
L0020056	0	0.23890E-05	588045.9	4136920.7	18.4	0.00	3.95

2.89 YES
L0020057 0 0.23890E-05 588037.5 4136920.0 18.4 0.00 3.95
2.89 YES
L0020058 0 0.23890E-05 588029.0 4136919.2 18.4 0.00 3.95
2.89 YES
L0020059 0 0.23890E-05 588020.6 4136918.5 18.3 0.00 3.95
2.89 YES
L0020060 0 0.23890E-05 588012.1 4136917.8 18.3 0.00 3.95
2.89 YES
L0020061 0 0.23890E-05 588003.6 4136917.1 18.3 0.00 3.95
2.89 YES
L0020062 0 0.23890E-05 587995.1 4136916.4 18.5 0.00 3.95
2.89 YES
L0020063 0 0.23890E-05 587986.7 4136915.7 18.6 0.00 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020064	0	0.23890E-05	587978.4	4136915.1	18.7	0.00	3.95	2.89	YES	
L0020065	0	0.23890E-05	587980.4	4136923.4	18.6	0.00	3.95	2.89	YES	
L0020066	0	0.23890E-05	587982.3	4136931.7	18.5	0.00	3.95	2.89	YES	
L0020067	0	0.23890E-05	587984.2	4136940.0	18.4	0.00	3.95	2.89	YES	
L0020068	0	0.23890E-05	587986.1	4136948.3	18.3	0.00	3.95	2.89	YES	
L0020069	0	0.23890E-05	587988.0	4136956.5	18.2	0.00	3.95	2.89	YES	
L0020070	0	0.23890E-05	587990.0	4136964.8	18.2	0.00	3.95			

2.89 YES							
L0020071	0	0.23890E-05	587991.9	4136973.1	18.1	0.00	3.95
2.89 YES							
L0020072	0	0.23890E-05	587993.8	4136981.4	18.1	0.00	3.95
2.89 YES							
L0020073	0	0.23890E-05	587995.7	4136989.7	18.1	0.00	3.95
2.89 YES							
L0020074	0	0.23890E-05	587997.7	4136997.9	18.1	0.00	3.95
2.89 YES							
L0020075	0	0.23890E-05	587999.6	4137006.2	18.1	0.00	3.95
2.89 YES							
L0020076	0	0.23890E-05	588001.5	4137014.5	18.1	0.00	3.95
2.89 YES							
L0020077	0	0.23890E-05	588004.5	4137021.6	18.2	0.00	3.95
2.89 YES							
L0020078	0	0.23890E-05	588012.9	4137022.4	18.2	0.00	3.95
2.89 YES							
L0020079	0	0.23890E-05	588021.4	4137023.3	18.2	0.00	3.95
2.89 YES							
L0020080	0	0.23890E-05	588029.8	4137024.2	18.2	0.00	3.95
2.89 YES							
L0020081	0	0.23890E-05	588038.3	4137025.1	18.1	0.00	3.95
2.89 YES							
L0020082	0	0.23890E-05	588046.8	4137026.0	18.1	0.00	3.95
2.89 YES							
L0020083	0	0.23890E-05	588047.4	4137019.8	18.1	0.00	3.95
2.89 YES							
L0020084	0	0.23890E-05	588045.7	4137011.5	18.2	0.00	3.95
2.89 YES							
L0020085	0	0.23890E-05	588043.9	4137003.2	18.2	0.00	3.95
2.89 YES							
L0020086	0	0.23890E-05	588042.2	4136994.8	18.2	0.00	3.95
2.89 YES							
L0020087	0	0.23890E-05	588040.5	4136986.5	18.2	0.00	3.95
2.89 YES							
L0020088	0	0.23890E-05	588038.7	4136978.2	18.2	0.00	3.95
2.89 YES							
L0020089	0	0.23890E-05	588037.0	4136969.9	18.3	0.00	3.95
2.89 YES							
L0020090	0	0.23890E-05	588035.2	4136961.6	18.3	0.00	3.95
2.89 YES							
L0020091	0	0.23890E-05	588033.5	4136953.2	18.3	0.00	3.95
2.89 YES							
L0020092	0	0.23890E-05	588031.8	4136944.9	18.3	0.00	3.95
2.89 YES							
L0020093	0	0.23890E-05	588027.6	4136939.2	18.3	0.00	3.95
2.89 YES							
L0020094	0	0.23890E-05	588019.2	4136937.9	18.2	0.00	3.95

2.89 YES
L0020095 0 0.23890E-05 588010.8 4136936.7 18.2 0.00 3.95
2.89 YES
L0020096 0 0.23890E-05 588002.3 4136935.4 18.2 0.00 3.95
2.89 YES
L0020097 0 0.23890E-05 587993.9 4136934.2 18.3 0.00 3.95
2.89 YES
L0020098 0 0.23890E-05 587994.5 4136940.9 18.3 0.00 3.95
2.89 YES
L0020099 0 0.23890E-05 587996.7 4136949.1 18.2 0.00 3.95
2.89 YES
L0020100 0 0.23890E-05 587998.9 4136957.3 18.2 0.00 3.95
2.89 YES
L0020101 0 0.23890E-05 588001.2 4136965.5 18.2 0.00 3.95
2.89 YES
L0020102 0 0.23890E-05 588003.4 4136973.7 18.2 0.00 3.95
2.89 YES
L0020103 0 0.23890E-05 588005.6 4136982.0 18.2 0.00 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC) SCALAR VARY BY	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE
L0020104	0	0.23890E-05	588007.8	4136990.2	18.2	0.00	3.95	2.89	YES
L0020105	0	0.23890E-05	588010.0	4136998.4	18.2	0.00	3.95	2.89	YES
L0020106	0	0.23890E-05	588012.2	4137006.6	18.2	0.00	3.95	2.89	YES
L0020107	0	0.23890E-05	588019.5	4137008.1	18.3	0.00	3.95	2.89	YES
L0020108	0	0.23890E-05	588028.0	4137008.1	18.3	0.00	3.95		

2.89 YES							
L0020109	0	0.23890E-05	588029.1	4137002.5	18.3	0.00	3.95
2.89 YES							
L0020110	0	0.23890E-05	588026.9	4136994.3	18.3	0.00	3.95
2.89 YES							
L0020111	0	0.23890E-05	588024.6	4136986.1	18.2	0.00	3.95
2.89 YES							
L0020112	0	0.23890E-05	588022.4	4136977.9	18.2	0.00	3.95
2.89 YES							
L0020113	0	0.23890E-05	588020.1	4136969.7	18.2	0.00	3.95
2.89 YES							
L0020114	0	0.23890E-05	588017.9	4136961.5	18.2	0.00	3.95
2.89 YES							
L0020115	0	0.23890E-05	588015.6	4136953.3	18.2	0.00	3.95
2.89 YES							
L0020116	0	0.23400E-05	587615.5	4136711.3	21.2	3.11	3.95
2.89 YES							
L0020117	0	0.23400E-05	587623.7	4136709.3	21.1	3.11	3.95
2.89 YES							
L0020118	0	0.23400E-05	587632.0	4136707.4	20.9	3.11	3.95
2.89 YES							
L0020119	0	0.23400E-05	587640.3	4136705.4	20.8	3.11	3.95
2.89 YES							
L0020120	0	0.23400E-05	587648.6	4136703.5	20.8	3.11	3.95
2.89 YES							
L0020121	0	0.23400E-05	587656.8	4136701.5	20.8	3.11	3.95
2.89 YES							
L0020122	0	0.23400E-05	587665.1	4136699.6	20.9	3.11	3.95
2.89 YES							
L0020123	0	0.23400E-05	587673.4	4136697.6	20.9	3.11	3.95
2.89 YES							
L0020124	0	0.23400E-05	587681.6	4136695.7	20.9	3.11	3.95
2.89 YES							
L0020125	0	0.23400E-05	587689.9	4136693.7	20.9	3.11	3.95
2.89 YES							
L0020126	0	0.23400E-05	587698.2	4136691.8	20.9	3.11	3.95
2.89 YES							
L0020127	0	0.23400E-05	587706.5	4136689.8	20.8	3.11	3.95
2.89 YES							
L0020128	0	0.23400E-05	587714.7	4136687.9	20.7	3.11	3.95
2.89 YES							
L0020129	0	0.23400E-05	587723.0	4136685.9	20.7	3.11	3.95
2.89 YES							
L0020130	0	0.23400E-05	587731.3	4136684.0	20.7	3.11	3.95
2.89 YES							
L0020131	0	0.23400E-05	587739.6	4136682.0	20.6	3.11	3.95
2.89 YES							
L0020132	0	0.23400E-05	587747.8	4136680.1	20.7	3.11	3.95

2.89 YES
L0020133 0 0.23400E-05 587756.1 4136678.1 20.7 3.11 3.95
2.89 YES
L0020134 0 0.23400E-05 587764.4 4136676.2 20.7 3.11 3.95
2.89 YES
L0020135 0 0.23400E-05 587772.7 4136674.2 20.7 3.11 3.95
2.89 YES
L0020136 0 0.23400E-05 587780.9 4136672.3 20.7 3.11 3.95
2.89 YES
L0020137 0 0.23400E-05 587789.2 4136670.3 20.7 3.11 3.95
2.89 YES
L0020138 0 0.23400E-05 587797.5 4136668.4 20.7 3.11 3.95
2.89 YES
L0020139 0 0.23400E-05 587805.7 4136666.4 20.6 3.11 3.95
2.89 YES
L0020140 0 0.23400E-05 587814.0 4136664.5 20.6 3.11 3.95
2.89 YES
L0020141 0 0.23400E-05 587822.3 4136662.5 20.5 3.11 3.95
2.89 YES
L0020142 0 0.23400E-05 587830.6 4136660.6 20.4 3.11 3.95
2.89 YES
L0020143 0 0.23400E-05 587838.8 4136658.6 20.2 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC) BY	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY
L0020144	0	0.23400E-05	587847.1	4136656.7	20.2	3.11	3.95	2.89	YES	
L0020145	0	0.23400E-05	587855.4	4136654.7	20.2	3.11	3.95	2.89	YES	
L0020146	0	0.23400E-05	587863.7	4136652.8	20.2	3.11	3.95			

2.89 YES							
L0020147	0	0.23400E-05	587871.9	4136650.8	20.2	3.11	3.95
2.89 YES							
L0020148	0	0.23400E-05	587880.2	4136648.9	20.2	3.11	3.95
2.89 YES							
L0020149	0	0.23400E-05	587888.5	4136646.9	20.2	3.11	3.95
2.89 YES							
L0020150	0	0.23400E-05	587896.8	4136645.0	20.2	3.11	3.95
2.89 YES							
L0020151	0	0.23400E-05	587905.0	4136643.0	20.1	3.11	3.95
2.89 YES							
L0020152	0	0.23400E-05	587913.3	4136641.1	20.1	3.11	3.95
2.89 YES							
L0020153	0	0.23400E-05	587921.6	4136639.1	20.2	3.11	3.95
2.89 YES							
L0020154	0	0.23400E-05	587929.8	4136637.2	20.2	3.11	3.95
2.89 YES							
L0020155	0	0.23400E-05	587938.1	4136635.2	20.3	3.11	3.95
2.89 YES							
L0020156	0	0.23400E-05	587946.4	4136633.3	20.4	3.11	3.95
2.89 YES							
L0020157	0	0.23400E-05	587954.7	4136631.3	20.4	3.11	3.95
2.89 YES							
L0020158	0	0.23400E-05	587962.8	4136629.6	20.4	3.11	3.95
2.89 YES							
L0020159	0	0.23400E-05	587964.4	4136638.0	20.3	3.11	3.95
2.89 YES							
L0020160	0	0.23400E-05	587966.0	4136646.3	20.2	3.11	3.95
2.89 YES							
L0020161	0	0.23400E-05	587967.6	4136654.7	20.2	3.11	3.95
2.89 YES							
L0020162	0	0.23400E-05	587969.2	4136663.0	20.2	3.11	3.95
2.89 YES							
L0020163	0	0.23400E-05	587970.8	4136671.4	20.2	3.11	3.95
2.89 YES							
L0020164	0	0.23400E-05	587972.4	4136679.7	20.1	3.11	3.95
2.89 YES							
L0020165	0	0.23400E-05	587974.0	4136688.1	20.1	3.11	3.95
2.89 YES							
L0020166	0	0.23400E-05	587975.6	4136696.4	20.1	3.11	3.95
2.89 YES							
L0020167	0	0.23400E-05	587977.2	4136704.8	20.1	3.11	3.95
2.89 YES							
L0020168	0	0.23400E-05	587978.8	4136713.1	20.1	3.11	3.95
2.89 YES							
L0020169	0	0.23400E-05	587980.4	4136721.5	20.1	3.11	3.95
2.89 YES							
L0020170	0	0.23400E-05	587982.0	4136729.8	20.0	3.11	3.95

```
2.89     YES
 L0020171         0   0.23400E-05  587983.6 4136738.2    20.0     3.11     3.95
2.89     YES
 L0020172         0   0.23400E-05  587985.2 4136746.5    20.1     3.11     3.95
2.89     YES
 L0020173         0   0.23400E-05  587986.8 4136754.8    20.2     3.11     3.95
2.89     YES
 L0020174         0   0.23400E-05  587988.4 4136763.2    20.3     3.11     3.95
2.89     YES
 L0020175         0   0.23400E-05  587990.0 4136771.5    20.2     3.11     3.95
2.89     YES
 L0020176         0   0.23400E-05  587991.6 4136779.9    19.9     3.11     3.95
2.89     YES
 L0020177         0   0.23400E-05  587992.3 4136787.5    19.7     3.11     3.95
2.89     YES
 L0020178         0   0.23400E-05  587983.8 4136788.0    19.9     3.11     3.95
2.89     YES
 L0020179         0   0.23400E-05  587975.3 4136788.5    19.9     3.11     3.95
2.89     YES
 L0020180         0   0.23400E-05  587966.8 4136788.9    20.0     3.11     3.95
2.89     YES
 L0020181         0   0.23400E-05  587958.3 4136789.4    20.1     3.11     3.95
2.89     YES
 L0020182         0   0.23400E-05  587949.8 4136789.9    20.0     3.11     3.95
2.89     YES
 L0020183         0   0.23400E-05  587941.4 4136790.4    20.0     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        20:43:19

                                   PAGE  15
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0020184         0   0.23400E-05  587932.9 4136790.9    19.9     3.11     3.95
```

2.89 YES							
L0020185	0	0.23400E-05	587924.4	4136791.4	19.8	3.11	3.95
2.89 YES							
L0020186	0	0.23400E-05	587915.9	4136791.8	19.7	3.11	3.95
2.89 YES							
L0020187	0	0.23400E-05	587907.4	4136792.3	19.7	3.11	3.95
2.89 YES							
L0020188	0	0.23400E-05	587898.9	4136792.8	19.6	3.11	3.95
2.89 YES							
L0020189	0	0.23400E-05	587890.4	4136793.3	19.5	3.11	3.95
2.89 YES							
L0020190	0	0.23400E-05	587881.9	4136793.8	19.5	3.11	3.95
2.89 YES							
L0020191	0	0.23400E-05	587873.5	4136794.3	19.6	3.11	3.95
2.89 YES							
L0020192	0	0.23400E-05	587865.0	4136794.8	19.7	3.11	3.95
2.89 YES							
L0020193	0	0.23400E-05	587856.6	4136796.0	19.8	3.11	3.95
2.89 YES							
L0020194	0	0.23400E-05	587848.4	4136798.0	20.0	3.11	3.95
2.89 YES							
L0020195	0	0.23400E-05	587840.1	4136800.1	20.1	3.11	3.95
2.89 YES							
L0020196	0	0.23400E-05	587831.9	4136802.2	20.1	3.11	3.95
2.89 YES							
L0020197	0	0.23400E-05	587823.6	4136804.3	20.1	3.11	3.95
2.89 YES							
L0020198	0	0.23400E-05	587815.4	4136806.3	20.1	3.11	3.95
2.89 YES							
L0020199	0	0.23400E-05	587807.1	4136808.4	20.1	3.11	3.95
2.89 YES							
L0020200	0	0.23400E-05	587798.9	4136810.5	20.0	3.11	3.95
2.89 YES							
L0020201	0	0.23400E-05	587790.7	4136812.5	20.0	3.11	3.95
2.89 YES							
L0020202	0	0.23400E-05	587782.4	4136814.6	20.0	3.11	3.95
2.89 YES							
L0020203	0	0.23400E-05	587774.2	4136816.7	20.1	3.11	3.95
2.89 YES							
L0020204	0	0.23400E-05	587765.9	4136818.8	20.2	3.11	3.95
2.89 YES							
L0020205	0	0.23400E-05	587757.7	4136820.8	20.3	3.11	3.95
2.89 YES							
L0020206	0	0.23400E-05	587749.4	4136822.9	20.3	3.11	3.95
2.89 YES							
L0020207	0	0.23400E-05	587741.2	4136825.0	20.3	3.11	3.95
2.89 YES							
L0020208	0	0.23400E-05	587732.9	4136827.1	20.3	3.11	3.95

```
2.89     YES
 L0020209         0   0.23400E-05  587724.7 4136829.1    20.3     3.11     3.95
2.89     YES
 L0020210         0   0.23400E-05  587716.5 4136831.2    20.3     3.11     3.95
2.89     YES
 L0020211         0   0.23400E-05  587708.2 4136833.3    20.2     3.11     3.95
2.89     YES
 L0020212         0   0.23400E-05  587700.0 4136835.3    20.1     3.11     3.95
2.89     YES
 L0020213         0   0.23400E-05  587691.7 4136837.4    20.0     3.11     3.95
2.89     YES
 L0020214         0   0.23400E-05  587683.5 4136839.5    20.2     3.11     3.95
2.89     YES
 L0020215         0   0.23400E-05  587675.2 4136841.6    20.4     3.11     3.95
2.89     YES
 L0020216         0   0.23400E-05  587667.0 4136843.6    20.6     3.11     3.95
2.89     YES
 L0020217         0   0.23400E-05  587658.8 4136845.7    20.7     3.11     3.95
2.89     YES
 L0020218         0   0.23400E-05  587650.5 4136847.8    20.7     3.11     3.95
2.89     YES
 L0020219         0   0.23400E-05  587642.3 4136849.9    20.7     3.11     3.95
2.89     YES
 L0020220         0   0.23400E-05  587636.1 4136848.7    20.7     3.11     3.95
2.89     YES
 L0020221         0   0.23400E-05  587634.3 4136840.4    20.9     3.11     3.95
2.89     YES
 L0020222         0   0.23400E-05  587632.5 4136832.0    21.0     3.11     3.95
2.89     YES
 L0020223         0   0.23400E-05  587630.8 4136823.7    21.1     3.11     3.95
2.89     YES
```



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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                        *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
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L0020224	0	0.23400E-05	587629.0	4136815.4	21.2	3.11	3.95	2.89 YES
L0020225	0	0.23400E-05	587627.3	4136807.1	21.2	3.11	3.95	2.89 YES
L0020226	0	0.23400E-05	587625.5	4136798.8	21.2	3.11	3.95	2.89 YES
L0020227	0	0.23400E-05	587623.7	4136790.5	21.2	3.11	3.95	2.89 YES
L0020228	0	0.23400E-05	587622.0	4136782.1	21.3	3.11	3.95	2.89 YES
L0020229	0	0.23400E-05	587620.2	4136773.8	21.3	3.11	3.95	2.89 YES
L0020230	0	0.23400E-05	587618.5	4136765.5	21.3	3.11	3.95	2.89 YES
L0020231	0	0.23400E-05	587616.7	4136757.2	21.4	3.11	3.95	2.89 YES
L0020232	0	0.23400E-05	587614.9	4136748.9	21.4	3.11	3.95	2.89 YES
L0020233	0	0.23400E-05	587613.2	4136740.6	21.4	3.11	3.95	2.89 YES
L0020234	0	0.23400E-05	587611.4	4136732.3	21.5	3.11	3.95	2.89 YES
L0020235	0	0.23400E-05	587619.1	4136729.9	21.4	3.11	3.95	2.89 YES
L0020236	0	0.23400E-05	587627.4	4136727.8	21.1	3.11	3.95	2.89 YES
L0020237	0	0.23400E-05	587635.6	4136725.8	20.8	3.11	3.95	2.89 YES
L0020238	0	0.23400E-05	587643.9	4136723.8	20.5	3.11	3.95	2.89 YES
L0020239	0	0.23400E-05	587652.1	4136721.7	20.6	3.11	3.95	2.89 YES
L0020240	0	0.23400E-05	587660.4	4136719.7	20.6	3.11	3.95	2.89 YES
L0020241	0	0.23400E-05	587668.7	4136717.6	20.6	3.11	3.95	2.89 YES
L0020242	0	0.23400E-05	587676.9	4136715.6	20.5	3.11	3.95	2.89 YES
L0020243	0	0.23400E-05	587685.2	4136713.6	20.5	3.11	3.95	2.89 YES
L0020244	0	0.23400E-05	587693.4	4136711.5	20.4	3.11	3.95	2.89 YES
L0020245	0	0.23400E-05	587701.7	4136709.5	20.4	3.11	3.95	2.89 YES
L0020246	0	0.23400E-05	587709.9	4136707.5	20.3	3.11	3.95	

2.89 YES
L0020247 0 0.23400E-05 587718.2 4136705.4 20.3 3.11 3.95
2.89 YES
L0020248 0 0.23400E-05 587726.4 4136703.4 20.3 3.11 3.95
2.89 YES
L0020249 0 0.23400E-05 587734.7 4136701.3 20.3 3.11 3.95
2.89 YES
L0020250 0 0.23400E-05 587742.9 4136699.3 20.4 3.11 3.95
2.89 YES
L0020251 0 0.23400E-05 587751.2 4136697.3 20.4 3.11 3.95
2.89 YES
L0020252 0 0.23400E-05 587759.4 4136695.2 20.5 3.11 3.95
2.89 YES
L0020253 0 0.23400E-05 587767.7 4136693.2 20.5 3.11 3.95
2.89 YES
L0020254 0 0.23400E-05 587775.9 4136691.1 20.6 3.11 3.95
2.89 YES
L0020255 0 0.23400E-05 587784.2 4136689.1 20.6 3.11 3.95
2.89 YES
L0020256 0 0.23400E-05 587792.4 4136687.1 20.6 3.11 3.95
2.89 YES
L0020257 0 0.23400E-05 587800.7 4136685.0 20.4 3.11 3.95
2.89 YES
L0020258 0 0.23400E-05 587808.9 4136683.0 20.3 3.11 3.95
2.89 YES
L0020259 0 0.23400E-05 587817.2 4136680.9 20.1 3.11 3.95
2.89 YES
L0020260 0 0.23400E-05 587825.4 4136678.9 20.0 3.11 3.95
2.89 YES
L0020261 0 0.23400E-05 587833.7 4136676.9 19.8 3.11 3.95
2.89 YES
L0020262 0 0.23400E-05 587841.9 4136674.8 19.7 3.11 3.95
2.89 YES
L0020263 0 0.23400E-05 587850.2 4136672.8 19.9 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

NUMBER EMISSION RATE BASE RELEASE INIT. INIT. URBAN EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE VARY BY
L0020264	0	0.23400E-05	587858.4	4136670.7	20.1	3.11	3.95	2.89 YES
L0020265	0	0.23400E-05	587866.7	4136668.7	20.2	3.11	3.95	2.89 YES
L0020266	0	0.23400E-05	587874.9	4136666.7	20.2	3.11	3.95	2.89 YES
L0020267	0	0.23400E-05	587883.2	4136664.6	20.2	3.11	3.95	2.89 YES
L0020268	0	0.23400E-05	587891.4	4136662.6	20.2	3.11	3.95	2.89 YES
L0020269	0	0.23400E-05	587899.7	4136660.5	20.2	3.11	3.95	2.89 YES
L0020270	0	0.23400E-05	587907.9	4136658.5	20.1	3.11	3.95	2.89 YES
L0020271	0	0.23400E-05	587916.2	4136656.5	20.1	3.11	3.95	2.89 YES
L0020272	0	0.23400E-05	587924.5	4136654.4	20.1	3.11	3.95	2.89 YES
L0020273	0	0.23400E-05	587932.7	4136652.4	20.0	3.11	3.95	2.89 YES
L0020274	0	0.23400E-05	587941.0	4136650.3	20.0	3.11	3.95	2.89 YES
L0020275	0	0.23400E-05	587946.9	4136651.9	20.1	3.11	3.95	2.89 YES
L0020276	0	0.23400E-05	587948.7	4136660.2	20.2	3.11	3.95	2.89 YES
L0020277	0	0.23400E-05	587950.5	4136668.6	20.2	3.11	3.95	2.89 YES
L0020278	0	0.23400E-05	587952.4	4136676.9	20.2	3.11	3.95	2.89 YES
L0020279	0	0.23400E-05	587954.2	4136685.2	20.2	3.11	3.95	2.89 YES
L0020280	0	0.23400E-05	587956.0	4136693.5	20.2	3.11	3.95	2.89 YES
L0020281	0	0.23400E-05	587957.8	4136701.8	20.3	3.11	3.95	2.89 YES
L0020282	0	0.23400E-05	587959.6	4136710.1	20.3	3.11	3.95	2.89 YES
L0020283	0	0.23400E-05	587961.4	4136718.4	20.3	3.11	3.95	2.89 YES
L0020284	0	0.23400E-05	587963.2	4136726.7	20.3	3.11	3.95	

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2.89     YES
 L0020285         0   0.23400E-05  587965.0 4136735.0    20.2     3.11     3.95
2.89     YES
 L0020286         0   0.23400E-05  587966.8 4136743.3    20.2     3.11     3.95
2.89     YES
 L0020287         0   0.23400E-05  587968.6 4136751.6    20.2     3.11     3.95
2.89     YES
 L0020288         0   0.23400E-05  587970.4 4136759.9    20.3     3.11     3.95
2.89     YES
 L0020289         0   0.23400E-05  587972.2 4136768.2    20.3     3.11     3.95
2.89     YES
 L0020290         0   0.23400E-05  587971.1 4136774.3    20.2     3.11     3.95
2.89     YES
 L0020291         0   0.23400E-05  587962.6 4136774.8    20.2     3.11     3.95
2.89     YES
 L0020292         0   0.23400E-05  587954.1 4136775.4    20.1     3.11     3.95
2.89     YES
 L0020293         0   0.23400E-05  587945.6 4136775.9    20.1     3.11     3.95
2.89     YES
 L0020294         0   0.23400E-05  587937.1 4136776.4    20.0     3.11     3.95
2.89     YES
 L0020295         0   0.23400E-05  587928.6 4136776.9    19.9     3.11     3.95
2.89     YES
 L0020296         0   0.23400E-05  587920.2 4136777.4    19.8     3.11     3.95
2.89     YES
 L0020297         0   0.23400E-05  587911.7 4136777.9    19.7     3.11     3.95
2.89     YES
 L0020298         0   0.23400E-05  587903.2 4136778.5    19.6     3.11     3.95
2.89     YES
 L0020299         0   0.23400E-05  587894.7 4136779.0    19.6     3.11     3.95
2.89     YES
 L0020300         0   0.23400E-05  587886.2 4136779.5    19.6     3.11     3.95
2.89     YES
 L0020301         0   0.23400E-05  587877.7 4136780.0    19.7     3.11     3.95
2.89     YES
 L0020302         0   0.23400E-05  587869.3 4136780.5    19.7     3.11     3.95
2.89     YES
 L0020303         0   0.23400E-05  587860.8 4136781.1    19.8     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
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*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE VARY BY
L0020304	0	0.23400E-05	587852.5	4136782.9	20.0	3.11	3.95	2.89	YES
L0020305	0	0.23400E-05	587844.2	4136784.9	20.2	3.11	3.95	2.89	YES
L0020306	0	0.23400E-05	587836.0	4136787.0	20.3	3.11	3.95	2.89	YES
L0020307	0	0.23400E-05	587827.7	4136789.0	20.4	3.11	3.95	2.89	YES
L0020308	0	0.23400E-05	587819.5	4136791.1	20.5	3.11	3.95	2.89	YES
L0020309	0	0.23400E-05	587811.2	4136793.1	20.5	3.11	3.95	2.89	YES
L0020310	0	0.23400E-05	587803.0	4136795.1	20.4	3.11	3.95	2.89	YES
L0020311	0	0.23400E-05	587794.7	4136797.2	20.4	3.11	3.95	2.89	YES
L0020312	0	0.23400E-05	587786.5	4136799.2	20.3	3.11	3.95	2.89	YES
L0020313	0	0.23400E-05	587778.2	4136801.2	20.3	3.11	3.95	2.89	YES
L0020314	0	0.23400E-05	587770.0	4136803.3	20.3	3.11	3.95	2.89	YES
L0020315	0	0.23400E-05	587761.7	4136805.3	20.4	3.11	3.95	2.89	YES
L0020316	0	0.23400E-05	587753.5	4136807.4	20.4	3.11	3.95	2.89	YES
L0020317	0	0.23400E-05	587745.2	4136809.4	20.4	3.11	3.95	2.89	YES
L0020318	0	0.23400E-05	587737.0	4136811.4	20.4	3.11	3.95	2.89	YES
L0020319	0	0.23400E-05	587728.7	4136813.5	20.4	3.11	3.95	2.89	YES
L0020320	0	0.23400E-05	587720.5	4136815.5	20.4	3.11	3.95	2.89	YES
L0020321	0	0.23400E-05	587712.2	4136817.5	20.4	3.11	3.95	2.89	YES
L0020322	0	0.23400E-05	587703.9	4136819.6	20.3	3.11	3.95		

```
2.89     YES
 L0020323         0   0.23400E-05  587695.7 4136821.6    20.2     3.11     3.95
2.89     YES
 L0020324         0   0.23400E-05  587687.4 4136823.7    20.3     3.11     3.95
2.89     YES
 L0020325         0   0.23400E-05  587679.2 4136825.7    20.6     3.11     3.95
2.89     YES
 L0020326         0   0.23400E-05  587670.9 4136827.7    20.9     3.11     3.95
2.89     YES
 L0020327         0   0.23400E-05  587662.7 4136829.8    21.1     3.11     3.95
2.89     YES
 L0020328         0   0.23400E-05  587654.4 4136831.8    21.0     3.11     3.95
2.89     YES
 L0020329         0   0.23400E-05  587650.6 4136826.2    21.2     3.11     3.95
2.89     YES
 L0020330         0   0.23400E-05  587648.2 4136818.0    21.2     3.11     3.95
2.89     YES
 L0020331         0   0.23400E-05  587645.8 4136809.9    21.2     3.11     3.95
2.89     YES
 L0020332         0   0.23400E-05  587643.3 4136801.7    21.2     3.11     3.95
2.89     YES
 L0020333         0   0.23400E-05  587640.9 4136793.6    21.2     3.11     3.95
2.89     YES
 L0020334         0   0.23400E-05  587638.5 4136785.4    21.3     3.11     3.95
2.89     YES
 L0020335         0   0.23400E-05  587636.1 4136777.3    21.4     3.11     3.95
2.89     YES
 L0020336         0   0.23400E-05  587633.7 4136769.1    21.5     3.11     3.95
2.89     YES
 L0020337         0   0.23400E-05  587631.3 4136761.0    21.4     3.11     3.95
2.89     YES
 L0020338         0   0.23400E-05  587628.9 4136752.8    21.3     3.11     3.95
2.89     YES
 L0020339         0   0.23400E-05  587629.5 4136746.4    21.2     3.11     3.95
2.89     YES
 L0020340         0   0.23400E-05  587637.7 4136744.3    21.0     3.11     3.95
2.89     YES
 L0020341         0   0.23400E-05  587645.9 4136742.2    20.7     3.11     3.95
2.89     YES
 L0020342         0   0.23400E-05  587654.2 4136740.1    20.5     3.11     3.95
2.89     YES
 L0020343         0   0.23400E-05  587662.4 4136738.0    20.4     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE
L0020344	0	0.23400E-05	587670.6	4136735.9	20.4	3.11	3.95	2.89	YES
L0020345	0	0.23400E-05	587678.9	4136733.8	20.4	3.11	3.95	2.89	YES
L0020346	0	0.23400E-05	587687.1	4136731.7	20.4	3.11	3.95	2.89	YES
L0020347	0	0.23400E-05	587695.3	4136729.5	20.4	3.11	3.95	2.89	YES
L0020348	0	0.23400E-05	587703.6	4136727.4	20.5	3.11	3.95	2.89	YES
L0020349	0	0.23400E-05	587711.8	4136725.3	20.5	3.11	3.95	2.89	YES
L0020350	0	0.23400E-05	587720.0	4136723.2	20.5	3.11	3.95	2.89	YES
L0020351	0	0.23400E-05	587728.3	4136721.1	20.5	3.11	3.95	2.89	YES
L0020352	0	0.23400E-05	587736.5	4136719.0	20.5	3.11	3.95	2.89	YES
L0020353	0	0.23400E-05	587744.8	4136716.9	20.5	3.11	3.95	2.89	YES
L0020354	0	0.23400E-05	587753.0	4136714.8	20.6	3.11	3.95	2.89	YES
L0020355	0	0.23400E-05	587761.2	4136712.7	20.6	3.11	3.95	2.89	YES
L0020356	0	0.23400E-05	587769.5	4136710.6	20.6	3.11	3.95	2.89	YES
L0020357	0	0.23400E-05	587777.7	4136708.5	20.6	3.11	3.95	2.89	YES
L0020358	0	0.23400E-05	587785.9	4136706.4	20.5	3.11	3.95	2.89	YES
L0020359	0	0.23400E-05	587794.2	4136704.3	20.5	3.11	3.95	2.89	YES
L0020360	0	0.23400E-05	587802.4	4136702.2	20.4	3.11	3.95		

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2.89     YES
 L0020361         0   0.23400E-05  587810.6 4136700.1    20.3     3.11     3.95
2.89     YES
 L0020362         0   0.23400E-05  587818.9 4136698.0    20.2     3.11     3.95
2.89     YES
 L0020363         0   0.23400E-05  587827.1 4136695.9    20.1     3.11     3.95
2.89     YES
 L0020364         0   0.23400E-05  587835.3 4136693.8    20.0     3.11     3.95
2.89     YES
 L0020365         0   0.23400E-05  587843.6 4136691.6    20.0     3.11     3.95
2.89     YES
 L0020366         0   0.23400E-05  587851.8 4136689.5    20.0     3.11     3.95
2.89     YES
 L0020367         0   0.23400E-05  587860.0 4136687.4    20.1     3.11     3.95
2.89     YES
 L0020368         0   0.23400E-05  587868.3 4136685.3    20.2     3.11     3.95
2.89     YES
 L0020369         0   0.23400E-05  587876.5 4136683.2    20.2     3.11     3.95
2.89     YES
 L0020370         0   0.23400E-05  587884.7 4136681.1    20.3     3.11     3.95
2.89     YES
 L0020371         0   0.23400E-05  587893.0 4136679.0    20.3     3.11     3.95
2.89     YES
 L0020372         0   0.23400E-05  587901.2 4136676.9    20.2     3.11     3.95
2.89     YES
 L0020373         0   0.23400E-05  587909.5 4136674.8    20.2     3.11     3.95
2.89     YES
 L0020374         0   0.23400E-05  587917.7 4136672.7    20.2     3.11     3.95
2.89     YES
 L0020375         0   0.23400E-05  587925.9 4136670.6    20.2     3.11     3.95
2.89     YES
 L0020376         0   0.23400E-05  587933.8 4136669.1    20.2     3.11     3.95
2.89     YES
 L0020377         0   0.23400E-05  587935.9 4136677.3    20.2     3.11     3.95
2.89     YES
 L0020378         0   0.23400E-05  587938.0 4136685.6    20.2     3.11     3.95
2.89     YES
 L0020379         0   0.23400E-05  587940.1 4136693.8    20.2     3.11     3.95
2.89     YES
 L0020380         0   0.23400E-05  587942.2 4136702.0    20.2     3.11     3.95
2.89     YES
 L0020381         0   0.23400E-05  587944.4 4136710.3    20.2     3.11     3.95
2.89     YES
 L0020382         0   0.23400E-05  587946.5 4136718.5    20.3     3.11     3.95
2.89     YES
 L0020383         0   0.23400E-05  587948.6 4136726.7    20.3     3.11     3.95
2.89     YES
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0020384	0	0.23400E-05	587950.7	4136735.0	20.3	3.11	3.95	2.89	YES
L0020385	0	0.23400E-05	587952.8	4136743.2	20.3	3.11	3.95	2.89	YES
L0020386	0	0.23400E-05	587954.9	4136751.4	20.2	3.11	3.95	2.89	YES
L0020387	0	0.23400E-05	587957.0	4136759.7	20.2	3.11	3.95	2.89	YES
L0020388	0	0.23400E-05	587951.8	4136762.5	20.2	3.11	3.95	2.89	YES
L0020389	0	0.23400E-05	587943.3	4136762.9	20.1	3.11	3.95	2.89	YES
L0020390	0	0.23400E-05	587934.8	4136763.3	20.0	3.11	3.95	2.89	YES
L0020391	0	0.23400E-05	587926.3	4136763.8	19.9	3.11	3.95	2.89	YES
L0020392	0	0.23400E-05	587917.8	4136764.2	19.7	3.11	3.95	2.89	YES
L0020393	0	0.23400E-05	587909.3	4136764.7	19.6	3.11	3.95	2.89	YES
L0020394	0	0.23400E-05	587900.8	4136765.1	19.7	3.11	3.95	2.89	YES
L0020395	0	0.23400E-05	587892.3	4136765.6	19.8	3.11	3.95	2.89	YES
L0020396	0	0.23400E-05	587883.8	4136766.0	19.8	3.11	3.95	2.89	YES
L0020397	0	0.23400E-05	587875.4	4136766.4	19.8	3.11	3.95	2.89	YES
L0020398	0	0.23400E-05	587866.9	4136766.9	19.9	3.11	3.95		

2.89 YES							
L0020399	0	0.23400E-05	587858.4	4136767.7	20.0	3.11	3.95
2.89 YES							
L0020400	0	0.23400E-05	587850.2	4136769.7	20.1	3.11	3.95
2.89 YES							
L0020401	0	0.23400E-05	587841.9	4136771.7	20.3	3.11	3.95
2.89 YES							
L0020402	0	0.23400E-05	587833.7	4136773.8	20.4	3.11	3.95
2.89 YES							
L0020403	0	0.23400E-05	587825.4	4136775.8	20.5	3.11	3.95
2.89 YES							
L0020404	0	0.23400E-05	587817.2	4136777.8	20.7	3.11	3.95
2.89 YES							
L0020405	0	0.23400E-05	587808.9	4136779.8	20.7	3.11	3.95
2.89 YES							
L0020406	0	0.23400E-05	587800.6	4136781.8	20.6	3.11	3.95
2.89 YES							
L0020407	0	0.23400E-05	587792.4	4136783.9	20.6	3.11	3.95
2.89 YES							
L0020408	0	0.23400E-05	587784.1	4136785.9	20.6	3.11	3.95
2.89 YES							
L0020409	0	0.23400E-05	587775.9	4136787.9	20.5	3.11	3.95
2.89 YES							
L0020410	0	0.23400E-05	587767.6	4136789.9	20.5	3.11	3.95
2.89 YES							
L0020411	0	0.23400E-05	587759.4	4136792.0	20.5	3.11	3.95
2.89 YES							
L0020412	0	0.23400E-05	587751.1	4136794.0	20.5	3.11	3.95
2.89 YES							
L0020413	0	0.23400E-05	587742.9	4136796.0	20.5	3.11	3.95
2.89 YES							
L0020414	0	0.23400E-05	587734.6	4136798.0	20.5	3.11	3.95
2.89 YES							
L0020415	0	0.23400E-05	587726.3	4136800.0	20.5	3.11	3.95
2.89 YES							
L0020416	0	0.23400E-05	587718.1	4136802.1	20.5	3.11	3.95
2.89 YES							
L0020417	0	0.23400E-05	587709.8	4136804.1	20.4	3.11	3.95
2.89 YES							
L0020418	0	0.23400E-05	587701.6	4136806.1	20.3	3.11	3.95
2.89 YES							
L0020419	0	0.23400E-05	587693.3	4136808.1	20.2	3.11	3.95
2.89 YES							
L0020420	0	0.23400E-05	587685.1	4136810.2	20.4	3.11	3.95
2.89 YES							
L0020421	0	0.23400E-05	587676.8	4136812.2	20.7	3.11	3.95
2.89 YES							
L0020422	0	0.23400E-05	587669.2	4136813.1	21.0	3.11	3.95

2.89 YES
L0020423 0 0.23400E-05 587666.6 4136805.0 21.0 3.11 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0020424	0	0.23400E-05	587664.1	4136796.9	20.9	3.11	3.95	2.89	YES	
L0020425	0	0.23400E-05	587661.5	4136788.8	20.9	3.11	3.95	2.89	YES	
L0020426	0	0.23400E-05	587659.0	4136780.7	20.9	3.11	3.95	2.89	YES	
L0020427	0	0.23400E-05	587656.4	4136772.6	20.9	3.11	3.95	2.89	YES	
L0020428	0	0.23400E-05	587653.9	4136764.4	21.1	3.11	3.95	2.89	YES	
L0020429	0	0.23400E-05	587651.3	4136756.3	21.0	3.11	3.95	2.89	YES	
L0020430	0	0.23400E-05	587658.9	4136753.9	20.7	3.11	3.95	2.89	YES	
L0020431	0	0.23400E-05	587667.1	4136751.8	20.4	3.11	3.95	2.89	YES	
L0020432	0	0.23400E-05	587675.4	4136749.8	20.4	3.11	3.95	2.89	YES	
L0020433	0	0.23400E-05	587683.6	4136747.7	20.5	3.11	3.95	2.89	YES	
L0020434	0	0.23400E-05	587691.8	4136745.6	20.5	3.11	3.95	2.89	YES	
L0020435	0	0.23400E-05	587700.1	4136743.5	20.5	3.11	3.95	2.89	YES	
L0020436	0	0.23400E-05	587708.3	4136741.5	20.6	3.11	3.95			

2.89 YES							
L0020437	0	0.23400E-05	587716.6	4136739.4	20.6	3.11	3.95
2.89 YES							
L0020438	0	0.23400E-05	587724.8	4136737.3	20.7	3.11	3.95
2.89 YES							
L0020439	0	0.23400E-05	587733.1	4136735.3	20.7	3.11	3.95
2.89 YES							
L0020440	0	0.23400E-05	587741.3	4136733.2	20.8	3.11	3.95
2.89 YES							
L0020441	0	0.23400E-05	587749.6	4136731.1	20.8	3.11	3.95
2.89 YES							
L0020442	0	0.23400E-05	587757.8	4136729.0	20.9	3.11	3.95
2.89 YES							
L0020443	0	0.23400E-05	587766.0	4136727.0	20.9	3.11	3.95
2.89 YES							
L0020444	0	0.23400E-05	587774.3	4136724.9	20.9	3.11	3.95
2.89 YES							
L0020445	0	0.23400E-05	587782.5	4136722.8	20.9	3.11	3.95
2.89 YES							
L0020446	0	0.23400E-05	587790.8	4136720.8	20.9	3.11	3.95
2.89 YES							
L0020447	0	0.23400E-05	587799.0	4136718.7	20.7	3.11	3.95
2.89 YES							
L0020448	0	0.23400E-05	587807.3	4136716.6	20.6	3.11	3.95
2.89 YES							
L0020449	0	0.23400E-05	587815.5	4136714.6	20.4	3.11	3.95
2.89 YES							
L0020450	0	0.23400E-05	587823.8	4136712.5	20.3	3.11	3.95
2.89 YES							
L0020451	0	0.23400E-05	587832.0	4136710.4	20.2	3.11	3.95
2.89 YES							
L0020452	0	0.23400E-05	587840.2	4136708.3	20.2	3.11	3.95
2.89 YES							
L0020453	0	0.23400E-05	587848.5	4136706.3	20.1	3.11	3.95
2.89 YES							
L0020454	0	0.23400E-05	587856.7	4136704.2	20.1	3.11	3.95
2.89 YES							
L0020455	0	0.23400E-05	587865.0	4136702.1	20.1	3.11	3.95
2.89 YES							
L0020456	0	0.23400E-05	587873.2	4136700.1	20.2	3.11	3.95
2.89 YES							
L0020457	0	0.23400E-05	587881.5	4136698.0	20.2	3.11	3.95
2.89 YES							
L0020458	0	0.23400E-05	587889.7	4136695.9	20.3	3.11	3.95
2.89 YES							
L0020459	0	0.23400E-05	587897.9	4136693.9	20.3	3.11	3.95
2.89 YES							
L0020460	0	0.23400E-05	587906.2	4136691.8	20.2	3.11	3.95

```
2.89     YES
 L0020461         0   0.23400E-05  587914.4 4136689.7    20.2     3.11     3.95
2.89     YES
 L0020462         0   0.23400E-05  587922.7 4136687.6    20.2     3.11     3.95
2.89     YES
 L0020463         0   0.23400E-05  587926.9 4136692.4    20.2     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0020464         0   0.23400E-05  587929.0 4136700.6    20.2     3.11     3.95
2.89     YES
 L0020465         0   0.23400E-05  587931.2 4136708.8    20.2     3.11     3.95
2.89     YES
 L0020466         0   0.23400E-05  587933.4 4136717.1    20.2     3.11     3.95
2.89     YES
 L0020467         0   0.23400E-05  587935.5 4136725.3    20.2     3.11     3.95
2.89     YES
 L0020468         0   0.23400E-05  587937.7 4136733.5    20.3     3.11     3.95
2.89     YES
 L0020469         0   0.23400E-05  587939.8 4136741.7    20.3     3.11     3.95
2.89     YES
 L0020470         0   0.23400E-05  587941.4 4136749.5    20.2     3.11     3.95
2.89     YES
 L0020471         0   0.23400E-05  587932.9 4136750.1    20.1     3.11     3.95
2.89     YES
 L0020472         0   0.23400E-05  587924.5 4136750.7    20.0     3.11     3.95
2.89     YES
 L0020473         0   0.23400E-05  587916.0 4136751.2    19.8     3.11     3.95
2.89     YES
 L0020474         0   0.23400E-05  587907.5 4136751.8    19.8     3.11     3.95
```

2.89 YES							
L0020475	0	0.23400E-05	587899.0	4136752.4	19.8	3.11	3.95
2.89 YES							
L0020476	0	0.23400E-05	587890.5	4136752.9	19.9	3.11	3.95
2.89 YES							
L0020477	0	0.23400E-05	587882.1	4136753.5	19.9	3.11	3.95
2.89 YES							
L0020478	0	0.23400E-05	587873.6	4136754.0	19.9	3.11	3.95
2.89 YES							
L0020479	0	0.23400E-05	587865.1	4136754.6	19.9	3.11	3.95
2.89 YES							
L0020480	0	0.23400E-05	587856.6	4136755.2	20.1	3.11	3.95
2.89 YES							
L0020481	0	0.23400E-05	587848.4	4136757.1	20.2	3.11	3.95
2.89 YES							
L0020482	0	0.23400E-05	587840.1	4136759.2	20.4	3.11	3.95
2.89 YES							
L0020483	0	0.23400E-05	587831.9	4136761.2	20.5	3.11	3.95
2.89 YES							
L0020484	0	0.23400E-05	587823.6	4136763.3	20.7	3.11	3.95
2.89 YES							
L0020485	0	0.23400E-05	587815.4	4136765.4	20.8	3.11	3.95
2.89 YES							
L0020486	0	0.23400E-05	587807.1	4136767.4	20.8	3.11	3.95
2.89 YES							
L0020487	0	0.23400E-05	587798.9	4136769.5	20.8	3.11	3.95
2.89 YES							
L0020488	0	0.23400E-05	587790.6	4136771.6	20.8	3.11	3.95
2.89 YES							
L0020489	0	0.23400E-05	587782.4	4136773.7	20.7	3.11	3.95
2.89 YES							
L0020490	0	0.23400E-05	587774.2	4136775.7	20.7	3.11	3.95
2.89 YES							
L0020491	0	0.23400E-05	587765.9	4136777.8	20.6	3.11	3.95
2.89 YES							
L0020492	0	0.23400E-05	587757.7	4136779.9	20.6	3.11	3.95
2.89 YES							
L0020493	0	0.23400E-05	587749.4	4136781.9	20.6	3.11	3.95
2.89 YES							
L0020494	0	0.23400E-05	587741.2	4136784.0	20.6	3.11	3.95
2.89 YES							
L0020495	0	0.23400E-05	587732.9	4136786.1	20.6	3.11	3.95
2.89 YES							
L0020496	0	0.23400E-05	587724.7	4136788.1	20.5	3.11	3.95
2.89 YES							
L0020497	0	0.23400E-05	587716.4	4136790.2	20.5	3.11	3.95
2.89 YES							
L0020498	0	0.23400E-05	587708.2	4136792.3	20.4	3.11	3.95

```
2.89     YES
 L0020499         0   0.23400E-05  587700.0 4136794.3    20.4     3.11     3.95
2.89     YES
 L0020500         0   0.23400E-05  587691.7 4136796.4    20.2     3.11     3.95
2.89     YES
 L0020501         0   0.23400E-05  587683.5 4136798.5    20.5     3.11     3.95
2.89     YES
 L0020502         0   0.23400E-05  587678.1 4136795.2    20.6     3.11     3.95
2.89     YES
 L0020503         0   0.23400E-05  587675.2 4136787.2    20.6     3.11     3.95
2.89     YES
```


*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020504	0	0.23400E-05	587672.3	4136779.2	20.6	3.11	3.95	2.89	YES	
L0020505	0	0.23400E-05	587669.5	4136771.2	20.5	3.11	3.95	2.89	YES	
L0020506	0	0.23400E-05	587670.4	4136765.2	20.4	3.11	3.95	2.89	YES	
L0020507	0	0.23400E-05	587678.6	4136763.2	20.5	3.11	3.95	2.89	YES	
L0020508	0	0.23400E-05	587686.9	4136761.1	20.6	3.11	3.95	2.89	YES	
L0020509	0	0.23400E-05	587695.1	4136759.1	20.7	3.11	3.95	2.89	YES	
L0020510	0	0.23400E-05	587703.4	4136757.0	20.6	3.11	3.95	2.89	YES	
L0020511	0	0.23400E-05	587711.6	4136755.0	20.6	3.11	3.95	2.89	YES	
L0020512	0	0.23400E-05	587719.9	4136752.9	20.7	3.11	3.95	2.89	YES	

2.89 YES							
L0020513	0	0.23400E-05	587728.1	4136750.8	20.7	3.11	3.95
2.89 YES							
L0020514	0	0.23400E-05	587736.4	4136748.8	20.8	3.11	3.95
2.89 YES							
L0020515	0	0.23400E-05	587744.6	4136746.7	20.8	3.11	3.95
2.89 YES							
L0020516	0	0.23400E-05	587752.9	4136744.7	20.9	3.11	3.95
2.89 YES							
L0020517	0	0.23400E-05	587761.1	4136742.6	20.9	3.11	3.95
2.89 YES							
L0020518	0	0.23400E-05	587769.4	4136740.6	21.0	3.11	3.95
2.89 YES							
L0020519	0	0.23400E-05	587777.6	4136738.5	21.1	3.11	3.95
2.89 YES							
L0020520	0	0.23400E-05	587785.9	4136736.5	21.1	3.11	3.95
2.89 YES							
L0020521	0	0.23400E-05	587794.1	4136734.4	21.1	3.11	3.95
2.89 YES							
L0020522	0	0.23400E-05	587802.4	4136732.3	20.9	3.11	3.95
2.89 YES							
L0020523	0	0.23400E-05	587810.6	4136730.3	20.8	3.11	3.95
2.89 YES							
L0020524	0	0.23400E-05	587818.9	4136728.2	20.6	3.11	3.95
2.89 YES							
L0020525	0	0.23400E-05	587827.1	4136726.2	20.5	3.11	3.95
2.89 YES							
L0020526	0	0.23400E-05	587835.3	4136724.1	20.4	3.11	3.95
2.89 YES							
L0020527	0	0.23400E-05	587843.6	4136722.1	20.3	3.11	3.95
2.89 YES							
L0020528	0	0.23400E-05	587851.8	4136720.0	20.2	3.11	3.95
2.89 YES							
L0020529	0	0.23400E-05	587860.1	4136717.9	20.1	3.11	3.95
2.89 YES							
L0020530	0	0.23400E-05	587868.3	4136715.9	20.1	3.11	3.95
2.89 YES							
L0020531	0	0.23400E-05	587876.6	4136713.8	20.1	3.11	3.95
2.89 YES							
L0020532	0	0.23400E-05	587884.8	4136711.8	20.2	3.11	3.95
2.89 YES							
L0020533	0	0.23400E-05	587893.1	4136709.7	20.2	3.11	3.95
2.89 YES							
L0020534	0	0.23400E-05	587901.3	4136707.7	20.2	3.11	3.95
2.89 YES							
L0020535	0	0.23400E-05	587909.6	4136705.6	20.2	3.11	3.95
2.89 YES							
L0020536	0	0.23400E-05	587917.8	4136703.5	20.2	3.11	3.95

2.89 YES
L0020537 0 0.23400E-05 587920.6 4136710.9 20.2 3.11 3.95
2.89 YES
L0020538 0 0.23400E-05 587922.9 4136719.1 20.2 3.11 3.95
2.89 YES
L0020539 0 0.23400E-05 587925.3 4136727.2 20.1 3.11 3.95
2.89 YES
L0020540 0 0.23400E-05 587927.6 4136735.4 20.2 3.11 3.95
2.89 YES
L0020541 0 0.23400E-05 587926.9 4136741.3 20.1 3.11 3.95
2.89 YES
L0020542 0 0.23400E-05 587918.4 4136741.4 19.9 3.11 3.95
2.89 YES
L0020543 0 0.23400E-05 587909.9 4136741.5 19.9 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020544	0	0.23400E-05	587901.4	4136741.5	19.9	3.11	3.95	2.89	YES	
L0020545	0	0.23400E-05	587892.9	4136741.6	20.0	3.11	3.95	2.89	YES	
L0020546	0	0.23400E-05	587884.4	4136741.7	20.0	3.11	3.95	2.89	YES	
L0020547	0	0.23400E-05	587875.9	4136741.7	19.9	3.11	3.95	2.89	YES	
L0020548	0	0.23400E-05	587867.4	4136741.8	19.9	3.11	3.95	2.89	YES	
L0020549	0	0.23400E-05	587858.9	4136741.9	20.1	3.11	3.95	2.89	YES	
L0020550	0	0.23400E-05	587850.4	4136742.1	20.2	3.11	3.95			

2.89	YES						
L0020551	0	0.23400E-05	587842.2	4136744.3	20.4	3.11	3.95
2.89	YES						
L0020552	0	0.23400E-05	587834.0	4136746.6	20.6	3.11	3.95
2.89	YES						
L0020553	0	0.23400E-05	587825.8	4136748.8	20.7	3.11	3.95
2.89	YES						
L0020554	0	0.23400E-05	587817.6	4136751.1	20.8	3.11	3.95
2.89	YES						
L0020555	0	0.23400E-05	587809.4	4136753.3	20.9	3.11	3.95
2.89	YES						
L0020556	0	0.23400E-05	587801.2	4136755.6	20.9	3.11	3.95
2.89	YES						
L0020557	0	0.23400E-05	587793.0	4136757.8	20.9	3.11	3.95
2.89	YES						
L0020558	0	0.23400E-05	587784.8	4136760.1	20.9	3.11	3.95
2.89	YES						
L0020559	0	0.23400E-05	587776.6	4136762.3	20.9	3.11	3.95
2.89	YES						
L0020560	0	0.23400E-05	587768.4	4136764.6	20.8	3.11	3.95
2.89	YES						
L0020561	0	0.23400E-05	587760.2	4136766.8	20.8	3.11	3.95
2.89	YES						
L0020562	0	0.23400E-05	587752.0	4136769.1	20.8	3.11	3.95
2.89	YES						
L0020563	0	0.23400E-05	587743.8	4136771.3	20.8	3.11	3.95
2.89	YES						
L0020564	0	0.23400E-05	587735.6	4136773.6	20.7	3.11	3.95
2.89	YES						
L0020565	0	0.23400E-05	587727.4	4136775.8	20.7	3.11	3.95
2.89	YES						
L0020566	0	0.23400E-05	587719.2	4136778.1	20.6	3.11	3.95
2.89	YES						
L0020567	0	0.23400E-05	587711.0	4136780.3	20.6	3.11	3.95
2.89	YES						
L0020568	0	0.23400E-05	587702.8	4136782.6	20.5	3.11	3.95
2.89	YES						
L0020569	0	0.23400E-05	587694.6	4136784.8	20.4	3.11	3.95
2.89	YES						
L0020570	0	0.23400E-05	587688.6	4136783.0	20.5	3.11	3.95
2.89	YES						
L0020571	0	0.23400E-05	587686.4	4136775.3	20.5	3.11	3.95
2.89	YES						
L0020572	0	0.23400E-05	587694.6	4136773.2	20.6	3.11	3.95
2.89	YES						
L0020573	0	0.23400E-05	587702.8	4136771.0	20.6	3.11	3.95
2.89	YES						
L0020574	0	0.23400E-05	587711.1	4136768.9	20.6	3.11	3.95

```
2.89     YES
 L0020575         0   0.23400E-05  587719.3 4136766.8    20.7     3.11     3.95
2.89     YES
 L0020576         0   0.23400E-05  587727.5 4136764.6    20.8     3.11     3.95
2.89     YES
 L0020577         0   0.23400E-05  587735.7 4136762.5    20.8     3.11     3.95
2.89     YES
 L0020578         0   0.23400E-05  587744.0 4136760.4    20.9     3.11     3.95
2.89     YES
 L0020579         0   0.23400E-05  587752.2 4136758.2    20.9     3.11     3.95
2.89     YES
 L0020580         0   0.23400E-05  587760.4 4136756.1    20.9     3.11     3.95
2.89     YES
 L0020581         0   0.23400E-05  587768.7 4136754.0    20.9     3.11     3.95
2.89     YES
 L0020582         0   0.23400E-05  587776.9 4136751.9    20.9     3.11     3.95
2.89     YES
 L0020583         0   0.23400E-05  587785.1 4136749.7    21.0     3.11     3.95
2.89     YES
```


*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0020584	0	0.23400E-05	587793.3	4136747.6	21.0	3.11	3.95	2.89	YES	
L0020585	0	0.23400E-05	587801.6	4136745.5	20.9	3.11	3.95	2.89	YES	
L0020586	0	0.23400E-05	587809.8	4136743.3	20.9	3.11	3.95	2.89	YES	
L0020587	0	0.23400E-05	587818.0	4136741.2	20.8	3.11	3.95	2.89	YES	
L0020588	0	0.23400E-05	587826.3	4136739.1	20.7	3.11	3.95			

```
2.89     YES
 L0020589         0   0.23400E-05  587834.5 4136736.9    20.6     3.11     3.95
2.89     YES
 L0020590         0   0.23400E-05  587842.7 4136734.8    20.4     3.11     3.95
2.89     YES
 L0020591         0   0.23400E-05  587850.9 4136732.7    20.2     3.11     3.95
2.89     YES
 L0020592         0   0.23400E-05  587859.2 4136730.5    20.1     3.11     3.95
2.89     YES
 L0020593         0   0.23400E-05  587867.4 4136728.4    20.0     3.11     3.95
2.89     YES
 L0020594         0   0.23400E-05  587875.6 4136726.3    20.1     3.11     3.95
2.89     YES
 L0020595         0   0.23400E-05  587883.8 4136724.1    20.1     3.11     3.95
2.89     YES
 L0020596         0   0.23400E-05  587892.1 4136722.0    20.1     3.11     3.95
2.89     YES
 L0020597         0   0.23400E-05  587900.3 4136719.9    20.1     3.11     3.95
2.89     YES
 L0020598         0   0.23400E-05  587908.5 4136717.7    20.1     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                          SOURCE IDs
 -----------                                          ----------


  ALL        L0019664    , L0019665    , L0019666    , L0019667    , L0019668    ,
L0019669    , L0019670    , L0019671    ,

             L0019672    , L0019673    , L0019674    , L0019675    , L0019676    ,
L0019677    , L0019678    , L0019679    ,

             L0019680    , L0019681    , L0019682    , L0019683    , L0019684    ,
L0019685    , L0019686    , L0019687    ,

             L0019688    , L0019689    , L0019690    , L0019691    , L0019692    ,
L0019693    , L0019694    , L0019695    ,
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L0019701 , L0019702 , L0019703 ,

L0019704 , L0019705 , L0019706 , L0019707 , L0019708 ,
L0019709 , L0019710 , L0019711 ,

L0019712 , L0019713 , L0019714 , L0019715 , L0019716 ,
L0019717 , L0019718 , L0019719 ,

L0019720 , L0019721 , L0019722 , L0019723 , L0019724 ,
L0019725 , L0019726 , L0019727 ,

L0019728 , L0019729 , L0019730 , L0019731 , L0019732 ,
L0019733 , L0019734 , L0019735 ,

L0019736 , L0019737 , L0019738 , L0019739 , L0019740 ,
L0019741 , L0019742 , L0019743 ,

L0019744 , L0019745 , L0019746 , L0019747 , L0019748 ,
L0019749 , L0019750 , L0019751 ,

L0019752 , L0019753 , L0019754 , L0019755 , L0019756 ,
L0019757 , L0019758 , L0019759 ,

L0019760 , L0019761 , L0019762 , L0019763 , L0019764 ,
L0019765 , L0019766 , L0019767 ,

L0019768 , L0019769 , L0019770 , L0019771 , L0019772 ,
L0019773 , L0019774 , L0019775 ,

L0019776 , L0019777 , L0019778 , L0019779 , L0019780 ,
L0019781 , L0019782 , L0019783 ,

L0019784 , L0019785 , L0019786 , L0019787 , L0019788 ,
L0019789 , L0019790 , L0019791 ,

L0019792 , L0019793 , L0019794 , L0019795 , L0019796 ,
L0019797 , L0019798 , L0019799 ,

L0019800 , L0019801 , L0019802 , L0019803 , L0019804 ,
L0019805 , L0019806 , L0019807 ,

L0019808 , L0019809 , L0019810 , L0019811 , L0019812 ,
L0019813 , L0019814 , L0019815 ,

L0019816 , L0019817 , L0019818 , L0019819 , L0019820 ,
L0019821 , L0019822 , L0019823 ,

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                          *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID   SOURCE IDs
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             L0019824   , L0019825   , L0019826   , L0019827   , L0019828   , L0019829   , L0019830   , L0019831   ,

             L0019832   , L0019833   , L0019834   , L0019835   , L0019836   , L0019837   , L0019838   , L0019839   ,

             L0019840   , L0019841   , L0019842   , L0019843   , L0019844   , L0019845   , L0019846   , L0019847   ,

             L0019848   , L0019849   , L0019850   , L0019851   , L0019852   , L0019853   , L0019854   , L0019855   ,

             L0019856   , L0019857   , L0019858   , L0019859   , L0019860   , L0019861   , L0019862   , L0019863   ,

             L0019864   , L0019865   , L0019866   , L0019867   , L0019868   , L0019869   , L0019870   , L0019871   ,

             L0019872   , L0019873   , L0019874   , L0019875   , L0019876   , L0019877   , L0019878   , L0019879   ,

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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE  28
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                          SOURCE IDs
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*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** ***
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINING SOURCE GROUPS
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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
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                                  PAGE  31
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                              SOURCE IDs
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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE  32
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP                                    SOURCE IDs
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↟ *** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** ***
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES
***

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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE  34
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINED AS URBAN SOURCES
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs

L0020144 , L0020145 , L0020146 , L0020147 , L0020148 ,
L0020149 , L0020150 , L0020151 ,

L0020152 , L0020153 , L0020154 , L0020155 , L0020156 ,
L0020157 , L0020158 , L0020159 ,

L0020160 , L0020161 , L0020162 , L0020163 , L0020164 ,
L0020165 , L0020166 , L0020167 ,

L0020168 , L0020169 , L0020170 , L0020171 , L0020172 ,
L0020173 , L0020174 , L0020175 ,

L0020176 , L0020177 , L0020178 , L0020179 , L0020180 ,
L0020181 , L0020182 , L0020183 ,

L0020184 , L0020185 , L0020186 , L0020187 , L0020188 ,

L0020189 , L0020190 , L0020191 ,

L0020192 , L0020193 , L0020194 , L0020195 , L0020196 ,
L0020197 , L0020198 , L0020199 ,

L0020200 , L0020201 , L0020202 , L0020203 , L0020204 ,
L0020205 , L0020206 , L0020207 ,

L0020208 , L0020209 , L0020210 , L0020211 , L0020212 ,
L0020213 , L0020214 , L0020215 ,

L0020216 , L0020217 , L0020218 , L0020219 , L0020220 ,
L0020221 , L0020222 , L0020223 ,

L0020224 , L0020225 , L0020226 , L0020227 , L0020228 ,
L0020229 , L0020230 , L0020231 ,

L0020232 , L0020233 , L0020234 , L0020235 , L0020236 ,
L0020237 , L0020238 , L0020239 ,

L0020240 , L0020241 , L0020242 , L0020243 , L0020244 ,
L0020245 , L0020246 , L0020247 ,

L0020248 , L0020249 , L0020250 , L0020251 , L0020252 ,
L0020253 , L0020254 , L0020255 ,

L0020256 , L0020257 , L0020258 , L0020259 , L0020260 ,
L0020261 , L0020262 , L0020263 ,

L0020264 , L0020265 , L0020266 , L0020267 , L0020268 ,
L0020269 , L0020270 , L0020271 ,

L0020272 , L0020273 , L0020274 , L0020275 , L0020276 ,
L0020277 , L0020278 , L0020279 ,

L0020280 , L0020281 , L0020282 , L0020283 , L0020284 ,
L0020285 , L0020286 , L0020287 ,

L0020288 , L0020289 , L0020290 , L0020291 , L0020292 ,
L0020293 , L0020294 , L0020295 ,

L0020296 , L0020297 , L0020298 , L0020299 , L0020300 ,
L0020301 , L0020302 , L0020303 ,
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
		L0020304 , L0020305 , L0020306 , L0020307 , L0020308 , L0020309 , L0020310 , L0020311 ,
		L0020312 , L0020313 , L0020314 , L0020315 , L0020316 , L0020317 , L0020318 , L0020319 ,
		L0020320 , L0020321 , L0020322 , L0020323 , L0020324 , L0020325 , L0020326 , L0020327 ,
		L0020328 , L0020329 , L0020330 , L0020331 , L0020332 , L0020333 , L0020334 , L0020335 ,
		L0020336 , L0020337 , L0020338 , L0020339 , L0020340 , L0020341 , L0020342 , L0020343 ,
		L0020344 , L0020345 , L0020346 , L0020347 , L0020348 , L0020349 , L0020350 , L0020351 ,
		L0020352 , L0020353 , L0020354 , L0020355 , L0020356 , L0020357 , L0020358 , L0020359 ,
		L0020360 , L0020361 , L0020362 , L0020363 , L0020364 , L0020365 , L0020366 , L0020367 ,
		L0020368 , L0020369 , L0020370 , L0020371 , L0020372 , L0020373 , L0020374 , L0020375 ,
		L0020376 , L0020377 , L0020378 , L0020379 , L0020380 , L0020381 , L0020382 , L0020383 ,
		L0020384 , L0020385 , L0020386 , L0020387 , L0020388 , L0020389 , L0020390 , L0020391 ,
		L0020392 , L0020393 , L0020394 , L0020395 , L0020396 , L0020397 , L0020398 , L0020399 ,
		L0020400 , L0020401 , L0020402 , L0020403 , L0020404 ,

L0020405 , L0020406 , L0020407 ,

L0020408 , L0020409 , L0020410 , L0020411 , L0020412 ,
L0020413 , L0020414 , L0020415 ,

L0020416 , L0020417 , L0020418 , L0020419 , L0020420 ,
L0020421 , L0020422 , L0020423 ,

L0020424 , L0020425 , L0020426 , L0020427 , L0020428 ,
L0020429 , L0020430 , L0020431 ,

L0020432 , L0020433 , L0020434 , L0020435 , L0020436 ,
L0020437 , L0020438 , L0020439 ,

L0020440 , L0020441 , L0020442 , L0020443 , L0020444 ,
L0020445 , L0020446 , L0020447 ,

L0020448 , L0020449 , L0020450 , L0020451 , L0020452 ,
L0020453 , L0020454 , L0020455 ,

L0020456 , L0020457 , L0020458 , L0020459 , L0020460 ,
L0020461 , L0020462 , L0020463 ,
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** ***
*** 20:43:19

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES
***

URBAN ID	URBAN POP	SOURCE IDs

L0020464 , L0020465 , L0020466 , L0020467 , L0020468 ,
L0020469 , L0020470 , L0020471 ,

L0020472 , L0020473 , L0020474 , L0020475 , L0020476 ,
L0020477 , L0020478 , L0020479 ,

L0020480 , L0020481 , L0020482 , L0020483 , L0020484 ,
L0020485 , L0020486 , L0020487 ,

L0020488 , L0020489 , L0020490 , L0020491 , L0020492 ,

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L0020493    , L0020494    , L0020495    ,

             L0020496    , L0020497    , L0020498    , L0020499    , L0020500    ,
L0020501    , L0020502    , L0020503    ,

             L0020504    , L0020505    , L0020506    , L0020507    , L0020508    ,
L0020509    , L0020510    , L0020511    ,

             L0020512    , L0020513    , L0020514    , L0020515    , L0020516    ,
L0020517    , L0020518    , L0020519    ,

             L0020520    , L0020521    , L0020522    , L0020523    , L0020524    ,
L0020525    , L0020526    , L0020527    ,

             L0020528    , L0020529    , L0020530    , L0020531    , L0020532    ,
L0020533    , L0020534    , L0020535    ,

             L0020536    , L0020537    , L0020538    , L0020539    , L0020540    ,
L0020541    , L0020542    , L0020543    ,

             L0020544    , L0020545    , L0020546    , L0020547    , L0020548    ,
L0020549    , L0020550    , L0020551    ,

             L0020552    , L0020553    , L0020554    , L0020555    , L0020556    ,
L0020557    , L0020558    , L0020559    ,

             L0020560    , L0020561    , L0020562    , L0020563    , L0020564    ,
L0020565    , L0020566    , L0020567    ,

             L0020568    , L0020569    , L0020570    , L0020571    , L0020572    ,
L0020573    , L0020574    , L0020575    ,

             L0020576    , L0020577    , L0020578    , L0020579    , L0020580    ,
L0020581    , L0020582    , L0020583    ,

             L0020584    , L0020585    , L0020586    , L0020587    , L0020588    ,
L0020589    , L0020590    , L0020591    ,

             L0020592    , L0020593    , L0020594    , L0020595    , L0020596    ,
L0020597    , L0020598    ,
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                         ***        20:43:19

                                    PAGE  38
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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     ( 587572.7, 4136390.2,      23.7,      23.7,       0.0);         ( 587634.5,
4136390.2,      23.5,      23.5,       0.0);
     ( 587696.2, 4136390.2,      23.1,      23.1,       0.0);         ( 587758.0,
4136390.2,      22.8,      22.8,       0.0);
     ( 587819.7, 4136390.2,      23.0,      23.0,       0.0);         ( 587881.4,
4136390.2,      22.8,      22.8,       0.0);
     ( 587943.2, 4136390.2,      22.4,      22.4,       0.0);         ( 588066.7,
4136390.2,      21.8,      21.8,       0.0);
     ( 588128.4, 4136390.2,      21.8,      21.8,       0.0);         ( 588190.1,
4136390.2,      21.3,      21.3,       0.0);
     ( 587511.0, 4136443.3,      23.8,      23.8,       0.0);         ( 587572.7,
4136443.3,      23.3,      23.3,       0.0);
     ( 587634.5, 4136443.3,      22.9,      22.9,       0.0);         ( 587696.2,
4136443.3,      22.6,      22.6,       0.0);
     ( 587758.0, 4136443.3,      22.2,      22.2,       0.0);         ( 587819.7,
4136443.3,      21.9,      21.9,       0.0);
     ( 587881.4, 4136443.3,      21.8,      21.8,       0.0);         ( 587943.2,
4136443.3,      21.9,      21.9,       0.0);
     ( 588004.9, 4136443.3,      21.6,      21.6,       0.0);         ( 588066.7,
4136443.3,      21.6,      21.6,       0.0);
     ( 588128.4, 4136443.3,      22.0,      22.0,       0.0);         ( 588190.1,
4136443.3,      21.6,      21.6,       0.0);
     ( 588251.9, 4136443.3,      21.7,      21.7,       0.0);         ( 587387.5,
4136496.4,      23.7,      23.7,       0.0);
     ( 587449.3, 4136496.4,      23.6,      23.6,       0.0);         ( 587511.0,
4136496.4,      23.8,      23.8,       0.0);
     ( 587572.7, 4136496.4,      22.8,      22.8,       0.0);         ( 587634.5,
4136496.4,      22.4,      22.4,       0.0);
     ( 587696.2, 4136496.4,      22.3,      22.3,       0.0);         ( 587758.0,
4136496.4,      22.2,      22.2,       0.0);
     ( 587819.7, 4136496.4,      21.7,      21.7,       0.0);         ( 587881.4,
4136496.4,      21.5,      21.5,       0.0);
     ( 587943.2, 4136496.4,      21.5,      21.5,       0.0);         ( 588004.9,
4136496.4,      21.1,      21.1,       0.0);
     ( 588066.7, 4136496.4,      20.9,      20.9,       0.0);         ( 588128.4,
4136496.4,      21.4,      21.4,       0.0);
     ( 588190.1, 4136496.4,      21.5,      21.5,       0.0);         ( 588251.9,
4136496.4,      21.1,      21.1,       0.0);
     ( 587387.5, 4136549.5,      23.7,      23.7,       0.0);         ( 587449.3,
4136549.5,      23.3,      23.3,       0.0);
     ( 587511.0, 4136549.5,      23.2,      23.2,       0.0);         ( 587572.7,
4136549.5,      22.8,      22.8,       0.0);
     ( 587634.5, 4136549.5,      22.3,      22.3,       0.0);         ( 587696.2,
4136549.5,      22.4,      22.4,       0.0);
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     ( 587758.0, 4136549.5,      22.0,      22.0,       0.0);         ( 587819.7,
4136549.5,      21.7,      21.7,       0.0);
     ( 587881.4, 4136549.5,      21.3,      21.3,       0.0);         ( 587943.2,
4136549.5,      21.4,      21.4,       0.0);
     ( 588004.9, 4136549.5,      21.3,      21.3,       0.0);         ( 588066.7,
4136549.5,      21.3,      21.3,       0.0);
     ( 588128.4, 4136549.5,      21.2,      21.2,       0.0);         ( 588251.9,
4136549.5,      20.8,      20.8,       0.0);
     ( 588313.6, 4136549.5,      20.5,      20.5,       0.0);         ( 587387.5,
4136602.6,      23.4,      23.4,       0.0);
     ( 587449.3, 4136602.6,      22.9,      22.9,       0.0);         ( 587511.0,
4136602.6,      22.8,      22.8,       0.0);
     ( 587572.7, 4136602.6,      22.5,      22.5,       0.0);         ( 587634.5,
4136602.6,      21.9,      21.9,       0.0);
     ( 587696.2, 4136602.6,      21.9,      21.9,       0.0);         ( 587758.0,
4136602.6,      21.7,      21.7,       0.0);
     ( 587819.7, 4136602.6,      21.2,      21.2,       0.0);         ( 587881.4,
4136602.6,      21.3,      21.3,       0.0);
     ( 588066.7, 4136602.6,      20.5,      20.5,       0.0);         ( 588128.4,
4136602.6,      20.6,      20.6,       0.0);
     ( 588190.1, 4136602.6,      20.6,      20.6,       0.0);         ( 588251.9,
4136602.6,      20.6,      20.6,       0.0);
     ( 588313.6, 4136602.6,      20.0,      20.0,       0.0);         ( 588375.4,
4136602.6,      20.0,      20.0,       0.0);
     ( 587264.0, 4136655.7,      23.8,      23.8,       0.0);         ( 587387.5,
4136655.7,      23.4,      23.4,       0.0);
     ( 587449.3, 4136655.7,      22.5,      22.5,       0.0);         ( 587511.0,
4136655.7,      22.2,      22.2,       0.0);
     ( 587572.7, 4136655.7,      22.4,      22.4,       0.0);         ( 587634.5,
4136655.7,      21.9,      21.9,       0.0);
     ( 587696.2, 4136655.7,      21.9,      21.9,       0.0);         ( 588004.9,
4136655.7,      20.1,      20.1,       0.0);
     ( 588066.7, 4136655.7,      20.1,      20.1,       0.0);         ( 588128.4,
4136655.7,      20.4,      20.4,       0.0);
     ( 588190.1, 4136655.7,      20.3,      20.3,       0.0);         ( 588251.9,
4136655.7,      19.8,      19.8,       0.0);
     ( 588313.6, 4136655.7,      19.9,      19.9,       0.0);         ( 588375.4,
4136655.7,      19.4,      19.4,       0.0);
     ( 587264.0, 4136708.8,      23.9,      23.9,       0.0);         ( 587387.5,
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     ( 587449.3, 4136708.8,      22.3,      22.3,       0.0);         ( 588004.9,
4136708.8,      20.2,      20.2,       0.0);
     ( 588066.7, 4136708.8,      20.2,      20.2,       0.0);         ( 588128.4,
4136708.8,      20.0,      20.0,       0.0);
     ( 588190.1, 4136708.8,      19.8,      19.8,       0.0);         ( 588251.9,
4136708.8,      19.6,      19.6,       0.0);
↟ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(588313.6, 4136708.8, 19.7, 19.7, 0.0); (588375.4, 4136708.8, 19.4, 19.4, 0.0);
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(587511.0, 4136761.9, 21.4, 21.4, 0.0); (587572.7, 4136761.9, 21.6, 21.6, 0.0);
(588066.7, 4136761.9, 20.0, 20.0, 0.0); (588128.4, 4136761.9, 19.6, 19.6, 0.0);
(588190.1, 4136761.9, 19.6, 19.6, 0.0); (588251.9, 4136761.9, 19.6, 19.6, 0.0);
(588313.6, 4136761.9, 19.7, 19.7, 0.0); (588375.4, 4136761.9, 18.9, 18.9, 0.0);
(587325.8, 4136815.0, 22.2, 22.2, 0.0); (587387.5, 4136815.0, 21.5, 21.5, 0.0);
(587449.3, 4136815.0, 21.4, 21.4, 0.0); (587511.0, 4136815.0, 21.2, 21.2, 0.0);
(587572.7, 4136815.0, 21.0, 21.0, 0.0); (587325.8, 4136868.2, 22.3, 22.3, 0.0);
(587387.5, 4136868.2, 21.6, 21.6, 0.0); (587449.3, 4136868.2, 21.5, 21.5, 0.0);
(587511.0, 4136868.2, 21.1, 21.1, 0.0); (587572.7, 4136868.2, 20.7, 20.7, 0.0);
(587758.0, 4136868.2, 19.7, 19.7, 0.0); (587819.7, 4136868.2, 19.8, 19.8, 0.0);
(587881.4, 4136868.2, 19.3, 19.3, 0.0); (588190.1, 4136868.2, 18.9, 18.9, 0.0);
(588251.9, 4136868.2, 18.7, 18.7, 0.0); (588313.6, 4136868.2, 18.9, 18.9, 0.0);
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(587449.3, 4136921.3, 20.6, 20.6, 0.0); (587511.0, 4136921.3, 20.4, 20.4, 0.0);
(587572.7, 4136921.3, 20.5, 20.5, 0.0); (587634.5, 4136921.3, 20.2, 20.2, 0.0);
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(587819.7, 4136921.3, 19.3, 19.3, 0.0); (587881.4, 4136921.3, 19.4, 19.4, 0.0);
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(588313.6, 4136921.3, 18.8, 18.8, 0.0); (588375.4, 4136921.3, 18.8, 18.8, 0.0);
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(587449.3, 4136974.4, 20.3, 20.3, 0.0); (587511.0, 4136974.4, 20.4, 20.4, 0.0);
(587572.7, 4136974.4, 20.2, 20.2, 0.0); (587634.5, 4136974.4, 19.7, 19.7, 0.0);
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(588313.6, 4136974.4, 18.5, 18.5, 0.0); (588375.4, 4136974.4, 17.5, 17.5, 0.0);
(588437.1, 4136974.4, 17.8, 17.8, 0.0); (587387.5, 4137027.5, 20.6, 20.6, 0.0);
(587449.3, 4137027.5, 20.0, 20.0, 0.0); (587511.0, 4137027.5, 20.0, 20.0, 0.0);
(587572.7, 4137027.5, 20.0, 20.0, 0.0); (587634.5, 4137027.5, 19.3, 19.3, 0.0);
(587696.2, 4137027.5, 19.1, 19.1, 0.0); (587758.0, 4137027.5, 18.9, 18.9, 0.0);
(587819.7, 4137027.5, 18.9, 18.9, 0.0); (587881.4, 4137027.5, 18.6, 18.6, 0.0);
(588190.1, 4137027.5, 18.1, 18.1, 0.0); (588251.9, 4137027.5, 18.2, 18.2, 0.0);
(588313.6, 4137027.5, 19.1, 19.1, 0.0); (588375.4, 4137027.5, 17.7, 17.7, 0.0);
(588437.1, 4137027.5, 18.4, 18.4, 0.0); (587449.3, 4137080.6, 19.6, 19.6, 0.0);
(587511.0, 4137080.6, 19.6, 19.6, 0.0); (587572.7, 4137080.6, 19.7, 19.7, 0.0);
(587634.5, 4137080.6, 18.9, 18.9, 0.0); (587696.2, 4137080.6, 18.7, 18.7, 0.0);
(587758.0, 4137080.6, 18.5, 18.5, 0.0); (587819.7, 4137080.6, 18.4, 18.4, 0.0);
(587881.4, 4137080.6, 18.2, 18.2, 0.0); (588190.1, 4137080.6, 17.9, 17.9, 0.0);
(588251.9, 4137080.6, 18.9, 18.9, 0.0); (588313.6, 4137080.6, 19.1, 19.1, 0.0);
(588375.4, 4137080.6, 19.0, 19.0, 0.0); (588437.1, 4137080.6, 19.1, 19.1, 0.0);

(587449.3, 4137133.7, 19.1, 19.1, 0.0); (587511.0, 4137133.7, 19.0, 19.0, 0.0);
(587572.7, 4137133.7, 18.9, 18.9, 0.0); (587634.5, 4137133.7, 18.8, 18.8, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(587696.2, 4137133.7, 18.5, 18.5, 0.0); (587758.0, 4137133.7, 18.1, 18.1, 0.0);
(588190.1, 4137133.7, 17.2, 17.2, 0.0); (588251.9, 4137133.7, 17.0, 17.0, 0.0);
(588313.6, 4137133.7, 17.0, 17.0, 0.0); (588375.4, 4137133.7, 16.8, 16.8, 0.0);
(588437.1, 4137133.7, 16.7, 16.7, 0.0); (587449.3, 4137186.8, 19.1, 19.1, 0.0);
(587511.0, 4137186.8, 19.0, 19.0, 0.0); (587572.7, 4137186.8, 18.5, 18.5, 0.0);
(587634.5, 4137186.8, 18.3, 18.3, 0.0); (587758.0, 4137186.8, 17.9, 17.9, 0.0);
(587819.7, 4137186.8, 17.5, 17.5, 0.0); (587881.4, 4137186.8, 17.4, 17.4, 0.0);
(587943.2, 4137186.8, 17.4, 17.4, 0.0); (588004.9, 4137186.8, 17.3, 17.3, 0.0);
(588066.7, 4137186.8, 17.3, 17.3, 0.0); (588128.4, 4137186.8, 17.4, 17.4, 0.0);
(588190.1, 4137186.8, 17.2, 17.2, 0.0); (588313.6, 4137186.8, 16.7, 16.7, 0.0);
(588375.4, 4137186.8, 16.3, 16.3, 0.0); (587634.5, 4137239.9, 17.7, 17.7, 0.0);
(587696.2, 4137239.9, 17.7, 17.7, 0.0); (587758.0, 4137239.9, 17.6, 17.6, 0.0);
(587819.7, 4137239.9, 17.2, 17.2, 0.0); (587881.4, 4137239.9, 17.2, 17.2, 0.0);
(587943.2, 4137239.9, 17.1, 17.1, 0.0); (588004.9, 4137239.9, 16.9, 16.9, 0.0);
(588066.7, 4137239.9, 16.9, 16.9, 0.0); (588128.4, 4137239.9, 17.2, 17.2, 0.0);
(588190.1, 4137239.9, 17.0, 17.0, 0.0); (588251.9, 4137239.9, 16.8, 16.8, 0.0);

```
     ( 588313.6, 4137239.9,      17.0,      17.0,       0.0);         ( 588375.4,
4137239.9,      16.6,      16.6,       0.0);
     ( 587696.2, 4137293.0,      17.2,      17.2,       0.0);         ( 587758.0,
4137293.0,      17.3,      17.3,       0.0);
     ( 587819.7, 4137293.0,      17.1,      17.1,       0.0);         ( 587881.4,
4137293.0,      17.4,      17.4,       0.0);
     ( 587943.2, 4137293.0,      17.4,      17.4,       0.0);         ( 588004.9,
4137293.0,      16.4,      16.4,       0.0);
     ( 588066.7, 4137293.0,      16.0,      16.0,       0.0);         ( 588128.4,
4137293.0,      16.6,      16.6,       0.0);
     ( 588190.1, 4137293.0,      16.7,      16.7,       0.0);         ( 588251.9,
4137293.0,      16.6,      16.6,       0.0);
     ( 588313.6, 4137293.0,      16.6,      16.6,       0.0);         ( 587758.0,
4137346.1,      17.1,      17.1,       0.0);
     ( 587819.7, 4137346.1,      17.0,      17.0,       0.0);         ( 587881.4,
4137346.1,      17.1,      17.1,       0.0);
     ( 587943.2, 4137346.1,      17.2,      17.2,       0.0);         ( 588004.9,
4137346.1,      16.0,      16.0,       0.0);
     ( 588066.7, 4137346.1,      16.0,      16.0,       0.0);         ( 588128.4,
4137346.1,      15.9,      15.9,       0.0);
     ( 588190.1, 4137346.1,      16.1,      16.1,       0.0);         ( 587881.4,
4137399.3,      16.9,      16.9,       0.0);
     ( 587943.2, 4137399.3,      16.7,      16.7,       0.0);         ( 588004.9,
4137399.3,      15.8,      15.8,       0.0);
     ( 588066.7, 4137399.3,      15.9,      15.9,       0.0);         ( 588128.4,
4137399.3,      15.9,      15.9,       0.0);
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                         ***       20:43:19

                                   PAGE  41
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
```

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi Met Version: 14134
Profile file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi
Surface format: FREE

Profile format: FREE

Surface station no.: 23244 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-12.1	0.213	-9.000	-9.000	-999.	236.	72.6	0.09	0.54	1.00	2.86	1.	10.0	282.5	2.0

```
 09 01 01   1 02  -14.9  0.261 -9.000 -9.000 -999.  321.    109.2  0.09   0.54
1.00    3.36   18.   10.0  282.0    2.0
 09 01 01   1 03   -9.1  0.160 -9.000 -9.000 -999.  158.     40.7  0.09   0.54
1.00    2.36   24.   10.0  282.0    2.0
 09 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.4    2.0
 09 01 01   1 05   -3.9  0.075 -9.000 -9.000 -999.   49.      9.8  0.09   0.54
1.00    1.76   23.   10.0  281.4    2.0
 09 01 01   1 06   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36    2.   10.0  280.9    2.0
 09 01 01   1 07   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36   15.   10.0  280.9    2.0
 09 01 01   1 08   -4.7  0.084 -9.000 -9.000 -999.   61.     11.7  0.15   0.54
0.73    1.76  323.   10.0  280.9    2.0
 09 01 01   1 09   -4.9  0.212 -9.000 -9.000 -999.  234.    179.0  0.15   0.54
0.38    2.36  357.   10.0  280.4    2.0
 09 01 01   1 10    5.7  0.163  0.241  0.014   89.  159.    -69.3  0.09   0.54
0.25    1.76   11.   10.0  280.9    2.0
 09 01 01   1 11   12.2 -9.000 -9.000 -9.000  158. -999. -99999.0  0.24   0.54
0.21    0.00    0.   10.0  280.9    2.0
 09 01 01   1 12   16.0  0.426  0.456  0.016  216.  668.   -442.4  0.15   0.54
0.19    4.36  346.   10.0  281.4    2.0
 09 01 01   1 13   16.6  0.236  0.493  0.015  263.  305.    -71.8  0.36   0.54
0.19    1.76  253.   10.0  281.4    2.0
 09 01 01   1 14   14.2 -9.000 -9.000 -9.000  297. -999. -99999.0  0.24   0.54
0.20    0.00    0.   10.0  282.0    2.0
 09 01 01   1 15   44.9 -9.000 -9.000 -9.000  387. -999. -99999.0  0.24   0.54
0.23    0.00    0.   10.0  283.8    2.0
 09 01 01   1 16   13.2 -9.000 -9.000 -9.000  410. -999. -99999.0  0.24   0.54
0.31    0.00    0.   10.0  284.1    2.0
 09 01 01   1 17  -12.3  0.130 -9.000 -9.000 -999.  112.     16.2  0.15   0.54
0.55    2.36  351.   10.0  282.1    2.0
 09 01 01   1 18   -9.3  0.106 -9.000 -9.000 -999.   83.     11.6  0.36   0.54
1.00    1.76  297.   10.0  282.1    2.0
 09 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  280.1    2.0
```

```
 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 09 01 01 01   10.0 1    1.    2.86   282.6   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  43
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                    INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                  L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                  L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                  L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         587572.74    4136390.17        0.00758                      587634.48
4136390.17        0.00944
         587696.22    4136390.17        0.01156                      587757.96
4136390.17        0.01368
         587819.70    4136390.17        0.01546                      587881.44
4136390.17        0.01664
         587943.18    4136390.17        0.01695                      588066.66
4136390.17        0.01489
         588128.40    4136390.17        0.01315                      588190.14
4136390.17        0.01142
         587511.00    4136443.28        0.00665                      587572.74
4136443.28        0.00861
         587634.48    4136443.28        0.01112                      587696.22
4136443.28        0.01403
```

```
         587757.96    4136443.28        0.01696                    587819.70
4136443.28        0.01944
         587881.44    4136443.28        0.02104                    587943.18
4136443.28        0.02128
         588004.92    4136443.28        0.01995                    588066.66
4136443.28        0.01756
         588128.40    4136443.28        0.01497                    588190.14
4136443.28        0.01266
         588251.88    4136443.28        0.01059                    587387.52
4136496.39        0.00446
         587449.26    4136496.39        0.00563                    587511.00
4136496.39        0.00732
         587572.74    4136496.39        0.00990                    587634.48
4136496.39        0.01339
         587696.22    4136496.39        0.01756                    587757.96
4136496.39        0.02174
         587819.70    4136496.39        0.02529                    587881.44
4136496.39        0.02764
         587943.18    4136496.39        0.02781                    588004.92
4136496.39        0.02503
         588066.66    4136496.39        0.02082                    588128.40
4136496.39        0.01703
         588190.14    4136496.39        0.01399                    588251.88
4136496.39        0.01144
         587387.52    4136549.50        0.00469                    587449.26
4136549.50        0.00604
         587511.00    4136549.50        0.00813                    587572.74
4136549.50        0.01152
         587634.48    4136549.50        0.01669                    587696.22
4136549.50        0.02302
         587757.96    4136549.50        0.02929                    587819.70
4136549.50        0.03464
         587881.44    4136549.50        0.03856                    587943.18
4136549.50        0.03895
         588004.92    4136549.50        0.03241                    588066.66
4136549.50        0.02457
         588128.40    4136549.50        0.01926                    588251.88
4136549.50        0.01232
         588313.62    4136549.50        0.00979                    587387.52
4136602.61        0.00494
         587449.26    4136602.61        0.00646                    587511.00
4136602.61        0.00898
         587572.74    4136602.61        0.01369                    587634.48
4136602.61        0.02219
         587696.22    4136602.61        0.03281                    587757.96
4136602.61        0.04289
         587819.70    4136602.61        0.05204                    587881.44
4136602.61        0.06045
```

```
         588066.66    4136602.61        0.02869                       588128.40
4136602.61        0.02182
         588190.14    4136602.61        0.01713                       588251.88
4136602.61        0.01331
         588313.62    4136602.61        0.01031                       588375.36
4136602.61        0.00807
         587264.04    4136655.72        0.00336                       587387.52
4136655.72        0.00517
         587449.26    4136655.72        0.00688                       587511.00
4136655.72        0.00991
         587572.74    4136655.72        0.01661                       587634.48
4136655.72        0.03386
         587696.22    4136655.72        0.05515                       588004.92
4136655.72        0.05405
         588066.66    4136655.72        0.03327                       588128.40
4136655.72        0.02508
         588190.14    4136655.72        0.01922                       588251.88
4136655.72        0.01440
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  44
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                  L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                  L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                  L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
         588313.62    4136655.72        0.01080                       588375.36
```

4136655.72 0.00826
587264.04 4136708.83 0.00346 587387.52 4136708.83 0.00542
587449.26 4136708.83 0.00730 588004.92 4136708.83 0.06462
588066.66 4136708.83 0.03923 588128.40 4136708.83 0.02988
588190.14 4136708.83 0.02185 588251.88 4136708.83 0.01548
588313.62 4136708.83 0.01116 588375.36 4136708.83 0.00831
587387.52 4136761.94 0.00568 587449.26 4136761.94 0.00774
587511.00 4136761.94 0.01180 587572.74 4136761.94 0.02370
588066.66 4136761.94 0.04984 588128.40 4136761.94 0.03810
588190.14 4136761.94 0.02486 588251.88 4136761.94 0.01631
588313.62 4136761.94 0.01129 588375.36 4136761.94 0.00824
587325.78 4136815.05 0.00458 587387.52 4136815.05 0.00592
587449.26 4136815.05 0.00812 587511.00 4136815.05 0.01239
587572.74 4136815.05 0.02294 587325.78 4136868.16 0.00472
587387.52 4136868.16 0.00610 587449.26 4136868.16 0.00833
587511.00 4136868.16 0.01226 587572.74 4136868.16 0.01986
587757.96 4136868.16 0.03830 587819.70 4136868.16 0.03981
587881.44 4136868.16 0.06567 588190.14 4136868.16 0.02952
588251.88 4136868.16 0.01678 588313.62 4136868.16 0.01093
588375.36 4136868.16 0.00777 588437.10 4136868.16 0.00587
587325.78 4136921.27 0.00483 587387.52 4136921.27 0.00620
587449.26 4136921.27 0.00828 587511.00 4136921.27 0.01145
587572.74 4136921.27 0.01607 587634.48 4136921.27 0.02088
587696.22 4136921.27 0.02354 587757.96 4136921.27 0.02554
587819.70 4136921.27 0.03066 587881.44

```
4136921.27        0.05468
         588190.14    4136921.27        0.03008                        588251.88
4136921.27        0.01618
         588313.62    4136921.27        0.01038                        588375.36
4136921.27        0.00739
         588437.10    4136921.27        0.00563                        587387.52
4136974.38        0.00616
         587449.26    4136974.38        0.00794                        587511.00
4136974.38        0.01029
         587572.74    4136974.38        0.01302                        587634.48
4136974.38        0.01545
         587696.22    4136974.38        0.01746                        587757.96
4136974.38        0.02007
         587819.70    4136974.38        0.02602                        587881.44
4136974.38        0.04598
         588190.14    4136974.38        0.02884                        588251.88
4136974.38        0.01492
         588313.62    4136974.38        0.00963                        588375.36
4136974.38        0.00696
         588437.10    4136974.38        0.00539                        587387.52
4137027.49        0.00598
         587449.26    4137027.49        0.00742                        587511.00
4137027.49        0.00910
         587572.74    4137027.49        0.01087                        587634.48
4137027.49        0.01252
         587696.22    4137027.49        0.01431                        587757.96
4137027.49        0.01705
         587819.70    4137027.49        0.02266                        587881.44
4137027.49        0.03815
         588190.14    4137027.49        0.02538                        588251.88
4137027.49        0.01319
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  45
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
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, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
588313.62	4137027.49	0.00881	588375.36	4137027.49	0.00652
588437.10	4137027.49	0.00512	587449.26	4137080.60	0.00683
587511.00	4137080.60	0.00807	587572.74	4137080.60	0.00935
587634.48	4137080.60	0.01067	587696.22	4137080.60	0.01232
587757.96	4137080.60	0.01491	587819.70	4137080.60	0.01966
587881.44	4137080.60	0.03046	588190.14	4137080.60	0.01989
588251.88	4137080.60	0.01134	588313.62	4137080.60	0.00792
588375.36	4137080.60	0.00601	588437.10	4137080.60	0.00478
587449.26	4137133.71	0.00626	587511.00	4137133.71	0.00722
587572.74	4137133.71	0.00824	587634.48	4137133.71	0.00939
587696.22	4137133.71	0.01090	587757.96	4137133.71	0.01315
588190.14	4137133.71	0.01412	588251.88	4137133.71	0.00934
588313.62	4137133.71	0.00690	588375.36	4137133.71	0.00539
588437.10	4137133.71	0.00438	587449.26	4137186.82	0.00577
587511.00	4137186.82	0.00655	587572.74	4137186.82	0.00741
587634.48	4137186.82	0.00843	587757.96	4137186.82	0.01157
587819.70	4137186.82	0.01402	587881.44	4137186.82	0.01685
587943.18	4137186.82	0.01881	588004.92	4137186.82	0.01902

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         588066.66    4137186.82        0.01713                        588128.40
4137186.82        0.01330
         588190.14    4137186.82        0.00991                        588313.62
4137186.82        0.00589
         588375.36    4137186.82        0.00477                        587634.48
4137239.93        0.00763
         587696.22    4137239.93        0.00873                        587757.96
4137239.93        0.01005
         587819.70    4137239.93        0.01146                        587881.44
4137239.93        0.01258
         587943.18    4137239.93        0.01291                        588004.92
4137239.93        0.01226
         588066.66    4137239.93        0.01079                        588128.40
4137239.93        0.00899
         588190.14    4137239.93        0.00741                        588251.88
4137239.93        0.00608
         588313.62    4137239.93        0.00503                        588375.36
4137239.93        0.00420
         587696.22    4137293.04        0.00775                        587757.96
4137293.04        0.00860
         587819.70    4137293.04        0.00930                        587881.44
4137293.04        0.00963
         587943.18    4137293.04        0.00943                        588004.92
4137293.04        0.00869
         588066.66    4137293.04        0.00771                        588128.40
4137293.04        0.00672
         588190.14    4137293.04        0.00582                        588251.88
4137293.04        0.00501
         588313.62    4137293.04        0.00430                        587757.96
4137346.15        0.00729
         587819.70    4137346.15        0.00755                        587881.44
4137346.15        0.00754
         587943.18    4137346.15        0.00719                        588004.92
4137346.15        0.00658
         588066.66    4137346.15        0.00594                        588128.40
4137346.15        0.00530
         588190.14    4137346.15        0.00473                        587881.44
4137399.26        0.00603
         587943.18    4137399.26        0.00569                        588004.92
4137399.26        0.00524
         588066.66    4137399.26        0.00478                        588128.40
4137399.26        0.00434
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***         01/13/20
 *** AERMET - VERSION  14134 ***   ***
                          ***       20:43:19
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
587572.74	4136390.17	0.13196	(13011518)	587634.48	4136390.17	0.13056	(12052002)
587696.22	4136390.17	0.13290	(12092123)	587757.96	4136390.17	0.14190	(12010521)
587819.70	4136390.17	0.13944	(10021621)	587881.44	4136390.17	0.13684	(11123020)
587943.18	4136390.17	0.12508	(13021620)	588066.66	4136390.17	0.08381	(12022118)
588128.40	4136390.17	0.07384	(12010118)	588190.14	4136390.17	0.06839	(10120717)
587511.00	4136443.28	0.13228	(09090402)	587572.74	4136443.28	0.14614	(10021920)
587634.48	4136443.28	0.14622	(13011518)	587696.22	4136443.28	0.14813	(12052001)
587757.96	4136443.28	0.16016	(13021621)	587819.70	4136443.28	0.15657	(13123117)
587881.44	4136443.28	0.15721	(11123020)	587943.18	4136443.28	0.14258	(13021620)
588004.92	4136443.28	0.10726	(12100320)	588066.66	4136443.28	0.08925	(12022118)
588128.40	4136443.28	0.08030	(11122419)	588190.14	4136443.28	0.07452	(11011718)
588251.88	4136443.28	0.06909	(09012020)	587387.52	4136496.39	0.13121	(13021723)
587449.26	4136496.39	0.13675	(13021723)	587511.00			

4136496.39 0.14450 (11102020)
587572.74 4136496.39 0.15551 (10021920) 587634.48
4136496.39 0.16693 (10021920)
587696.22 4136496.39 0.16632 (12052002) 587757.96
4136496.39 0.17753 (13021621)
587819.70 4136496.39 0.18352 (13123117) 587881.44
4136496.39 0.18290 (11123020)
587943.18 4136496.39 0.16735 (13021620) 588004.92
4136496.39 0.11843 (12100320)
588066.66 4136496.39 0.10179 (11122419) 588128.40
4136496.39 0.09376 (11011718)
588190.14 4136496.39 0.08219 (11020520) 588251.88
4136496.39 0.07373 (09012020)
587387.52 4136549.50 0.12945 (11111320) 587449.26
4136549.50 0.15021 (13021723)
587511.00 4136549.50 0.16060 (13021723) 587572.74
4136549.50 0.16811 (11102020)
587634.48 4136549.50 0.18859 (10021920) 587696.22
4136549.50 0.19812 (13011518)
587757.96 4136549.50 0.20140 (12052001) 587819.70
4136549.50 0.21796 (13021621)
587881.44 4136549.50 0.22160 (10021621) 587943.18
4136549.50 0.20586 (13021620)
588004.92 4136549.50 0.13593 (11011719) 588066.66
4136549.50 0.12487 (11011718)
588128.40 4136549.50 0.10753 (11020520) 588251.88
4136549.50 0.07965 (11012519)
588313.62 4136549.50 0.07404 (09022019) 587387.52
4136602.61 0.12127 (13061705)
587449.26 4136602.61 0.14906 (11111320) 587511.00
4136602.61 0.17936 (13021723)
587572.74 4136602.61 0.19669 (13021723) 587634.48
4136602.61 0.20850 (11102020)
587696.22 4136602.61 0.23797 (10021920) 587757.96
4136602.61 0.24719 (13011518)
587819.70 4136602.61 0.26717 (13021621) 587881.44
4136602.61 0.27814 (10021621)
588066.66 4136602.61 0.14954 (10121517) 588128.40
4136602.61 0.11448 (10121517)
588190.14 4136602.61 0.09420 (09012020) 588251.88
4136602.61 0.08675 (13021518)
588313.62 4136602.61 0.07848 (12012706) 588375.36
4136602.61 0.07104 (11020602)
587264.04 4136655.72 0.06394 (13022221) 587387.52
4136655.72 0.09791 (13061705)
587449.26 4136655.72 0.13501 (13061705) 587511.00
4136655.72 0.18065 (11111320)
587572.74 4136655.72 0.23007 (13021723) 587634.48

4136655.72 0.26147 (13021723)
587696.22 4136655.72 0.28478 (11102020) 588004.92
4136655.72 0.22432 (10121517)
588066.66 4136655.72 0.14694 (10121517) 588128.40
4136655.72 0.11217 (10021620)
588190.14 4136655.72 0.10511 (11012519) 588251.88
4136655.72 0.09516 (12120317)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.08290	(11122419)	588375.36	4136655.72	0.07435	(09012018)
587264.04	4136708.83	0.06467	(12092022)	587387.52	4136708.83	0.08410	(12092022)
587449.26	4136708.83	0.10132	(12020419)	588004.92	4136708.83	0.21321	(10121517)
588066.66	4136708.83	0.15151	(13021620)	588128.40	4136708.83	0.13120	(09122417)
588190.14	4136708.83	0.12047	(13021518)	588251.88	4136708.83	0.10219	(11011719)
588313.62	4136708.83	0.08813	(11020602)	588375.36	4136708.83	0.07731	(11020520)

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       587387.52   4136761.94        0.08277  (11022822)              587449.26
4136761.94        0.10054  (11022822)
       587511.00   4136761.94        0.12904  (11022822)              587572.74
4136761.94        0.18355  (11022822)
       588066.66   4136761.94        0.18359  (13021620)              588128.40
4136761.94        0.16208  (09122417)
       588190.14   4136761.94        0.13489  (13122718)              588251.88
4136761.94        0.10931  (11020602)
       588313.62   4136761.94        0.09194  (11020520)              588375.36
4136761.94        0.07965  (11020520)
       587325.78   4136815.05        0.06606  (10010624)              587387.52
4136815.05        0.07538  (10010624)
       587449.26   4136815.05        0.09268  (13010424)              587511.00
4136815.05        0.12121  (11011505)
       587572.74   4136815.05        0.16982  (11011505)              587325.78
4136868.16        0.06073  (11011505)
       587387.52   4136868.16        0.07233  (11011505)              587449.26
4136868.16        0.08932  (09021919)
       587511.00   4136868.16        0.11328  (09021919)              587572.74
4136868.16        0.15736  (12120320)
       587757.96   4136868.16        0.16754  (10122419)              587819.70
4136868.16        0.20804  (09122917)
       587881.44   4136868.16        0.33036  (10021907)              588190.14
4136868.16        0.15464  (11020520)
       588251.88   4136868.16        0.11611  (11020520)              588313.62
4136868.16        0.09101  (10121517)
       588375.36   4136868.16        0.06928  (10121517)              588437.10
4136868.16        0.04874  (10121517)
       587325.78   4136921.27        0.05867  (09021919)              587387.52
4136921.27        0.06891  (09021919)
       587449.26   4136921.27        0.08585  (12120320)              587511.00
4136921.27        0.10252  (12120320)
       587572.74   4136921.27        0.12060  (10013002)              587634.48
4136921.27        0.12945  (11021419)
       587696.22   4136921.27        0.12580  (10122419)              587757.96
4136921.27        0.12045  (10122419)
       587819.70   4136921.27        0.17413  (09122917)              587881.44
4136921.27        0.28443  (09122917)
       588190.14   4136921.27        0.15931  (11020520)              588251.88
4136921.27        0.11158  (10121517)
       588313.62   4136921.27        0.07801  (10121517)              588375.36
4136921.27        0.04972  (10121517)
       588437.10   4136921.27        0.03527  (12011020)              587387.52
4136974.38        0.06724  (12120320)
       587449.26   4136974.38        0.07608  (09123123)              587511.00
4136974.38        0.08618  (10013002)
       587572.74   4136974.38        0.09569  (11021419)              587634.48
4136974.38        0.09717  (11021619)
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       587696.22   4136974.38        0.09792  (10122419)                587757.96
 4136974.38        0.10623  (11022822)
       587819.70   4136974.38        0.13322  (11022822)                587881.44
 4136974.38        0.23484  (09122917)
       588190.14   4136974.38        0.15209  (10121517)                588251.88
 4136974.38        0.09176  (10121517)
       588313.62   4136974.38        0.05170  (09010304)                588375.36
 4136974.38        0.04250  (12010819)
       588437.10   4136974.38        0.03612  (12010819)                587387.52
 4137027.49        0.06010  (12010208)
       587449.26   4137027.49        0.06646  (10013002)                587511.00
 4137027.49        0.07379  (10120724)
       587572.74   4137027.49        0.07808  (12022706)                587634.48
 4137027.49        0.08080  (10122419)
       587696.22   4137027.49        0.08224  (13010424)                587757.96
 4137027.49        0.09766  (10010624)
       587819.70   4137027.49        0.12447  (11022822)                587881.44
 4137027.49        0.18314  (12120320)
       588190.14   4137027.49        0.12075  (10121517)                588251.88
 4137027.49        0.06841  (12022606)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

                                  PAGE  48
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                             ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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- -
588313.62 4137027.49 0.05249 (11020605) 588375.36
4137027.49 0.04337 (11020605)
588437.10 4137027.49 0.03687 (11020605) 587449.26
4137080.60 0.05901 (13121821)
587511.00 4137080.60 0.06320 (11021419) 587572.74
4137080.60 0.06582 (12121502)
587634.48 4137080.60 0.06891 (10122419) 587696.22
4137080.60 0.07884 (09021919)
587757.96 4137080.60 0.09486 (12120320) 587819.70
4137080.60 0.11951 (12120320)
587881.44 4137080.60 0.16502 (12120320) 588190.14
4137080.60 0.10023 (10010703)
588251.88 4137080.60 0.06792 (10010703) 588313.62
4137080.60 0.05210 (10010320)
588375.36 4137080.60 0.04272 (12022606) 588437.10
4137080.60 0.03663 (11012007)
587449.26 4137133.71 0.05248 (11021419) 587511.00
4137133.71 0.05531 (12022706)
587572.74 4137133.71 0.05927 (09021919) 587634.48
4137133.71 0.06677 (09021919)
587696.22 4137133.71 0.07805 (12120320) 587757.96
4137133.71 0.09239 (12120320)
588190.14 4137133.71 0.08645 (10010703) 588251.88
4137133.71 0.06500 (10010703)
588313.62 4137133.71 0.05144 (10010703) 588375.36
4137133.71 0.04229 (12022505)
588437.10 4137133.71 0.03587 (10010320) 587449.26
4137186.82 0.04801 (09021919)
587511.00 4137186.82 0.05224 (09021919) 587572.74
4137186.82 0.05862 (12120320)
587634.48 4137186.82 0.06683 (12120320) 587757.96
4137186.82 0.08672 (12010208)
587819.70 4137186.82 0.10443 (11021419) 587881.44
4137186.82 0.12395 (10122419)
587943.18 4137186.82 0.15033 (12120224) 588004.92
4137186.82 0.15351 (09020518)
588066.66 4137186.82 0.14060 (09020518) 588128.40
4137186.82 0.10113 (13020107)
588190.14 4137186.82 0.06450 (11032318) 588313.62
4137186.82 0.04741 (10010703)
588375.36 4137186.82 0.04115 (10010703) 587634.48
4137239.93 0.06368 (09123123)
587696.22 4137239.93 0.07119 (12012120) 587757.96
4137239.93 0.08163 (10120724)
587819.70 4137239.93 0.09384 (12122218) 587881.44
4137239.93 0.10740 (10122419)
587943.18 4137239.93 0.12282 (12120224) 588004.92

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 4137239.93        0.12370  (13020107)
       588066.66   4137239.93        0.11135  (13020107)                588128.40
 4137239.93        0.07498  (13020107)
       588190.14   4137239.93        0.05093  (11030217)                588251.88
 4137239.93        0.05046  (11032318)
       588313.62   4137239.93        0.04383  (11032318)                588375.36
 4137239.93        0.03615  (10010703)
       587696.22   4137293.04        0.06774  (13121821)                587757.96
 4137293.04        0.07583  (11021419)
       587819.70   4137293.04        0.08414  (11021619)                587881.44
 4137293.04        0.09385  (10012021)
       587943.18   4137293.04        0.10520  (12120224)                588004.92
 4137293.04        0.10549  (13020107)
       588066.66   4137293.04        0.09388  (13020107)                588128.40
 4137293.04        0.06058  (13020107)
       588190.14   4137293.04        0.04350  (11030217)                588251.88
 4137293.04        0.03867  (11032318)
       588313.62   4137293.04        0.04071  (11032318)                587757.96
 4137346.15        0.06963  (12122218)
       587819.70   4137346.15        0.07810  (10122419)                587881.44
 4137346.15        0.08416  (10122601)
       587943.18   4137346.15        0.09237  (12120224)                588004.92
 4137346.15        0.09264  (13020107)
       588066.66   4137346.15        0.08185  (13020107)                588128.40
 4137346.15        0.05131  (13020107)
       588190.14   4137346.15        0.03546  (11030217)                587881.44
 4137399.26        0.07668  (10122601)
       587943.18   4137399.26        0.08256  (12120224)                588004.92
 4137399.26        0.08301  (13020107)
       588066.66   4137399.26        0.07268  (13020107)                588128.40
 4137399.26        0.04500  (13020107)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
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, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
587572.74	4136390.17	0.04066b	(12122924)	587634.48	4136390.17	0.04229b	(12122924)
587696.22	4136390.17	0.04034b	(12081824)	587757.96	4136390.17	0.04237b	(12081824)
587819.70	4136390.17	0.04270b	(09071124)	587881.44	4136390.17	0.04002b	(09071124)
587943.18	4136390.17	0.03948b	(11010924)	588066.66	4136390.17	0.03091b	(11010924)
588128.40	4136390.17	0.02805b	(09012424)	588190.14	4136390.17	0.02496b	(09012424)
587511.00	4136443.28	0.03659b	(12122924)	587572.74	4136443.28	0.04439b	(12122924)
587634.48	4136443.28	0.04911b	(12122924)	587696.22	4136443.28	0.04986b	(12122924)
587757.96	4136443.28	0.05002b	(12081824)	587819.70	4136443.28	0.05112b	(12081824)
587881.44	4136443.28	0.04918b	(09071124)	587943.18	4136443.28	0.04721b	(11010924)
588004.92	4136443.28	0.04297b	(11010924)	588066.66	4136443.28	0.03536b	(11010924)
588128.40	4136443.28	0.03147c	(11011424)	588190.14	4136443.28	0.02688c	(09010824)
588251.88	4136443.28	0.02388c	(09010824)	587387.52	4136496.39	0.01797b	(12122924)
587449.26	4136496.39	0.02627b	(12122924)	587511.00	4136496.39	0.03679b	(12122924)
587572.74	4136496.39	0.04767b	(12122924)	587634.48	4136496.39	0.05615b	(12122924)
587696.22	4136496.39	0.06098b	(12122924)	587757.96	4136496.39	0.06101b	(12122924)
587819.70	4136496.39	0.06311b	(12081824)	587881.44	4136496.39	0.06226b	(09071124)
587943.18	4136496.39	0.05821b	(11010924)	588004.92	4136496.39	0.05111b	(11010924)
588066.66	4136496.39	0.04339c	(11011424)	588128.40	4136496.39	0.03693c	(11011424)

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       588190.14   4136496.39        0.02980c (09010824)                588251.88
 4136496.39        0.02549c (09010824)
       587387.52   4136549.50        0.01638b (10021924)                587449.26
 4136549.50        0.02375b (12122924)
       587511.00   4136549.50        0.03623b (12122924)                587572.74
 4136549.50        0.05063b (12122924)
       587634.48   4136549.50        0.06340b (12122924)                587696.22
 4136549.50        0.07385b (12122924)
       587757.96   4136549.50        0.08003b (12122924)                587819.70
 4136549.50        0.07955b (12081824)
       587881.44   4136549.50        0.08206b (09071124)                587943.18
 4136549.50        0.07553b (11010924)
       588004.92   4136549.50        0.06303c (11011424)                588066.66
 4136549.50        0.05294c (11011424)
       588128.40   4136549.50        0.04093c (11011424)                588251.88
 4136549.50        0.02674c (09010824)
       588313.62   4136549.50        0.02395c (09122224)                587387.52
 4136602.61        0.01584c (12080724)
       587449.26   4136602.61        0.02048b (10021924)                587511.00
 4136602.61        0.03399b (12122924)
       587572.74   4136602.61        0.05395b (12122924)                587634.48
 4136602.61        0.07262b (12122924)
       587696.22   4136602.61        0.09068b (12122924)                587757.96
 4136602.61        0.10601b (12122924)
       587819.70   4136602.61        0.11306b (12122924)                587881.44
 4136602.61        0.11794b (10021924)
       588066.66   4136602.61        0.05947c (11011424)                588128.40
 4136602.61        0.04238c (11011424)
       588190.14   4136602.61        0.03330b (09012424)                588251.88
 4136602.61        0.02856c (09010824)
       588313.62   4136602.61        0.02600c (09122224)                588375.36
 4136602.61        0.02375c (09122224)
       587264.04   4136655.72        0.01009b (11041824)                587387.52
 4136655.72        0.01537b (10062624)
       587449.26   4136655.72        0.01985c (12080724)                587511.00
 4136655.72        0.02877b (12122924)
       587572.74   4136655.72        0.05668b (12122924)                587634.48
 4136655.72        0.09260b (10021924)
       587696.22   4136655.72        0.12528b (10021924)                588004.92
 4136655.72        0.09846c (11011424)
       588066.66   4136655.72        0.06076c (11011424)                588128.40
 4136655.72        0.04770b (09012424)
       588190.14   4136655.72        0.03664b (09012424)                588251.88
 4136655.72        0.03211c (09010824)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***       20:43:19
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 , L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 , L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 , L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.02858c	(09122224)	588375.36	4136655.72	0.02473c	(09122224)
587264.04	4136708.83	0.01019b	(11041824)	587387.52	4136708.83	0.01473b	(11041824)
587449.26	4136708.83	0.01899b	(11041824)	588004.92	4136708.83	0.10706b	(13120324)
588066.66	4136708.83	0.06604b	(09012424)	588128.40	4136708.83	0.05643b	(09012424)
588190.14	4136708.83	0.04282c	(09010824)	588251.88	4136708.83	0.03721c	(09010824)
588313.62	4136708.83	0.03078c	(09010824)	588375.36	4136708.83	0.02478c	(09010824)
587387.52	4136761.94	0.01456b	(11041824)	587449.26	4136761.94	0.01905b	(11041824)
587511.00	4136761.94	0.02732b	(11041824)	587572.74	4136761.94	0.05015c	(09122624)
588066.66	4136761.94	0.08027b	(09012424)	588128.40	4136761.94	0.07006b	(09012424)
588190.14	4136761.94	0.05360c	(09010824)	588251.88	4136761.94	0.04138c	(09010824)
588313.62	4136761.94	0.03144c	(09010824)	588375.36	4136761.94	0.02400b	(13120324)
587325.78	4136815.05	0.01153c	(12112724)	587387.52			

4136815.05 0.01487c (12112724)
587449.26 4136815.05 0.02025c (12112724) 587511.00
4136815.05 0.02998c (12112724)
587572.74 4136815.05 0.05731c (10120824) 587325.78
4136868.16 0.01274c (12112724)
587387.52 4136868.16 0.01622c (12112724) 587449.26
4136868.16 0.02179c (10120824)
587511.00 4136868.16 0.03498c (10120824) 587572.74
4136868.16 0.05931c (10120824)
587757.96 4136868.16 0.09104b (10012224) 587819.70
4136868.16 0.08390c (09120624)
587881.44 4136868.16 0.13695b (12122924) 588190.14
4136868.16 0.06587c (09010824)
588251.88 4136868.16 0.04209b (13120324) 588313.62
4136868.16 0.03074b (13120324)
588375.36 4136868.16 0.02278b (13120324) 588437.10
4136868.16 0.01706b (13120324)
587325.78 4136921.27 0.01351c (12112724) 587387.52
4136921.27 0.01718c (10120824)
587449.26 4136921.27 0.02454c (10120824) 587511.00
4136921.27 0.03555c (10120824)
587572.74 4136921.27 0.05370b (10012224) 587634.48
4136921.27 0.06931b (10012224)
587696.22 4136921.27 0.06835b (10012224) 587757.96
4136921.27 0.06397b (10012224)
587819.70 4136921.27 0.06537b (10012224) 587881.44
4136921.27 0.11126c (09120624)
588190.14 4136921.27 0.06629c (09010824) 588251.88
4136921.27 0.04156b (13120324)
588313.62 4136921.27 0.02862b (13120324) 588375.36
4136921.27 0.02109b (13011024)
588437.10 4136921.27 0.01706b (13011024) 587387.52
4136974.38 0.01866c (10120824)
587449.26 4136974.38 0.02494c (10120824) 587511.00
4136974.38 0.03445b (10012224)
587572.74 4136974.38 0.04661b (10012224) 587634.48
4136974.38 0.05272b (10012224)
587696.22 4136974.38 0.05192b (10012224) 587757.96
4136974.38 0.05134b (10012224)
587819.70 4136974.38 0.06025b (10012224) 587881.44
4136974.38 0.10116b (13111924)
588190.14 4136974.38 0.06350b (13120324) 588251.88
4136974.38 0.03763b (13120324)
588313.62 4136974.38 0.02645b (13011024) 588375.36
4136974.38 0.02050b (13011024)
588437.10 4136974.38 0.01659b (13011024) 587387.52
4137027.49 0.01914c (10120824)
587449.26 4137027.49 0.02455b (10012224) 587511.00

4137027.49 0.03274b (10012224)
587572.74 4137027.49 0.03996b (10012224) 587634.48
4137027.49 0.04277b (10012224)
587696.22 4137027.49 0.04294b (10012224) 587757.96
4137027.49 0.04568b (10012224)
587819.70 4137027.49 0.05873b (10012224) 587881.44
4137027.49 0.09671b (10012224)
588190.14 4137027.49 0.05644c (13121924) 588251.88
4137027.49 0.03366b (13011024)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** ***
*** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4137027.49	0.02420b	(13011024)	588375.36	4137027.49	0.01880b	(13011024)
588437.10	4137027.49	0.01532b	(13011024)	587449.26	4137080.60	0.02417b	(10012224)
587511.00	4137080.60	0.03006b	(10012224)	587572.74	4137080.60	0.03450b	(10012224)
587634.48	4137080.60	0.03628b	(10012224)	587696.22	4137080.60	0.03771b	(10012224)
587757.96	4137080.60	0.04308b	(10012224)	587819.70	4137080.60	0.05779b	(10012224)

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       587881.44   4137080.60        0.09101b (10012224)              588190.14
4137080.60        0.04577b (13011024)
       588251.88   4137080.60        0.02805b (13011024)              588313.62
4137080.60        0.02053b (13011024)
       588375.36   4137080.60        0.01626b (13011024)              588437.10
4137080.60        0.01346b (13011024)
       587449.26   4137133.71        0.02298b (10012224)              587511.00
4137133.71        0.02719b (10012224)
       587572.74   4137133.71        0.03014b (10012224)              587634.48
4137133.71        0.03188b (10012224)
       587696.22   4137133.71        0.03449b (10012224)              587757.96
4137133.71        0.04122b (10012224)
       588190.14   4137133.71        0.03192b (09112324)              588251.88
4137133.71        0.02153b (11022324)
       588313.62   4137133.71        0.01707b (11022324)              588375.36
4137133.71        0.01409b (11022324)
       588437.10   4137133.71        0.01192b (11022324)              587449.26
4137186.82        0.02158b (10012224)
       587511.00   4137186.82        0.02471b (10012224)              587572.74
4137186.82        0.02698b (10012224)
       587634.48   4137186.82        0.02903b (10012224)              587757.96
4137186.82        0.04016b (10012224)
       587819.70   4137186.82        0.05242b (10012224)              587881.44
4137186.82        0.06565b (10012224)
       587943.18   4137186.82        0.06544b (10012224)              588004.92
4137186.82        0.05908c (10122624)
       588066.66   4137186.82        0.05002c (10122624)              588128.40
4137186.82        0.02990b (09021124)
       588190.14   4137186.82        0.02282b (09112324)              588313.62
4137186.82        0.01345b (09112324)
       588375.36   4137186.82        0.01162b (11022324)              587634.48
4137239.93        0.02753b (10012224)
       587696.22   4137239.93        0.03196b (10012224)              587757.96
4137239.93        0.03909b (10012224)
       587819.70   4137239.93        0.04764b (10012224)              587881.44
4137239.93        0.05173b (10012224)
       587943.18   4137239.93        0.04602b (10012224)              588004.92
4137239.93        0.04159c (10122624)
       588066.66   4137239.93        0.03231c (10122624)              588128.40
4137239.93        0.02103b (09021124)
       588190.14   4137239.93        0.01722b (09112324)              588251.88
4137239.93        0.01415b (09112324)
       588313.62   4137239.93        0.01165b (09112324)              588375.36
4137239.93        0.00969b (09112324)
       587696.22   4137293.04        0.03125b (10012224)              587757.96
4137293.04        0.03693b (10012224)
       587819.70   4137293.04        0.04139b (10012224)              587881.44
4137293.04        0.04027b (10012224)
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       587943.18   4137293.04        0.03595c (10122624)                588004.92
 4137293.04        0.03130c (10122624)
       588066.66   4137293.04        0.02265c (10122624)                588128.40
 4137293.04        0.01601b (09021124)
       588190.14   4137293.04        0.01359b (09112324)                588251.88
 4137293.04        0.01175b (09112324)
       588313.62   4137293.04        0.01007b (09112324)                587757.96
 4137346.15        0.03370b (10012224)
       587819.70   4137346.15        0.03478b (10012224)                587881.44
 4137346.15        0.03103b (10012224)
       587943.18   4137346.15        0.02918c (10122624)                588004.92
 4137346.15        0.02437c (10122624)
       588066.66   4137346.15        0.01710b (09021124)                588128.40
 4137346.15        0.01273b (09021124)
       588190.14   4137346.15        0.01108b (09112324)                587881.44
 4137399.26        0.02581c (10122624)
       587943.18   4137399.26        0.02425c (10122624)                588004.92
 4137399.26        0.01935c (10122624)
       588066.66   4137399.26        0.01382b (09021124)                588128.40
 4137399.26        0.01056b (09032124)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        20:43:19

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                               *** THE   8TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                            ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
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       587572.74   4136390.17        0.02450c (09050924)              587634.48
4136390.17         0.02757b (12072924)
       587696.22   4136390.17        0.03233c (12082124)              587757.96
4136390.17         0.03422c (12082124)
       587819.70   4136390.17        0.03556b (10070524)              587881.44
4136390.17         0.03640c (09071224)
       587943.18   4136390.17        0.03533c (12072224)              588066.66
4136390.17         0.02774c (11011424)
       588128.40   4136390.17        0.02426b (13072224)              588190.14
4136390.17         0.02171c (10100224)
       587511.00   4136443.28        0.02143b (12081824)              587572.74
4136443.28         0.02693b (10061724)
       587634.48   4136443.28        0.03100c (09050924)              587696.22
4136443.28         0.03652c (09010124)
       587757.96   4136443.28        0.04064c (11061624)              587819.70
4136443.28         0.04261  (12081924)
       587881.44   4136443.28        0.04428b (11010924)              587943.18
4136443.28         0.04220c (12072224)
       588004.92   4136443.28        0.03706c (12053124)              588066.66
4136443.28         0.03198b (13082024)
       588128.40   4136443.28        0.02696c (12101924)              588190.14
4136443.28         0.02417c (12013124)
       588251.88   4136443.28        0.02165c (10060124)              587387.52
4136496.39         0.01443c (12080724)
       587449.26   4136496.39        0.01881b (09090324)              587511.00
4136496.39         0.02188b (10061724)
       587572.74   4136496.39        0.02897b (10061724)              587634.48
4136496.39         0.03669c (12082124)
       587696.22   4136496.39        0.04202b (12072924)              587757.96
4136496.39         0.04898c (12082124)
       587819.70   4136496.39        0.05257c (12082124)              587881.44
4136496.39         0.05425b (11010924)
       587943.18   4136496.39        0.05256c (11092924)              588004.92
4136496.39         0.04500b (10070524)
       588066.66   4136496.39        0.03749b (12091424)              588128.40
4136496.39         0.03076b (13112124)
       588190.14   4136496.39        0.02671c (12013124)              588251.88
4136496.39         0.02277b (13112124)
       587387.52   4136549.50        0.01383c (13011424)              587449.26
4136549.50         0.01821c (11111324)
       587511.00   4136549.50        0.02397c (12080724)              587572.74
4136549.50         0.03116c (13062124)
       587634.48   4136549.50        0.04299c (09050924)              587696.22
4136549.50         0.05178c (13011424)
       587757.96   4136549.50        0.06059c (09010124)              587819.70
4136549.50         0.06678b (13061524)
       587881.44   4136549.50        0.07119b (10070524)              587943.18
```

4136549.50 0.06862c (11092924)
588004.92 4136549.50 0.05564b (12081224) 588066.66
4136549.50 0.04256b (12091424)
588128.40 4136549.50 0.03425b (12091424) 588251.88
4136549.50 0.02386b (13112124)
588313.62 4136549.50 0.02034b (13112124) 587387.52
4136602.61 0.01257b (13070524)
587449.26 4136602.61 0.01747c (13011424) 587511.00
4136602.61 0.02485c (09050924)
587572.74 4136602.61 0.03523b (13061524) 587634.48
4136602.61 0.05175b (09071124)
587696.22 4136602.61 0.06677b (11041824) 587757.96
4136602.61 0.07912b (11041824)
587819.70 4136602.61 0.09200b (13061524) 587881.44
4136602.61 0.10090c (09071224)
588066.66 4136602.61 0.04870b (11020824) 588128.40
4136602.61 0.03741c (12013124)
588190.14 4136602.61 0.03024c (10060124) 588251.88
4136602.61 0.02545b (10100124)
588313.62 4136602.61 0.02218c (11011424) 588375.36
4136602.61 0.01848c (12060524)
587264.04 4136655.72 0.00743b (09112324) 587387.52
4136655.72 0.01164b (11062424)
587449.26 4136655.72 0.01622c (09122724) 587511.00
4136655.72 0.02399c (13011424)
587572.74 4136655.72 0.03788c (13052124) 587634.48
4136655.72 0.06835b (09071124)
587696.22 4136655.72 0.09572b (13061524) 588004.92
4136655.72 0.08367c (12120624)
588066.66 4136655.72 0.05339c (12072224) 588128.40
4136655.72 0.04098b (13120324)
588190.14 4136655.72 0.03349c (10123024) 588251.88
4136655.72 0.02763b (12081424)

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681

, L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689
, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.02340c	(10123024)	588375.36	4136655.72	0.01961b	(11070624)
587264.04	4136708.83	0.00760b	(12092024)	587387.52	4136708.83	0.01109c	(12020124)
587449.26	4136708.83	0.01511c	(10052424)	588004.92	4136708.83	0.09781b	(09012424)
588066.66	4136708.83	0.06055b	(12081224)	588128.40	4136708.83	0.04723c	(10100224)
588190.14	4136708.83	0.03850c	(09122224)	588251.88	4136708.83	0.03092b	(09112824)
588313.62	4136708.83	0.02481b	(13112124)	588375.36	4136708.83	0.02023b	(11020824)
587387.52	4136761.94	0.01194m	(12112824)	587449.26	4136761.94	0.01599m	(12112824)
587511.00	4136761.94	0.02413b	(13091024)	587572.74	4136761.94	0.04711b	(09040824)
588066.66	4136761.94	0.07591b	(13082024)	588128.40	4136761.94	0.06083m	(12012724)
588190.14	4136761.94	0.04544b	(12060824)	588251.88	4136761.94	0.03388m	(12012724)
588313.62	4136761.94	0.02600b	(12022624)	588375.36	4136761.94	0.02062b	(10112424)
587325.78	4136815.05	0.00986b	(11022824)	587387.52	4136815.05	0.01294c	(12122824)
587449.26	4136815.05	0.01809b	(13091024)	587511.00	4136815.05	0.02808c	(09030324)
587572.74	4136815.05	0.05184c	(12111624)	587325.78	4136868.16	0.01098b	(11022124)
587387.52	4136868.16	0.01462b	(13091024)	587449.26	4136868.16	0.02011c	(12020124)
587511.00	4136868.16	0.02984c	(12122824)	587572.74	4136868.16	0.05212c	(09120624)
587757.96	4136868.16	0.08291c	(11110524)	587819.70	4136868.16	0.07703b	(10112224)

```
       587881.44   4136868.16        0.11335b (11022124)              588190.14
4136868.16        0.05613b (12081224)
       588251.88   4136868.16        0.03675c (10020724)              588313.62
4136868.16        0.02600b (10112424)
       588375.36   4136868.16        0.01977c (13012724)              588437.10
4136868.16        0.01623b (12122624)
       587325.78   4136921.27        0.01208m (12122224)              587387.52
4136921.27        0.01537c (09122624)
       587449.26   4136921.27        0.02087c (12122824)              587511.00
4136921.27        0.03070b (11022124)
       587572.74   4136921.27        0.04623  (10122124)              587634.48
4136921.27        0.05852c (12121624)
       587696.22   4136921.27        0.05797m (09110524)              587757.96
4136921.27        0.05579c (09122724)
       587819.70   4136921.27        0.06089b (09020524)              587881.44
4136921.27        0.10062b (11022124)
       588190.14   4136921.27        0.05756b (09112324)              588251.88
4136921.27        0.03570b (09112324)
       588313.62   4136921.27        0.02488b (09112324)              588375.36
4136921.27        0.01896c (10020724)
       588437.10   4136921.27        0.01492b (13120324)              587387.52
4136974.38        0.01584c (12122824)
       587449.26   4136974.38        0.02152b (12111924)              587511.00
4136974.38        0.02950c (12121624)
       587572.74   4136974.38        0.03826b (12111924)              587634.48
4136974.38        0.04321m (09110524)
       587696.22   4136974.38        0.04234c (12121624)              587757.96
4136974.38        0.04435b (10012324)
       587819.70   4136974.38        0.05450c (09122724)              587881.44
4136974.38        0.09182b (10112224)
       588190.14   4136974.38        0.05735b (13011024)              588251.88
4136974.38        0.03350b (12122624)
       588313.62   4136974.38        0.02304b (12122624)              588375.36
4136974.38        0.01689b (12122624)
       588437.10   4136974.38        0.01320b (10032524)              587387.52
4137027.49        0.01624b (12121524)
       587449.26   4137027.49        0.02110c (12122024)              587511.00
4137027.49        0.02703c (12122024)
       587572.74   4137027.49        0.03211c (13120624)              587634.48
4137027.49        0.03394b (12121524)
       587696.22   4137027.49        0.03512b (10012324)              587757.96
4137027.49        0.03979c (10120824)
       587819.70   4137027.49        0.05121b (10112224)              587881.44
4137027.49        0.08599b (09020524)
       588190.14   4137027.49        0.05182c (10020724)              588251.88
4137027.49        0.02883c (12120624)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus
v\Intuitive Campus v.isc       ***        01/13/20
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*** THE   8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL   ***
INCLUDING SOURCE(S):   L0019664   , L0019665   , L0019666   , L0019667   , L0019668   ,
L0019669   , L0019670   , L0019671   , L0019672   , L0019673   , L0019674   , L0019675   , L0019676   ,
L0019677   , L0019678   , L0019679   , L0019680   , L0019681   , L0019682   , L0019683   , L0019684   ,
L0019685   , L0019686   , L0019687   , L0019688   , L0019689   , L0019690   , L0019691   , . . .   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4137027.49	0.02053b	(09020924)	588375.36	4137027.49	0.01549b	(09112324)
588437.10	4137027.49	0.01234c	(12110824)	587449.26	4137080.60	0.02038c	(09120624)
587511.00	4137080.60	0.02438m	(09110524)	587572.74	4137080.60	0.02770c	(13120624)
587634.48	4137080.60	0.02904c	(12121624)	587696.22	4137080.60	0.03149c	(12121624)
587757.96	4137080.60	0.03732c	(12121624)	587819.70	4137080.60	0.05054b	(12121524)
587881.44	4137080.60	0.07874c	(12121624)	588190.14	4137080.60	0.04021b	(09020924)
588251.88	4137080.60	0.02484b	(09020924)	588313.62	4137080.60	0.01784c	(12110824)
588375.36	4137080.60	0.01388c	(12110824)	588437.10	4137080.60	0.01130c	(12110824)
587449.26	4137133.71	0.01917	(10122124)	587511.00	4137133.71	0.02218c	(12122024)
587572.74	4137133.71	0.02438b	(10012324)	587634.48	4137133.71	0.02617	(10122124)
587696.22	4137133.71	0.02955b	(12121524)	587757.96			

4137133.71 0.03656b (10012324)
588190.14 4137133.71 0.02721c (12020124) 588251.88
4137133.71 0.01877c (13121924)
588313.62 4137133.71 0.01445b (10033024) 588375.36
4137133.71 0.01176b (09020924)
588437.10 4137133.71 0.00977b (09112324) 587449.26
4137186.82 0.01801c (12121624)
587511.00 4137186.82 0.02031 (10122124) 587572.74
4137186.82 0.02225 (10122124)
587634.48 4137186.82 0.02451 (10122124) 587757.96
4137186.82 0.03561b (12111924)
587819.70 4137186.82 0.04506c (10120824) 587881.44
4137186.82 0.05429b (10012324)
587943.18 4137186.82 0.05559b (12111924) 588004.92
4137186.82 0.04834b (11112224)
588066.66 4137186.82 0.03808b (09032124) 588128.40
4137186.82 0.02600c (10121924)
588190.14 4137186.82 0.01879b (12101124) 588313.62
4137186.82 0.01179c (12020124)
588375.36 4137186.82 0.00974c (09120624) 587634.48
4137239.93 0.02381b (10012324)
587696.22 4137239.93 0.02810m (09110524) 587757.96
4137239.93 0.03361c (12121624)
587819.70 4137239.93 0.03871c (12121624) 587881.44
4137239.93 0.04120b (11112324)
587943.18 4137239.93 0.03852m (09110524) 588004.92
4137239.93 0.03206b (11112324)
588066.66 4137239.93 0.02488b (11032124) 588128.40
4137239.93 0.01773c (12020124)
588190.14 4137239.93 0.01388b (12101124) 588251.88
4137239.93 0.01172b (13120424)
588313.62 4137239.93 0.00993b (11022324) 588375.36
4137239.93 0.00853b (10033024)
587696.22 4137293.04 0.02662c (12121624) 587757.96
4137293.04 0.03001c (12121624)
587819.70 4137293.04 0.03234b (13111924) 587881.44
4137293.04 0.03223m (09110524)
587943.18 4137293.04 0.02806m (13033124) 588004.92
4137293.04 0.02313m (13033124)
588066.66 4137293.04 0.01776c (10030124) 588128.40
4137293.04 0.01331c (10121924)
588190.14 4137293.04 0.01098b (09032124) 588251.88
4137293.04 0.00963b (09021124)
588313.62 4137293.04 0.00836b (13120424) 587757.96
4137346.15 0.02661b (13111924)
587819.70 4137346.15 0.02623b (09020524) 587881.44
4137346.15 0.02500c (12113024)
587943.18 4137346.15 0.02185b (11112324) 588004.92

4137346.15 0.01770b (12032624)
588066.66 4137346.15 0.01409b (12032624) 588128.40
4137346.15 0.01060c (10121924)
588190.14 4137346.15 0.00907b (13013024) 587881.44
4137399.26 0.01981b (11112224)
587943.18 4137399.26 0.01701b (10012224) 588004.92
4137399.26 0.01419b (12022724)
588066.66 4137399.26 0.01155c (13020724) 588128.40
4137399.26 0.00875c (12020124)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** ***
*** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

GROUP ID		NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.06567	AT (587881.44, 4136868.16, 19.31, 19.31, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.06462	AT (588004.92, 4136708.83, 20.16, 20.16, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.06045	AT (587881.44, 4136602.61, 21.26, 21.26, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.05515	AT (587696.22, 4136655.72, 21.88, 21.88, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.05468	AT (587881.44, 4136921.27, 19.43, 19.43, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.05405	AT (588004.92, 4136655.72, 20.11, 20.11, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.05204	AT (587819.70, 4136602.61, 21.15, 21.15, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.04984	AT (588066.66, 4136761.94, 20.04, 20.04, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.04598	AT (587881.44, 4136974.38,		

18.86,   18.86,   0.00) DC
         10TH HIGHEST VALUE IS   0.04289 AT (587757.96, 4136602.61,
21.74,   21.74,   0.00) DC

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                                *** THE SUMMARY OF HIGHEST 1-HR
RESULTS ***

                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
              **

                                                        DATE
                                        NETWORK
GROUP ID   AVERAGE CONC   (YYMMDDHH)   RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)   OF TYPE GRID-ID
- -
- -

ALL   HIGH   1ST HIGH VALUE IS   0.33036 ON 10021907: AT (587881.44,
4136868.16,   19.31,   19.31,   0.00) DC

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                                *** THE SUMMARY OF HIGHEST 24-HR

RESULTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

GROUP ID (XR, YR, ZELEV, ZHILL, ZFLAG)	AVERAGE OF TYPE	CONC NETWORK GRID-ID	DATE (YYMMDDHH)	RECEPTOR
ALL	HIGH 1ST HIGH VALUE IS	0.13695b ON	12122924:	AT (587881.44, 4136868.16, 19.31, 19.31, 0.00) DC
	HIGH 8TH HIGH VALUE IS	0.11335b ON	11022124:	AT (587881.44, 4136868.16, 19.31, 19.31, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus v\Intuitive Campus v.isc *** 01/13/20
*** AERMET - VERSION 14134 *** *** 20:43:19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 15496 Informational Message(s)

A Total of 43872 Hours Were Processed

A Total of 14061 Calm Hours Identified

A Total of 1435 Missing Hours Identified (3.27 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

```
   ********   WARNING MESSAGES   ********
MX W481   43873         MAIN: Data Remaining After End of Year. Number of Hours=
       48

   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
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**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 1/14/2020
** File: C:\Lakes\AERMOD View\Intuitive Tier 4 1.13\Intuitive Tier 4 1.13.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w
   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL "Intuitive Tier 4 1.13.err"
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC North Site On-site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.000138
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 31
** 587891.089, 4136834.179, 19.33, 3.11, 3.95
** 587936.813, 4137080.070, 18.98, 3.11, 3.95
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** 588044.371, 4137092.457, 17.98, 3.11, 3.95
** 588135.741, 4137110.131, 18.53, 3.11, 3.95
** 588135.687, 4137109.517, 18.55, 3.11, 3.95
** 588109.948, 4136831.141, 19.39, 3.11, 3.95
** 587909.329, 4136837.961, 19.31, 3.11, 3.95
** 587945.651, 4137062.705, 19.67, 3.11, 3.95
** 587945.645, 4137072.431, 19.54, 3.11, 3.95
** 588121.874, 4137091.360, 18.47, 3.11, 3.95
** 588098.165, 4136856.973, 19.43, 3.11, 3.95
** 587927.060, 4136862.676, 18.81, 3.11, 3.95
** 587957.479, 4137067.052, 19.84, 3.11, 3.95
** 588111.473, 4137076.557, 18.15, 3.11, 3.95
** 588082.956, 4136878.836, 19.24, 3.11, 3.95
** 587949.874, 4136881.688, 18.81, 3.11, 3.95
** 587974.589, 4137050.892, 17.94, 3.11, 3.95
** 588091.511, 4137060.398, 18.24, 3.11, 3.95
** 588062.043, 4136904.502, 18.81, 3.11, 3.95
** 587964.133, 4136897.848, 18.94, 3.11, 3.95
** 587990.749, 4137039.485, 18.05, 3.11, 3.95
** 588066.796, 4137042.336, 18.00, 3.11, 3.95
** 588045.883, 4136920.662, 18.38, 3.11, 3.95
** 587978.391, 4136914.958, 18.57, 3.11, 3.95
** 588003.107, 4137021.424, 18.18, 3.11, 3.95
** 588048.735, 4137026.177, 18.05, 3.11, 3.95
** 588030.674, 4136939.673, 18.33, 3.11, 3.95
** 587992.650, 4136933.970, 18.42, 3.11, 3.95
** 588012.612, 4137008.115, 18.18, 3.11, 3.95
** 588030.674, 4137008.115, 18.38, 3.11, 3.95
** 588014.514, 4136949.179, 18.17, 3.11, 3.95
** ----------------------------------------------------------------------
   LOCATION L0019664     VOLUME   587891.866 4136838.358 19.34
   LOCATION L0019665     VOLUME   587893.420 4136846.714 19.35
   LOCATION L0019666     VOLUME   587894.974 4136855.071 19.37
   LOCATION L0019667     VOLUME   587896.528 4136863.428 19.41
   LOCATION L0019668     VOLUME   587898.082 4136871.785 19.54
   LOCATION L0019669     VOLUME   587899.636 4136880.141 19.74
   LOCATION L0019670     VOLUME   587901.190 4136888.498 20.01
   LOCATION L0019671     VOLUME   587902.744 4136896.855 20.11
   LOCATION L0019672     VOLUME   587904.298 4136905.212 20.14
   LOCATION L0019673     VOLUME   587905.852 4136913.568 20.13
   LOCATION L0019674     VOLUME   587907.406 4136921.925 20.07
   LOCATION L0019675     VOLUME   587908.960 4136930.282 19.85
   LOCATION L0019676     VOLUME   587910.514 4136938.639 19.59
   LOCATION L0019677     VOLUME   587912.068 4136946.995 19.35
   LOCATION L0019678     VOLUME   587913.622 4136955.352 19.28
   LOCATION L0019679     VOLUME   587915.176 4136963.709 19.29
   LOCATION L0019680     VOLUME   587916.730 4136972.066 19.33
   LOCATION L0019681     VOLUME   587918.283 4136980.422 19.39
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LOCATION	L0019683	VOLUME	587921.391	4136997.136 19.53
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LOCATION	L0019685	VOLUME	587924.499	4137013.849 19.64
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LOCATION	L0019687	VOLUME	587927.607	4137030.563 19.84
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LOCATION	L0019689	VOLUME	587930.715	4137047.276 19.93
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LOCATION	L0019721	VOLUME	588132.309	4137072.977 18.48
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LOCATION	L0019728	VOLUME	588126.831	4137013.730 18.37
LOCATION	L0019729	VOLUME	588126.048	4137005.266 18.36

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LOCATION L0019739     VOLUME   588118.222 4136920.627 19.06
LOCATION L0019740     VOLUME   588117.440 4136912.163 19.03
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LOCATION L0019751     VOLUME   588097.823 4136831.554 19.30
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LOCATION L0019758     VOLUME   588038.357 4136833.575 19.05
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LOCATION L0019767     VOLUME   587961.901 4136836.174 19.55
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LOCATION L0019770     VOLUME   587936.416 4136837.040 19.26
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LOCATION L0019772     VOLUME   587919.426 4136837.618 19.28
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LOCATION L0019774     VOLUME   587910.430 4136844.770 19.31
LOCATION L0019775     VOLUME   587911.786 4136853.161 19.32
LOCATION L0019776     VOLUME   587913.142 4136861.552 19.41
LOCATION L0019777     VOLUME   587914.498 4136869.944 19.72
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LOCATION L0019789     VOLUME   587930.772 4136970.637 20.63
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LOCATION L0019797     VOLUME   587941.621 4137037.766 19.65
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LOCATION L0019803     VOLUME   587961.565 4137074.141 20.10
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LOCATION L0019806     VOLUME   587986.919 4137076.865 19.89
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LOCATION L0019816     VOLUME   588071.433 4137085.942 18.37
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LOCATION L0019818     VOLUME   588088.335 4137087.758 18.28
LOCATION L0019819     VOLUME   588096.787 4137088.666 18.14
LOCATION L0019820     VOLUME   588105.238 4137089.573 18.02
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LOCATION L0019837     VOLUME   588109.016 4136964.241 18.62
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LOCATION L0019854     VOLUME   588061.501 4136858.195 19.48
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LOCATION L0019857     VOLUME   588036.015 4136859.044 18.47
LOCATION L0019858     VOLUME   588027.520 4136859.327 18.48
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LOCATION L0019861     VOLUME   588002.034 4136860.177 18.60
LOCATION L0019862     VOLUME   587993.539 4136860.460 18.62
LOCATION L0019863     VOLUME   587985.043 4136860.743 18.65
LOCATION L0019864     VOLUME   587976.548 4136861.026 18.65
LOCATION L0019865     VOLUME   587968.053 4136861.310 18.65
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LOCATION L0019871     VOLUME   587928.530 4136872.551 19.04
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LOCATION L0019873     VOLUME   587931.032 4136889.366 19.10
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LOCATION L0019880     VOLUME   587939.792 4136948.218 20.35
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LOCATION L0019884     VOLUME   587944.797 4136981.848 20.04
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LOCATION L0019897     VOLUME   587981.790 4137068.552 19.53
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LOCATION L0019899     VOLUME   587998.757 4137069.600 19.80
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LOCATION L0019903     VOLUME   588032.693 4137071.694 19.21
LOCATION L0019904     VOLUME   588041.177 4137072.218 18.99
LOCATION L0019905     VOLUME   588049.660 4137072.742 18.76
LOCATION L0019906     VOLUME   588058.144 4137073.266 18.55
LOCATION L0019907     VOLUME   588066.628 4137073.789 18.62
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LOCATION L0019921     VOLUME   588100.899 4137003.247 17.81
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LOCATION L0019927     VOLUME   588093.619 4136952.769 18.84
LOCATION L0019928     VOLUME   588092.406 4136944.356 18.88
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LOCATION L0019931     VOLUME   588088.765 4136919.117 19.00
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LOCATION L0019933     VOLUME   588086.339 4136902.291 19.05
LOCATION L0019934     VOLUME   588085.125 4136893.878 19.10
LOCATION L0019935     VOLUME   588083.912 4136885.465 19.24
LOCATION L0019936     VOLUME   588081.154 4136878.875 19.34
LOCATION L0019937     VOLUME   588072.656 4136879.057 19.30
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LOCATION L0019944     VOLUME   588013.170 4136880.331 18.50
LOCATION L0019945     VOLUME   588004.672 4136880.513 18.57
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LOCATION L0019947     VOLUME   587987.675 4136880.878 18.81
LOCATION L0019948     VOLUME   587979.177 4136881.060 18.85
LOCATION L0019949     VOLUME   587970.679 4136881.242 18.86
LOCATION L0019950     VOLUME   587962.181 4136881.424 18.87
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LOCATION L0019952     VOLUME   587950.552 4136886.328 18.80
LOCATION L0019953     VOLUME   587951.780 4136894.739 18.81
LOCATION L0019954     VOLUME   587953.009 4136903.150 18.76
LOCATION L0019955     VOLUME   587954.237 4136911.560 18.72
LOCATION L0019956     VOLUME   587955.466 4136919.971 18.68
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LOCATION L0019960     VOLUME   587960.380 4136953.614 18.77
LOCATION L0019961     VOLUME   587961.608 4136962.025 18.62
LOCATION L0019962     VOLUME   587962.837 4136970.436 18.47
LOCATION L0019963     VOLUME   587964.066 4136978.846 18.33
LOCATION L0019964     VOLUME   587965.294 4136987.257 18.18
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LOCATION L0019967     VOLUME   587968.980 4137012.489 17.81
LOCATION L0019968     VOLUME   587970.208 4137020.900 17.81
LOCATION L0019969     VOLUME   587971.437 4137029.311 17.83
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LOCATION	L0019974	VOLUME	587995.211	4137052.568 18.65
LOCATION	L0019975	VOLUME	588003.683	4137053.257 18.79
LOCATION	L0019976	VOLUME	588012.155	4137053.946 18.79
LOCATION	L0019977	VOLUME	588020.627	4137054.635 18.60
LOCATION	L0019978	VOLUME	588029.099	4137055.323 18.41
LOCATION	L0019979	VOLUME	588037.571	4137056.012 18.32
LOCATION	L0019980	VOLUME	588046.043	4137056.701 18.31
LOCATION	L0019981	VOLUME	588054.515	4137057.390 18.27
LOCATION	L0019982	VOLUME	588062.987	4137058.079 18.29
LOCATION	L0019983	VOLUME	588071.460	4137058.767 18.33
LOCATION	L0019984	VOLUME	588079.932	4137059.456 18.38
LOCATION	L0019985	VOLUME	588088.404	4137060.145 18.26
LOCATION	L0019986	VOLUME	588090.511	4137055.109 18.10
LOCATION	L0019987	VOLUME	588088.932	4137046.757 17.95
LOCATION	L0019988	VOLUME	588087.354	4137038.405 17.90
LOCATION	L0019989	VOLUME	588085.775	4137030.052 17.84
LOCATION	L0019990	VOLUME	588084.196	4137021.700 17.74
LOCATION	L0019991	VOLUME	588082.617	4137013.348 17.64
LOCATION	L0019992	VOLUME	588081.039	4137004.996 17.66
LOCATION	L0019993	VOLUME	588079.460	4136996.644 17.68
LOCATION	L0019994	VOLUME	588077.881	4136988.292 17.70
LOCATION	L0019995	VOLUME	588076.302	4136979.940 17.83
LOCATION	L0019996	VOLUME	588074.724	4136971.588 18.03
LOCATION	L0019997	VOLUME	588073.145	4136963.236 18.21
LOCATION	L0019998	VOLUME	588071.566	4136954.884 18.36
LOCATION	L0019999	VOLUME	588069.987	4136946.531 18.41
LOCATION	L0020000	VOLUME	588068.409	4136938.179 18.43
LOCATION	L0020001	VOLUME	588066.830	4136929.827 18.44
LOCATION	L0020002	VOLUME	588065.251	4136921.475 18.46
LOCATION	L0020003	VOLUME	588063.672	4136913.123 18.60
LOCATION	L0020004	VOLUME	588062.094	4136904.771 18.77
LOCATION	L0020005	VOLUME	588053.836	4136903.944 18.71
LOCATION	L0020006	VOLUME	588045.355	4136903.368 18.64
LOCATION	L0020007	VOLUME	588036.875	4136902.791 18.56
LOCATION	L0020008	VOLUME	588028.394	4136902.215 18.50
LOCATION	L0020009	VOLUME	588019.914	4136901.639 18.44
LOCATION	L0020010	VOLUME	588011.434	4136901.062 18.38
LOCATION	L0020011	VOLUME	588002.953	4136900.486 18.50
LOCATION	L0020012	VOLUME	587994.473	4136899.910 18.65
LOCATION	L0020013	VOLUME	587985.992	4136899.333 18.81
LOCATION	L0020014	VOLUME	587977.512	4136898.757 18.85
LOCATION	L0020015	VOLUME	587969.031	4136898.181 18.89
LOCATION	L0020016	VOLUME	587964.796	4136901.376 18.88
LOCATION	L0020017	VOLUME	587966.365	4136909.730 18.81

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LOCATION L0020021     VOLUME   587972.645 4136943.145 18.58
LOCATION L0020022     VOLUME   587974.215 4136951.499 18.52
LOCATION L0020023     VOLUME   587975.784 4136959.852 18.40
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LOCATION L0020028     VOLUME   587983.634 4137001.621 17.99
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LOCATION L0020052     VOLUME   588051.657 4136954.254 18.20
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LOCATION L0020060     VOLUME   588012.089 4136917.806 18.26
LOCATION L0020061     VOLUME   588003.619 4136917.090 18.33
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LOCATION L0020065     VOLUME   587980.355 4136923.416 18.56
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LOCATION L0020069     VOLUME   587988.043 4136956.535 18.25
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LOCATION L0020071     VOLUME   587991.887 4136973.095 18.13
LOCATION L0020072     VOLUME   587993.809 4136981.375 18.09
LOCATION L0020073     VOLUME   587995.732 4136989.654 18.09
LOCATION L0020074     VOLUME   587997.654 4136997.934 18.10
LOCATION L0020075     VOLUME   587999.576 4137006.214 18.11
LOCATION L0020076     VOLUME   588001.498 4137014.494 18.12
LOCATION L0020077     VOLUME   588004.485 4137021.567 18.17
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LOCATION L0020079     VOLUME   588021.394 4137023.328 18.22
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LOCATION L0020081     VOLUME   588038.302 4137025.090 18.13
LOCATION L0020082     VOLUME   588046.756 4137025.970 18.05
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LOCATION L0020084     VOLUME   588045.667 4137011.482 18.15
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LOCATION L0020089     VOLUME   588036.980 4136969.879 18.26
LOCATION L0020090     VOLUME   588035.243 4136961.559 18.29
LOCATION L0020091     VOLUME   588033.506 4136953.238 18.31
LOCATION L0020092     VOLUME   588031.768 4136944.918 18.33
LOCATION L0020093     VOLUME   588027.566 4136939.207 18.31
LOCATION L0020094     VOLUME   588019.160 4136937.946 18.25
LOCATION L0020095     VOLUME   588010.754 4136936.685 18.19
LOCATION L0020096     VOLUME   588002.348 4136935.424 18.25
LOCATION L0020097     VOLUME   587993.942 4136934.164 18.34
LOCATION L0020098     VOLUME   587994.520 4136940.916 18.30
LOCATION L0020099     VOLUME   587996.730 4136949.124 18.24
LOCATION L0020100     VOLUME   587998.940 4136957.332 18.20
LOCATION L0020101     VOLUME   588001.150 4136965.539 18.17
LOCATION L0020102     VOLUME   588003.359 4136973.747 18.15
LOCATION L0020103     VOLUME   588005.569 4136981.955 18.15
LOCATION L0020104     VOLUME   588007.779 4136990.163 18.16
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LOCATION L0020108     VOLUME   588028.020 4137008.115 18.34
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** LINE VOLUME Source ID = SLINE2
** DESCRSRC South Site On-Site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.000144
** Vertical Dimension = 6.22
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LOCATION L0020261     VOLUME   587833.684 4136676.858 19.83
LOCATION L0020262     VOLUME   587841.936 4136674.819 19.72
LOCATION L0020263     VOLUME   587850.188 4136672.779 19.92
LOCATION L0020264     VOLUME   587858.439 4136670.739 20.13
LOCATION L0020265     VOLUME   587866.691 4136668.700 20.25
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LOCATION L0020267     VOLUME   587883.194 4136664.621 20.24
LOCATION L0020268     VOLUME   587891.446 4136662.581 20.24
LOCATION L0020269     VOLUME   587899.698 4136660.542 20.19
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LOCATION L0020274     VOLUME   587940.956 4136650.344 20.04
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LOCATION L0020276     VOLUME   587948.744 4136660.249 20.15
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LOCATION L0020281     VOLUME   587957.764 4136701.781 20.26
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LOCATION L0020289     VOLUME   587972.195 4136768.232 20.32
LOCATION L0020290     VOLUME   587971.061 4136774.315 20.21
LOCATION L0020291     VOLUME   587962.577 4136774.833 20.20
LOCATION L0020292     VOLUME   587954.093 4136775.352 20.14
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LOCATION L0020296     VOLUME   587920.156 4136777.426 19.75
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LOCATION L0020298     VOLUME   587903.188 4136778.463 19.64
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LOCATION L0020312     VOLUME   587786.469 4136799.207 20.34
LOCATION L0020313     VOLUME   587778.217 4136801.245 20.32
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LOCATION L0020318     VOLUME   587736.957 4136811.435 20.38
LOCATION L0020319     VOLUME   587728.705 4136813.473 20.39
LOCATION L0020320     VOLUME   587720.453 4136815.510 20.40
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LOCATION L0020324     VOLUME   587687.444 4136823.662 20.28
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LOCATION L0020328     VOLUME   587654.436 4136831.813 21.03
LOCATION L0020329     VOLUME   587650.584 4136826.172 21.18
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LOCATION L0020351     VOLUME   587728.282 4136721.125 20.51
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LOCATION L0020358     VOLUME   587785.928 4136706.387 20.54
LOCATION L0020359     VOLUME   587794.163 4136704.281 20.46
LOCATION L0020360     VOLUME   587802.398 4136702.176 20.37
LOCATION L0020361     VOLUME   587810.633 4136700.070 20.28
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LOCATION L0020367     VOLUME   587860.044 4136687.438 20.12
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LOCATION L0020369     VOLUME   587876.514 4136683.227 20.25
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LOCATION L0020372     VOLUME   587901.219 4136676.910 20.25
LOCATION L0020373     VOLUME   587909.455 4136674.805 20.22
LOCATION L0020374     VOLUME   587917.690 4136672.699 20.20
LOCATION L0020375     VOLUME   587925.925 4136670.594 20.18
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LOCATION L0020382     VOLUME   587946.475 4136718.508 20.26
LOCATION L0020383     VOLUME   587948.589 4136726.741 20.28
LOCATION L0020384     VOLUME   587950.703 4136734.974 20.30
LOCATION L0020385     VOLUME   587952.817 4136743.206 20.27
LOCATION L0020386     VOLUME   587954.931 4136751.439 20.25
LOCATION L0020387     VOLUME   587957.044 4136759.672 20.24
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LOCATION L0020389     VOLUME   587943.268 4136762.907 20.12
LOCATION L0020390     VOLUME   587934.780 4136763.348 20.02
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LOCATION L0020393     VOLUME   587909.314 4136764.671 19.64
LOCATION L0020394     VOLUME   587900.825 4136765.112 19.69
LOCATION L0020395     VOLUME   587892.337 4136765.552 19.75
LOCATION L0020396     VOLUME   587883.848 4136765.993 19.79
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LOCATION L0020403     VOLUME   587825.413 4136775.774 20.54
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LOCATION L0020407     VOLUME   587792.390 4136783.866 20.59
LOCATION L0020408     VOLUME   587784.135 4136785.889 20.55
LOCATION L0020409     VOLUME   587775.879 4136787.912 20.52
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LOCATION L0020414     VOLUME   587734.600 4136798.027 20.47
LOCATION L0020415     VOLUME   587726.344 4136800.049 20.46
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LOCATION L0020425     VOLUME   587661.520 4136788.766 20.91
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LOCATION L0020438     VOLUME   587724.825 4136737.331 20.66
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LOCATION L0020456     VOLUME   587873.217 4136700.062 20.18
LOCATION L0020457     VOLUME   587881.461 4136697.992 20.25
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LOCATION	L0020462	VOLUME	587922.681	4136687.639	20.20
LOCATION	L0020463	VOLUME	587926.882	4136692.406	20.20
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LOCATION	L0020467	VOLUME	587935.519	4136725.290	20.25
LOCATION	L0020468	VOLUME	587937.678	4136733.512	20.31
LOCATION	L0020469	VOLUME	587939.837	4136741.733	20.27
LOCATION	L0020470	VOLUME	587941.431	4136749.547	20.21
LOCATION	L0020471	VOLUME	587932.949	4136750.108	20.11
LOCATION	L0020472	VOLUME	587924.468	4136750.669	19.96
LOCATION	L0020473	VOLUME	587915.986	4136751.231	19.81
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LOCATION	L0020475	VOLUME	587899.023	4136752.353	19.83
LOCATION	L0020476	VOLUME	587890.542	4136752.914	19.87
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LOCATION	L0020479	VOLUME	587865.098	4136754.598	19.90
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LOCATION	L0020492	VOLUME	587757.663	4136779.858	20.63
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LOCATION	L0020494	VOLUME	587741.174	4136783.995	20.62
LOCATION	L0020495	VOLUME	587732.930	4136786.064	20.58
LOCATION	L0020496	VOLUME	587724.685	4136788.132	20.54
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LOCATION	L0020502	VOLUME	587678.064	4136795.214	20.61
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LOCATION	L0020505	VOLUME	587669.459	4136771.210	20.51

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LOCATION L0020534     VOLUME   587901.328 4136707.659 20.24
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LOCATION L0020537     VOLUME   587920.624 4136710.888 20.17
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LOCATION L0020539     VOLUME   587925.258 4136727.244 20.14
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LOCATION L0020548     VOLUME   587867.352 4136741.799 19.94
LOCATION L0020549     VOLUME   587858.852 4136741.868 20.05
LOCATION L0020550     VOLUME   587850.371 4136742.068 20.24
LOCATION L0020551     VOLUME   587842.174 4136744.319 20.42
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LOCATION L0020553     VOLUME   587825.781 4136748.819 20.66
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   LOCATION L0020561     VOLUME   587760.206 4136766.820 20.78
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   LOCATION L0020566     VOLUME   587719.223 4136778.070 20.59
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   LOCATION L0020570     VOLUME   587688.570 4136782.989 20.46
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   LOCATION L0020574     VOLUME   587711.057 4136768.912 20.63
   LOCATION L0020575     VOLUME   587719.285 4136766.780 20.66
   LOCATION L0020576     VOLUME   587727.513 4136764.647 20.75
   LOCATION L0020577     VOLUME   587735.741 4136762.515 20.81
   LOCATION L0020578     VOLUME   587743.970 4136760.382 20.85
   LOCATION L0020579     VOLUME   587752.198 4136758.250 20.85
   LOCATION L0020580     VOLUME   587760.426 4136756.118 20.86
   LOCATION L0020581     VOLUME   587768.654 4136753.985 20.89
   LOCATION L0020582     VOLUME   587776.882 4136751.853 20.94
   LOCATION L0020583     VOLUME   587785.111 4136749.721 20.99
   LOCATION L0020584     VOLUME   587793.339 4136747.588 21.01
   LOCATION L0020585     VOLUME   587801.567 4136745.456 20.94
   LOCATION L0020586     VOLUME   587809.795 4136743.323 20.87
   LOCATION L0020587     VOLUME   587818.023 4136741.191 20.77
   LOCATION L0020588     VOLUME   587826.251 4136739.059 20.66
   LOCATION L0020589     VOLUME   587834.480 4136736.926 20.57
   LOCATION L0020590     VOLUME   587842.708 4136734.794 20.44
   LOCATION L0020591     VOLUME   587850.936 4136732.662 20.24
   LOCATION L0020592     VOLUME   587859.164 4136730.529 20.07
   LOCATION L0020593     VOLUME   587867.392 4136728.397 19.99
   LOCATION L0020594     VOLUME   587875.621 4136726.264 20.05
   LOCATION L0020595     VOLUME   587883.849 4136724.132 20.11
   LOCATION L0020596     VOLUME   587892.077 4136722.000 20.14
   LOCATION L0020597     VOLUME   587900.305 4136719.867 20.13
   LOCATION L0020598     VOLUME   587908.533 4136717.735 20.11
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** Source Parameters **
** LINE VOLUME Source ID = SLINE1
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SRCPARAM L0020512     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020513     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020514     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020515     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020516     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020517     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020518     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020519     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020520     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020521     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020522     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020523     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020524     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020525     0.0000002981      3.11      3.95      2.89
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SRCPARAM L0020526     0.0000002981      3.11      3.95      2.89
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SRCPARAM L0020528     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020529     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020530     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020531     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020532     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020533     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020534     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020535     0.0000002981      3.11      3.95      2.89
SRCPARAM L0020536     0.0000002981      3.11      3.95      2.89
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SRCPARAM L0020538     0.0000002981      3.11      3.95      2.89
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   SRCPARAM L0020589     0.0000002981      3.11      3.95      2.89
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   SRCGROUP ALL
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** AERMOD Receptor Pathway
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RE FINISHED
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** AERMOD Meteorology Pathway
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Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
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   UAIRDATA 23230 2009 OAKLAND/WSO_AP
   PROFBASE 11.9 METERS
ME FINISHED
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** AERMOD Output Pathway
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OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "INTUITIVE TIER 4 1.13.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "INTUITIVE TIER 4 1.13.AD\24H1GALL.PLT" 32
   PLOTFILE 24 ALL 8TH "INTUITIVE TIER 4 1.13.AD\24H8GALL.PLT" 33
   PLOTFILE ANNUAL ALL "INTUITIVE TIER 4 1.13.AD\AN00GALL.PLT" 34
   SUMMFILE "Intuitive Tier 4 1.13.sum"
OU FINISHED
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** Project Parameters
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** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
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** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 1/14/2020
** File: C:\Lakes\AERMOD View\Intuitive Tier 4 1.13\Intuitive Tier 4 1.13.ADI
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** AERMOD Control Pathway
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CO STARTING
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   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL "Intuitive Tier 4 1.13.err"
CO FINISHED
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** AERMOD Source Pathway
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**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC North Site On-site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.000138
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 31
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   LOCATION L0019665     VOLUME   587893.420 4136846.714 19.35
   LOCATION L0019666     VOLUME   587894.974 4136855.071 19.37
   LOCATION L0019667     VOLUME   587896.528 4136863.428 19.41
   LOCATION L0019668     VOLUME   587898.082 4136871.785 19.54
   LOCATION L0019669     VOLUME   587899.636 4136880.141 19.74
   LOCATION L0019670     VOLUME   587901.190 4136888.498 20.01
   LOCATION L0019671     VOLUME   587902.744 4136896.855 20.11
   LOCATION L0019672     VOLUME   587904.298 4136905.212 20.14
   LOCATION L0019673     VOLUME   587905.852 4136913.568 20.13
   LOCATION L0019674     VOLUME   587907.406 4136921.925 20.07
   LOCATION L0019675     VOLUME   587908.960 4136930.282 19.85
   LOCATION L0019676     VOLUME   587910.514 4136938.639 19.59
   LOCATION L0019677     VOLUME   587912.068 4136946.995 19.35
   LOCATION L0019678     VOLUME   587913.622 4136955.352 19.28
   LOCATION L0019679     VOLUME   587915.176 4136963.709 19.29
   LOCATION L0019680     VOLUME   587916.730 4136972.066 19.33
   LOCATION L0019681     VOLUME   587918.283 4136980.422 19.39
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LOCATION	L0019683	VOLUME	587921.391	4136997.136 19.53
LOCATION	L0019684	VOLUME	587922.945	4137005.493 19.59
LOCATION	L0019685	VOLUME	587924.499	4137013.849 19.64
LOCATION	L0019686	VOLUME	587926.053	4137022.206 19.75
LOCATION	L0019687	VOLUME	587927.607	4137030.563 19.84
LOCATION	L0019688	VOLUME	587929.161	4137038.919 19.93
LOCATION	L0019689	VOLUME	587930.715	4137047.276 19.93
LOCATION	L0019690	VOLUME	587932.269	4137055.633 19.73
LOCATION	L0019691	VOLUME	587933.823	4137063.990 19.48
LOCATION	L0019692	VOLUME	587935.377	4137072.346 19.18
LOCATION	L0019693	VOLUME	587937.453	4137080.144 18.90
LOCATION	L0019694	VOLUME	587945.897	4137081.116 19.17
LOCATION	L0019695	VOLUME	587954.341	4137082.089 19.42
LOCATION	L0019696	VOLUME	587962.785	4137083.061 19.48
LOCATION	L0019697	VOLUME	587971.230	4137084.034 19.32
LOCATION	L0019698	VOLUME	587979.674	4137085.006 19.17
LOCATION	L0019699	VOLUME	587988.118	4137085.979 19.12
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LOCATION	L0019701	VOLUME	588005.006	4137087.924 19.14
LOCATION	L0019702	VOLUME	588013.451	4137088.896 18.98
LOCATION	L0019703	VOLUME	588021.895	4137089.869 18.76
LOCATION	L0019704	VOLUME	588030.339	4137090.841 18.56
LOCATION	L0019705	VOLUME	588038.783	4137091.814 18.36
LOCATION	L0019706	VOLUME	588047.194	4137093.003 18.17
LOCATION	L0019707	VOLUME	588055.539	4137094.617 17.98
LOCATION	L0019708	VOLUME	588063.884	4137096.232 17.94
LOCATION	L0019709	VOLUME	588072.230	4137097.846 17.93
LOCATION	L0019710	VOLUME	588080.575	4137099.460 17.92
LOCATION	L0019711	VOLUME	588088.920	4137101.074 17.88
LOCATION	L0019712	VOLUME	588097.266	4137102.689 17.86
LOCATION	L0019713	VOLUME	588105.611	4137104.303 17.88
LOCATION	L0019714	VOLUME	588113.956	4137105.917 18.11
LOCATION	L0019715	VOLUME	588122.302	4137107.531 18.38
LOCATION	L0019716	VOLUME	588130.647	4137109.146 18.58
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LOCATION	L0019720	VOLUME	588133.091	4137081.441 18.36
LOCATION	L0019721	VOLUME	588132.309	4137072.977 18.48
LOCATION	L0019722	VOLUME	588131.526	4137064.513 18.80
LOCATION	L0019723	VOLUME	588130.744	4137056.049 19.06
LOCATION	L0019724	VOLUME	588129.961	4137047.586 19.28
LOCATION	L0019725	VOLUME	588129.178	4137039.122 19.06
LOCATION	L0019726	VOLUME	588128.396	4137030.658 18.80
LOCATION	L0019727	VOLUME	588127.613	4137022.194 18.55
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LOCATION	L0019730	VOLUME	588125.265	4136996.802 18.33
LOCATION	L0019731	VOLUME	588124.483	4136988.338 18.29
LOCATION	L0019732	VOLUME	588123.700	4136979.874 18.35
LOCATION	L0019733	VOLUME	588122.918	4136971.411 18.51
LOCATION	L0019734	VOLUME	588122.135	4136962.947 18.69
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LOCATION	L0019736	VOLUME	588120.570	4136946.019 18.96
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LOCATION	L0019738	VOLUME	588119.005	4136929.091 19.04
LOCATION	L0019739	VOLUME	588118.222	4136920.627 19.06
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LOCATION	L0019747	VOLUME	588111.962	4136852.916 19.33
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LOCATION	L0019749	VOLUME	588110.396	4136835.988 19.38
LOCATION	L0019750	VOLUME	588106.318	4136831.265 19.37
LOCATION	L0019751	VOLUME	588097.823	4136831.554 19.30
LOCATION	L0019752	VOLUME	588089.328	4136831.842 19.24
LOCATION	L0019753	VOLUME	588080.832	4136832.131 19.24
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LOCATION	L0019770	VOLUME	587936.416	4136837.040 19.26
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LOCATION	L0019772	VOLUME	587919.426	4136837.618 19.28
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LOCATION	L0019774	VOLUME	587910.430	4136844.770 19.31
LOCATION	L0019775	VOLUME	587911.786	4136853.161 19.32
LOCATION	L0019776	VOLUME	587913.142	4136861.552 19.41
LOCATION	L0019777	VOLUME	587914.498	4136869.944 19.72

LOCATION	L0019778	VOLUME	587915.854	4136878.335 19.99
LOCATION	L0019779	VOLUME	587917.210	4136886.726 20.21
LOCATION	L0019780	VOLUME	587918.567	4136895.117 20.12
LOCATION	L0019781	VOLUME	587919.923	4136903.508 19.86
LOCATION	L0019782	VOLUME	587921.279	4136911.899 19.61
LOCATION	L0019783	VOLUME	587922.635	4136920.290 19.36
LOCATION	L0019784	VOLUME	587923.991	4136928.681 19.45
LOCATION	L0019785	VOLUME	587925.347	4136937.073 19.69
LOCATION	L0019786	VOLUME	587926.703	4136945.464 20.04
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LOCATION	L0019794	VOLUME	587937.552	4137012.593 20.31
LOCATION	L0019795	VOLUME	587938.909	4137020.984 20.08
LOCATION	L0019796	VOLUME	587940.265	4137029.375 19.86
LOCATION	L0019797	VOLUME	587941.621	4137037.766 19.65
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LOCATION	L0019799	VOLUME	587944.333	4137054.548 19.36
LOCATION	L0019800	VOLUME	587945.651	4137062.942 19.40
LOCATION	L0019801	VOLUME	587945.646	4137071.442 19.52
LOCATION	L0019802	VOLUME	587953.113	4137073.234 19.83
LOCATION	L0019803	VOLUME	587961.565	4137074.141 20.10
LOCATION	L0019804	VOLUME	587970.016	4137075.049 20.08
LOCATION	L0019805	VOLUME	587978.467	4137075.957 19.97
LOCATION	L0019806	VOLUME	587986.919	4137076.865 19.89
LOCATION	L0019807	VOLUME	587995.370	4137077.772 19.95
LOCATION	L0019808	VOLUME	588003.822	4137078.680 20.00
LOCATION	L0019809	VOLUME	588012.273	4137079.588 19.85
LOCATION	L0019810	VOLUME	588020.724	4137080.496 19.52
LOCATION	L0019811	VOLUME	588029.176	4137081.403 19.21
LOCATION	L0019812	VOLUME	588037.627	4137082.311 18.92
LOCATION	L0019813	VOLUME	588046.078	4137083.219 18.65
LOCATION	L0019814	VOLUME	588054.530	4137084.127 18.39
LOCATION	L0019815	VOLUME	588062.981	4137085.035 18.34
LOCATION	L0019816	VOLUME	588071.433	4137085.942 18.37
LOCATION	L0019817	VOLUME	588079.884	4137086.850 18.39
LOCATION	L0019818	VOLUME	588088.335	4137087.758 18.28
LOCATION	L0019819	VOLUME	588096.787	4137088.666 18.14
LOCATION	L0019820	VOLUME	588105.238	4137089.573 18.02
LOCATION	L0019821	VOLUME	588113.690	4137090.481 18.15
LOCATION	L0019822	VOLUME	588121.847	4137091.093 18.31
LOCATION	L0019823	VOLUME	588120.992	4137082.636 18.28
LOCATION	L0019824	VOLUME	588120.136	4137074.180 18.29
LOCATION	L0019825	VOLUME	588119.281	4137065.723 18.36

LOCATION	L0019826	VOLUME	588118.425	4137057.266 18.39
LOCATION	L0019827	VOLUME	588117.570	4137048.809 18.39
LOCATION	L0019828	VOLUME	588116.715	4137040.352 18.31
LOCATION	L0019829	VOLUME	588115.859	4137031.895 18.22
LOCATION	L0019830	VOLUME	588115.004	4137023.439 18.17
LOCATION	L0019831	VOLUME	588114.148	4137014.982 18.14
LOCATION	L0019832	VOLUME	588113.293	4137006.525 18.05
LOCATION	L0019833	VOLUME	588112.437	4136998.068 17.96
LOCATION	L0019834	VOLUME	588111.582	4136989.611 17.85
LOCATION	L0019835	VOLUME	588110.726	4136981.154 17.90
LOCATION	L0019836	VOLUME	588109.871	4136972.697 18.25
LOCATION	L0019837	VOLUME	588109.016	4136964.241 18.62
LOCATION	L0019838	VOLUME	588108.160	4136955.784 19.03
LOCATION	L0019839	VOLUME	588107.305	4136947.327 19.15
LOCATION	L0019840	VOLUME	588106.449	4136938.870 19.17
LOCATION	L0019841	VOLUME	588105.594	4136930.413 19.19
LOCATION	L0019842	VOLUME	588104.738	4136921.956 19.20
LOCATION	L0019843	VOLUME	588103.883	4136913.500 19.11
LOCATION	L0019844	VOLUME	588103.027	4136905.043 19.03
LOCATION	L0019845	VOLUME	588102.172	4136896.586 18.97
LOCATION	L0019846	VOLUME	588101.317	4136888.129 19.00
LOCATION	L0019847	VOLUME	588100.461	4136879.672 19.15
LOCATION	L0019848	VOLUME	588099.606	4136871.215 19.30
LOCATION	L0019849	VOLUME	588098.750	4136862.759 19.45
LOCATION	L0019850	VOLUME	588095.482	4136857.062 19.49
LOCATION	L0019851	VOLUME	588086.987	4136857.345 19.59
LOCATION	L0019852	VOLUME	588078.491	4136857.628 19.59
LOCATION	L0019853	VOLUME	588069.996	4136857.911 19.54
LOCATION	L0019854	VOLUME	588061.501	4136858.195 19.48
LOCATION	L0019855	VOLUME	588053.006	4136858.478 19.19
LOCATION	L0019856	VOLUME	588044.510	4136858.761 18.83
LOCATION	L0019857	VOLUME	588036.015	4136859.044 18.47
LOCATION	L0019858	VOLUME	588027.520	4136859.327 18.48
LOCATION	L0019859	VOLUME	588019.024	4136859.611 18.54
LOCATION	L0019860	VOLUME	588010.529	4136859.894 18.59
LOCATION	L0019861	VOLUME	588002.034	4136860.177 18.60
LOCATION	L0019862	VOLUME	587993.539	4136860.460 18.62
LOCATION	L0019863	VOLUME	587985.043	4136860.743 18.65
LOCATION	L0019864	VOLUME	587976.548	4136861.026 18.65
LOCATION	L0019865	VOLUME	587968.053	4136861.310 18.65
LOCATION	L0019866	VOLUME	587959.558	4136861.593 18.65
LOCATION	L0019867	VOLUME	587951.062	4136861.876 18.62
LOCATION	L0019868	VOLUME	587942.567	4136862.159 18.58
LOCATION	L0019869	VOLUME	587934.072	4136862.442 18.65
LOCATION	L0019870	VOLUME	587927.278	4136864.144 18.94
LOCATION	L0019871	VOLUME	587928.530	4136872.551 19.04
LOCATION	L0019872	VOLUME	587929.781	4136880.959 19.09
LOCATION	L0019873	VOLUME	587931.032	4136889.366 19.10

LOCATION	L0019874	VOLUME	587932.284	4136897.774 18.90
LOCATION	L0019875	VOLUME	587933.535	4136906.181 18.68
LOCATION	L0019876	VOLUME	587934.786	4136914.588 18.47
LOCATION	L0019877	VOLUME	587936.038	4136922.996 18.48
LOCATION	L0019878	VOLUME	587937.289	4136931.403 19.18
LOCATION	L0019879	VOLUME	587938.540	4136939.811 19.80
LOCATION	L0019880	VOLUME	587939.792	4136948.218 20.35
LOCATION	L0019881	VOLUME	587941.043	4136956.625 20.49
LOCATION	L0019882	VOLUME	587942.294	4136965.033 20.36
LOCATION	L0019883	VOLUME	587943.546	4136973.440 20.21
LOCATION	L0019884	VOLUME	587944.797	4136981.848 20.04
LOCATION	L0019885	VOLUME	587946.048	4136990.255 19.74
LOCATION	L0019886	VOLUME	587947.300	4136998.662 19.44
LOCATION	L0019887	VOLUME	587948.551	4137007.070 19.12
LOCATION	L0019888	VOLUME	587949.802	4137015.477 18.84
LOCATION	L0019889	VOLUME	587951.054	4137023.884 18.65
LOCATION	L0019890	VOLUME	587952.305	4137032.292 18.47
LOCATION	L0019891	VOLUME	587953.556	4137040.699 18.30
LOCATION	L0019892	VOLUME	587954.808	4137049.107 18.42
LOCATION	L0019893	VOLUME	587956.059	4137057.514 18.88
LOCATION	L0019894	VOLUME	587957.310	4137065.921 19.44
LOCATION	L0019895	VOLUME	587964.822	4137067.505 19.54
LOCATION	L0019896	VOLUME	587973.306	4137068.029 19.54
LOCATION	L0019897	VOLUME	587981.790	4137068.552 19.53
LOCATION	L0019898	VOLUME	587990.273	4137069.076 19.64
LOCATION	L0019899	VOLUME	587998.757	4137069.600 19.80
LOCATION	L0019900	VOLUME	588007.241	4137070.123 19.95
LOCATION	L0019901	VOLUME	588015.725	4137070.647 19.74
LOCATION	L0019902	VOLUME	588024.209	4137071.171 19.48
LOCATION	L0019903	VOLUME	588032.693	4137071.694 19.21
LOCATION	L0019904	VOLUME	588041.177	4137072.218 18.99
LOCATION	L0019905	VOLUME	588049.660	4137072.742 18.76
LOCATION	L0019906	VOLUME	588058.144	4137073.266 18.55
LOCATION	L0019907	VOLUME	588066.628	4137073.789 18.62
LOCATION	L0019908	VOLUME	588075.112	4137074.313 18.69
LOCATION	L0019909	VOLUME	588083.596	4137074.837 18.71
LOCATION	L0019910	VOLUME	588092.080	4137075.360 18.49
LOCATION	L0019911	VOLUME	588100.563	4137075.884 18.26
LOCATION	L0019912	VOLUME	588109.047	4137076.408 18.13
LOCATION	L0019913	VOLUME	588110.607	4137070.550 18.10
LOCATION	L0019914	VOLUME	588109.393	4137062.137 17.98
LOCATION	L0019915	VOLUME	588108.180	4137053.724 17.81
LOCATION	L0019916	VOLUME	588106.967	4137045.311 17.62
LOCATION	L0019917	VOLUME	588105.753	4137036.898 17.74
LOCATION	L0019918	VOLUME	588104.540	4137028.485 17.84
LOCATION	L0019919	VOLUME	588103.326	4137020.072 17.91
LOCATION	L0019920	VOLUME	588102.113	4137011.660 17.90
LOCATION	L0019921	VOLUME	588100.899	4137003.247 17.81

LOCATION	L0019922	VOLUME	588099.686	4136994.834 17.73
LOCATION	L0019923	VOLUME	588098.473	4136986.421 17.66
LOCATION	L0019924	VOLUME	588097.259	4136978.008 17.90
LOCATION	L0019925	VOLUME	588096.046	4136969.595 18.24
LOCATION	L0019926	VOLUME	588094.832	4136961.182 18.56
LOCATION	L0019927	VOLUME	588093.619	4136952.769 18.84
LOCATION	L0019928	VOLUME	588092.406	4136944.356 18.88
LOCATION	L0019929	VOLUME	588091.192	4136935.943 18.92
LOCATION	L0019930	VOLUME	588089.979	4136927.530 18.97
LOCATION	L0019931	VOLUME	588088.765	4136919.117 19.00
LOCATION	L0019932	VOLUME	588087.552	4136910.704 19.02
LOCATION	L0019933	VOLUME	588086.339	4136902.291 19.05
LOCATION	L0019934	VOLUME	588085.125	4136893.878 19.10
LOCATION	L0019935	VOLUME	588083.912	4136885.465 19.24
LOCATION	L0019936	VOLUME	588081.154	4136878.875 19.34
LOCATION	L0019937	VOLUME	588072.656	4136879.057 19.30
LOCATION	L0019938	VOLUME	588064.158	4136879.239 19.26
LOCATION	L0019939	VOLUME	588055.660	4136879.421 19.13
LOCATION	L0019940	VOLUME	588047.162	4136879.603 18.88
LOCATION	L0019941	VOLUME	588038.664	4136879.785 18.64
LOCATION	L0019942	VOLUME	588030.166	4136879.967 18.53
LOCATION	L0019943	VOLUME	588021.668	4136880.149 18.51
LOCATION	L0019944	VOLUME	588013.170	4136880.331 18.50
LOCATION	L0019945	VOLUME	588004.672	4136880.513 18.57
LOCATION	L0019946	VOLUME	587996.174	4136880.696 18.69
LOCATION	L0019947	VOLUME	587987.675	4136880.878 18.81
LOCATION	L0019948	VOLUME	587979.177	4136881.060 18.85
LOCATION	L0019949	VOLUME	587970.679	4136881.242 18.86
LOCATION	L0019950	VOLUME	587962.181	4136881.424 18.87
LOCATION	L0019951	VOLUME	587953.683	4136881.606 18.80
LOCATION	L0019952	VOLUME	587950.552	4136886.328 18.80
LOCATION	L0019953	VOLUME	587951.780	4136894.739 18.81
LOCATION	L0019954	VOLUME	587953.009	4136903.150 18.76
LOCATION	L0019955	VOLUME	587954.237	4136911.560 18.72
LOCATION	L0019956	VOLUME	587955.466	4136919.971 18.68
LOCATION	L0019957	VOLUME	587956.694	4136928.382 18.80
LOCATION	L0019958	VOLUME	587957.923	4136936.793 18.87
LOCATION	L0019959	VOLUME	587959.151	4136945.203 18.87
LOCATION	L0019960	VOLUME	587960.380	4136953.614 18.77
LOCATION	L0019961	VOLUME	587961.608	4136962.025 18.62
LOCATION	L0019962	VOLUME	587962.837	4136970.436 18.47
LOCATION	L0019963	VOLUME	587964.066	4136978.846 18.33
LOCATION	L0019964	VOLUME	587965.294	4136987.257 18.18
LOCATION	L0019965	VOLUME	587966.523	4136995.668 18.04
LOCATION	L0019966	VOLUME	587967.751	4137004.079 17.92
LOCATION	L0019967	VOLUME	587968.980	4137012.489 17.81
LOCATION	L0019968	VOLUME	587970.208	4137020.900 17.81
LOCATION	L0019969	VOLUME	587971.437	4137029.311 17.83

LOCATION	L0019970	VOLUME	587972.665	4137037.722 17.85
LOCATION	L0019971	VOLUME	587973.894	4137046.132 17.98
LOCATION	L0019972	VOLUME	587978.267	4137051.191 18.38
LOCATION	L0019973	VOLUME	587986.739	4137051.880 18.51
LOCATION	L0019974	VOLUME	587995.211	4137052.568 18.65
LOCATION	L0019975	VOLUME	588003.683	4137053.257 18.79
LOCATION	L0019976	VOLUME	588012.155	4137053.946 18.79
LOCATION	L0019977	VOLUME	588020.627	4137054.635 18.60
LOCATION	L0019978	VOLUME	588029.099	4137055.323 18.41
LOCATION	L0019979	VOLUME	588037.571	4137056.012 18.32
LOCATION	L0019980	VOLUME	588046.043	4137056.701 18.31
LOCATION	L0019981	VOLUME	588054.515	4137057.390 18.27
LOCATION	L0019982	VOLUME	588062.987	4137058.079 18.29
LOCATION	L0019983	VOLUME	588071.460	4137058.767 18.33
LOCATION	L0019984	VOLUME	588079.932	4137059.456 18.38
LOCATION	L0019985	VOLUME	588088.404	4137060.145 18.26
LOCATION	L0019986	VOLUME	588090.511	4137055.109 18.10
LOCATION	L0019987	VOLUME	588088.932	4137046.757 17.95
LOCATION	L0019988	VOLUME	588087.354	4137038.405 17.90
LOCATION	L0019989	VOLUME	588085.775	4137030.052 17.84
LOCATION	L0019990	VOLUME	588084.196	4137021.700 17.74
LOCATION	L0019991	VOLUME	588082.617	4137013.348 17.64
LOCATION	L0019992	VOLUME	588081.039	4137004.996 17.66
LOCATION	L0019993	VOLUME	588079.460	4136996.644 17.68
LOCATION	L0019994	VOLUME	588077.881	4136988.292 17.70
LOCATION	L0019995	VOLUME	588076.302	4136979.940 17.83
LOCATION	L0019996	VOLUME	588074.724	4136971.588 18.03
LOCATION	L0019997	VOLUME	588073.145	4136963.236 18.21
LOCATION	L0019998	VOLUME	588071.566	4136954.884 18.36
LOCATION	L0019999	VOLUME	588069.987	4136946.531 18.41
LOCATION	L0020000	VOLUME	588068.409	4136938.179 18.43
LOCATION	L0020001	VOLUME	588066.830	4136929.827 18.44
LOCATION	L0020002	VOLUME	588065.251	4136921.475 18.46
LOCATION	L0020003	VOLUME	588063.672	4136913.123 18.60
LOCATION	L0020004	VOLUME	588062.094	4136904.771 18.77
LOCATION	L0020005	VOLUME	588053.836	4136903.944 18.71
LOCATION	L0020006	VOLUME	588045.355	4136903.368 18.64
LOCATION	L0020007	VOLUME	588036.875	4136902.791 18.56
LOCATION	L0020008	VOLUME	588028.394	4136902.215 18.50
LOCATION	L0020009	VOLUME	588019.914	4136901.639 18.44
LOCATION	L0020010	VOLUME	588011.434	4136901.062 18.38
LOCATION	L0020011	VOLUME	588002.953	4136900.486 18.50
LOCATION	L0020012	VOLUME	587994.473	4136899.910 18.65
LOCATION	L0020013	VOLUME	587985.992	4136899.333 18.81
LOCATION	L0020014	VOLUME	587977.512	4136898.757 18.85
LOCATION	L0020015	VOLUME	587969.031	4136898.181 18.89
LOCATION	L0020016	VOLUME	587964.796	4136901.376 18.88
LOCATION	L0020017	VOLUME	587966.365	4136909.730 18.81

LOCATION	L0020018	VOLUME	587967.935	4136918.083 18.72
LOCATION	L0020019	VOLUME	587969.505	4136926.437 18.67
LOCATION	L0020020	VOLUME	587971.075	4136934.791 18.63
LOCATION	L0020021	VOLUME	587972.645	4136943.145 18.58
LOCATION	L0020022	VOLUME	587974.215	4136951.499 18.52
LOCATION	L0020023	VOLUME	587975.784	4136959.852 18.40
LOCATION	L0020024	VOLUME	587977.354	4136968.206 18.28
LOCATION	L0020025	VOLUME	587978.924	4136976.560 18.17
LOCATION	L0020026	VOLUME	587980.494	4136984.914 18.07
LOCATION	L0020027	VOLUME	587982.064	4136993.267 18.02
LOCATION	L0020028	VOLUME	587983.634	4137001.621 17.99
LOCATION	L0020029	VOLUME	587985.204	4137009.975 17.98
LOCATION	L0020030	VOLUME	587986.773	4137018.329 18.00
LOCATION	L0020031	VOLUME	587988.343	4137026.683 18.03
LOCATION	L0020032	VOLUME	587989.913	4137035.036 18.07
LOCATION	L0020033	VOLUME	587994.720	4137039.634 18.13
LOCATION	L0020034	VOLUME	588003.214	4137039.952 18.22
LOCATION	L0020035	VOLUME	588011.708	4137040.271 18.22
LOCATION	L0020036	VOLUME	588020.202	4137040.589 18.07
LOCATION	L0020037	VOLUME	588028.696	4137040.908 17.92
LOCATION	L0020038	VOLUME	588037.190	4137041.226 17.87
LOCATION	L0020039	VOLUME	588045.684	4137041.545 17.93
LOCATION	L0020040	VOLUME	588054.178	4137041.863 18.00
LOCATION	L0020041	VOLUME	588062.672	4137042.182 18.02
LOCATION	L0020042	VOLUME	588066.055	4137038.026 17.99
LOCATION	L0020043	VOLUME	588064.615	4137029.649 17.94
LOCATION	L0020044	VOLUME	588063.175	4137021.272 17.89
LOCATION	L0020045	VOLUME	588061.735	4137012.895 17.87
LOCATION	L0020046	VOLUME	588060.296	4137004.517 17.89
LOCATION	L0020047	VOLUME	588058.856	4136996.140 17.92
LOCATION	L0020048	VOLUME	588057.416	4136987.763 17.95
LOCATION	L0020049	VOLUME	588055.976	4136979.386 18.00
LOCATION	L0020050	VOLUME	588054.536	4136971.009 18.07
LOCATION	L0020051	VOLUME	588053.096	4136962.632 18.14
LOCATION	L0020052	VOLUME	588051.657	4136954.254 18.20
LOCATION	L0020053	VOLUME	588050.217	4136945.877 18.24
LOCATION	L0020054	VOLUME	588048.777	4136937.500 18.28
LOCATION	L0020055	VOLUME	588047.337	4136929.123 18.32
LOCATION	L0020056	VOLUME	588045.897	4136920.746 18.38
LOCATION	L0020057	VOLUME	588037.498	4136919.953 18.42
LOCATION	L0020058	VOLUME	588029.028	4136919.237 18.40
LOCATION	L0020059	VOLUME	588020.559	4136918.522 18.33
LOCATION	L0020060	VOLUME	588012.089	4136917.806 18.26
LOCATION	L0020061	VOLUME	588003.619	4136917.090 18.33
LOCATION	L0020062	VOLUME	587995.149	4136916.374 18.46
LOCATION	L0020063	VOLUME	587986.679	4136915.659 18.58
LOCATION	L0020064	VOLUME	587978.433	4136915.136 18.67
LOCATION	L0020065	VOLUME	587980.355	4136923.416 18.56

LOCATION	L0020066	VOLUME	587982.277	4136931.696	18.49
LOCATION	L0020067	VOLUME	587984.199	4136939.975	18.41
LOCATION	L0020068	VOLUME	587986.121	4136948.255	18.32
LOCATION	L0020069	VOLUME	587988.043	4136956.535	18.25
LOCATION	L0020070	VOLUME	587989.965	4136964.815	18.19
LOCATION	L0020071	VOLUME	587991.887	4136973.095	18.13
LOCATION	L0020072	VOLUME	587993.809	4136981.375	18.09
LOCATION	L0020073	VOLUME	587995.732	4136989.654	18.09
LOCATION	L0020074	VOLUME	587997.654	4136997.934	18.10
LOCATION	L0020075	VOLUME	587999.576	4137006.214	18.11
LOCATION	L0020076	VOLUME	588001.498	4137014.494	18.12
LOCATION	L0020077	VOLUME	588004.485	4137021.567	18.17
LOCATION	L0020078	VOLUME	588012.939	4137022.448	18.22
LOCATION	L0020079	VOLUME	588021.394	4137023.328	18.22
LOCATION	L0020080	VOLUME	588029.848	4137024.209	18.20
LOCATION	L0020081	VOLUME	588038.302	4137025.090	18.13
LOCATION	L0020082	VOLUME	588046.756	4137025.970	18.05
LOCATION	L0020083	VOLUME	588047.404	4137019.803	18.09
LOCATION	L0020084	VOLUME	588045.667	4137011.482	18.15
LOCATION	L0020085	VOLUME	588043.929	4137003.162	18.17
LOCATION	L0020086	VOLUME	588042.192	4136994.841	18.18
LOCATION	L0020087	VOLUME	588040.455	4136986.521	18.19
LOCATION	L0020088	VOLUME	588038.718	4136978.200	18.22
LOCATION	L0020089	VOLUME	588036.980	4136969.879	18.26
LOCATION	L0020090	VOLUME	588035.243	4136961.559	18.29
LOCATION	L0020091	VOLUME	588033.506	4136953.238	18.31
LOCATION	L0020092	VOLUME	588031.768	4136944.918	18.33
LOCATION	L0020093	VOLUME	588027.566	4136939.207	18.31
LOCATION	L0020094	VOLUME	588019.160	4136937.946	18.25
LOCATION	L0020095	VOLUME	588010.754	4136936.685	18.19
LOCATION	L0020096	VOLUME	588002.348	4136935.424	18.25
LOCATION	L0020097	VOLUME	587993.942	4136934.164	18.34
LOCATION	L0020098	VOLUME	587994.520	4136940.916	18.30
LOCATION	L0020099	VOLUME	587996.730	4136949.124	18.24
LOCATION	L0020100	VOLUME	587998.940	4136957.332	18.20
LOCATION	L0020101	VOLUME	588001.150	4136965.539	18.17
LOCATION	L0020102	VOLUME	588003.359	4136973.747	18.15
LOCATION	L0020103	VOLUME	588005.569	4136981.955	18.15
LOCATION	L0020104	VOLUME	588007.779	4136990.163	18.16
LOCATION	L0020105	VOLUME	588009.989	4136998.370	18.18
LOCATION	L0020106	VOLUME	588012.199	4137006.578	18.21
LOCATION	L0020107	VOLUME	588019.520	4137008.115	18.27
LOCATION	L0020108	VOLUME	588028.020	4137008.115	18.34
LOCATION	L0020109	VOLUME	588029.127	4137002.477	18.32
LOCATION	L0020110	VOLUME	588026.880	4136994.279	18.28
LOCATION	L0020111	VOLUME	588024.632	4136986.082	18.24
LOCATION	L0020112	VOLUME	588022.384	4136977.884	18.23
LOCATION	L0020113	VOLUME	588020.137	4136969.687	18.22

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   LOCATION L0020114     VOLUME   588017.889 4136961.489 18.20
   LOCATION L0020115     VOLUME   588015.641 4136953.292 18.19
** End of LINE VOLUME Source ID = SLINE1
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** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC South Site On-Site
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 0.000144
** Vertical Dimension = 6.22
** SZINIT = 2.89
** Nodes = 27
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** 587993.077, 4136787.440, 19.66, 3.11, 3.95
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   LOCATION L0020117     VOLUME   587623.731 4136709.302 21.06
   LOCATION L0020118     VOLUME   587632.005 4136707.353 20.92
   LOCATION L0020119     VOLUME   587640.278 4136705.404 20.82
   LOCATION L0020120     VOLUME   587648.551 4136703.454 20.80
   LOCATION L0020121     VOLUME   587656.825 4136701.505 20.84
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LOCATION L0020123     VOLUME   587673.372 4136697.606 20.92
LOCATION L0020124     VOLUME   587681.645 4136695.657 20.90
LOCATION L0020125     VOLUME   587689.919 4136693.708 20.89
LOCATION L0020126     VOLUME   587698.192 4136691.758 20.86
LOCATION L0020127     VOLUME   587706.466 4136689.809 20.80
LOCATION L0020128     VOLUME   587714.739 4136687.860 20.71
LOCATION L0020129     VOLUME   587723.013 4136685.910 20.68
LOCATION L0020130     VOLUME   587731.286 4136683.961 20.67
LOCATION L0020131     VOLUME   587739.560 4136682.012 20.64
LOCATION L0020132     VOLUME   587747.833 4136680.062 20.65
LOCATION L0020133     VOLUME   587756.106 4136678.113 20.67
LOCATION L0020134     VOLUME   587764.380 4136676.164 20.67
LOCATION L0020135     VOLUME   587772.653 4136674.214 20.67
LOCATION L0020136     VOLUME   587780.927 4136672.265 20.68
LOCATION L0020137     VOLUME   587789.200 4136670.316 20.73
LOCATION L0020138     VOLUME   587797.474 4136668.366 20.68
LOCATION L0020139     VOLUME   587805.747 4136666.417 20.62
LOCATION L0020140     VOLUME   587814.021 4136664.468 20.58
LOCATION L0020141     VOLUME   587822.294 4136662.518 20.49
LOCATION L0020142     VOLUME   587830.568 4136660.569 20.37
LOCATION L0020143     VOLUME   587838.841 4136658.620 20.23
LOCATION L0020144     VOLUME   587847.115 4136656.671 20.24
LOCATION L0020145     VOLUME   587855.388 4136654.721 20.24
LOCATION L0020146     VOLUME   587863.661 4136652.772 20.19
LOCATION L0020147     VOLUME   587871.935 4136650.823 20.18
LOCATION L0020148     VOLUME   587880.208 4136648.873 20.19
LOCATION L0020149     VOLUME   587888.482 4136646.924 20.20
LOCATION L0020150     VOLUME   587896.755 4136644.975 20.15
LOCATION L0020151     VOLUME   587905.029 4136643.025 20.08
LOCATION L0020152     VOLUME   587913.302 4136641.076 20.12
LOCATION L0020153     VOLUME   587921.576 4136639.127 20.18
LOCATION L0020154     VOLUME   587929.849 4136637.177 20.25
LOCATION L0020155     VOLUME   587938.123 4136635.228 20.32
LOCATION L0020156     VOLUME   587946.396 4136633.279 20.40
LOCATION L0020157     VOLUME   587954.670 4136631.329 20.43
LOCATION L0020158     VOLUME   587962.778 4136629.634 20.43
LOCATION L0020159     VOLUME   587964.381 4136637.981 20.32
LOCATION L0020160     VOLUME   587965.984 4136646.329 20.24
LOCATION L0020161     VOLUME   587967.587 4136654.677 20.21
LOCATION L0020162     VOLUME   587969.189 4136663.024 20.18
LOCATION L0020163     VOLUME   587970.792 4136671.372 20.15
LOCATION L0020164     VOLUME   587972.395 4136679.719 20.13
LOCATION L0020165     VOLUME   587973.998 4136688.067 20.12
LOCATION L0020166     VOLUME   587975.600 4136696.414 20.11
LOCATION L0020167     VOLUME   587977.203 4136704.762 20.10
LOCATION L0020168     VOLUME   587978.806 4136713.109 20.08
LOCATION L0020169     VOLUME   587980.408 4136721.457 20.05
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LOCATION	L0020171	VOLUME	587983.614	4136738.152 20.01
LOCATION	L0020172	VOLUME	587985.217	4136746.499 20.11
LOCATION	L0020173	VOLUME	587986.819	4136754.847 20.23
LOCATION	L0020174	VOLUME	587988.422	4136763.194 20.31
LOCATION	L0020175	VOLUME	587990.025	4136771.542 20.19
LOCATION	L0020176	VOLUME	587991.628	4136779.889 19.92
LOCATION	L0020177	VOLUME	587992.267	4136787.486 19.71
LOCATION	L0020178	VOLUME	587983.781	4136787.971 19.85
LOCATION	L0020179	VOLUME	587975.294	4136788.456 19.93
LOCATION	L0020180	VOLUME	587966.808	4136788.941 20.01
LOCATION	L0020181	VOLUME	587958.322	4136789.426 20.05
LOCATION	L0020182	VOLUME	587949.836	4136789.911 20.01
LOCATION	L0020183	VOLUME	587941.350	4136790.396 19.98
LOCATION	L0020184	VOLUME	587932.864	4136790.881 19.92
LOCATION	L0020185	VOLUME	587924.377	4136791.365 19.83
LOCATION	L0020186	VOLUME	587915.891	4136791.850 19.74
LOCATION	L0020187	VOLUME	587907.405	4136792.335 19.66
LOCATION	L0020188	VOLUME	587898.919	4136792.820 19.56
LOCATION	L0020189	VOLUME	587890.433	4136793.305 19.47
LOCATION	L0020190	VOLUME	587881.947	4136793.790 19.49
LOCATION	L0020191	VOLUME	587873.461	4136794.275 19.57
LOCATION	L0020192	VOLUME	587864.974	4136794.760 19.65
LOCATION	L0020193	VOLUME	587856.599	4136795.967 19.80
LOCATION	L0020194	VOLUME	587848.355	4136798.039 19.96
LOCATION	L0020195	VOLUME	587840.112	4136800.112 20.09
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LOCATION	L0020199	VOLUME	587807.138	4136808.402 20.08
LOCATION	L0020200	VOLUME	587798.894	4136810.474 20.03
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LOCATION	L0020202	VOLUME	587782.407	4136814.619 20.03
LOCATION	L0020203	VOLUME	587774.164	4136816.692 20.12
LOCATION	L0020204	VOLUME	587765.921	4136818.764 20.23
LOCATION	L0020205	VOLUME	587757.677	4136820.837 20.26
LOCATION	L0020206	VOLUME	587749.434	4136822.909 20.26
LOCATION	L0020207	VOLUME	587741.190	4136824.982 20.27
LOCATION	L0020208	VOLUME	587732.947	4136827.054 20.28
LOCATION	L0020209	VOLUME	587724.703	4136829.127 20.29
LOCATION	L0020210	VOLUME	587716.460	4136831.199 20.29
LOCATION	L0020211	VOLUME	587708.216	4136833.272 20.20
LOCATION	L0020212	VOLUME	587699.973	4136835.345 20.11
LOCATION	L0020213	VOLUME	587691.729	4136837.417 20.02
LOCATION	L0020214	VOLUME	587683.486	4136839.490 20.23
LOCATION	L0020215	VOLUME	587675.242	4136841.562 20.45
LOCATION	L0020216	VOLUME	587666.999	4136843.635 20.63
LOCATION	L0020217	VOLUME	587658.755	4136845.707 20.65

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LOCATION L0020219     VOLUME   587642.269 4136849.852 20.69
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LOCATION L0020221     VOLUME   587634.293 4136840.360 20.89
LOCATION L0020222     VOLUME   587632.533 4136832.045 21.04
LOCATION L0020223     VOLUME   587630.773 4136823.729 21.14
LOCATION L0020224     VOLUME   587629.013 4136815.413 21.16
LOCATION L0020225     VOLUME   587627.253 4136807.097 21.18
LOCATION L0020226     VOLUME   587625.493 4136798.781 21.21
LOCATION L0020227     VOLUME   587623.733 4136790.466 21.25
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LOCATION L0020229     VOLUME   587620.213 4136773.834 21.31
LOCATION L0020230     VOLUME   587618.453 4136765.518 21.31
LOCATION L0020231     VOLUME   587616.693 4136757.202 21.35
LOCATION L0020232     VOLUME   587614.933 4136748.887 21.40
LOCATION L0020233     VOLUME   587613.173 4136740.571 21.45
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LOCATION L0020236     VOLUME   587627.392 4136727.847 21.06
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LOCATION L0020239     VOLUME   587652.147 4136721.729 20.55
LOCATION L0020240     VOLUME   587660.399 4136719.689 20.57
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LOCATION L0020242     VOLUME   587676.902 4136715.610 20.54
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LOCATION L0020246     VOLUME   587709.909 4136707.452 20.33
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LOCATION L0020249     VOLUME   587734.664 4136701.333 20.32
LOCATION L0020250     VOLUME   587742.916 4136699.293 20.36
LOCATION L0020251     VOLUME   587751.168 4136697.254 20.43
LOCATION L0020252     VOLUME   587759.419 4136695.214 20.49
LOCATION L0020253     VOLUME   587767.671 4136693.175 20.53
LOCATION L0020254     VOLUME   587775.923 4136691.135 20.55
LOCATION L0020255     VOLUME   587784.174 4136689.096 20.56
LOCATION L0020256     VOLUME   587792.426 4136687.056 20.55
LOCATION L0020257     VOLUME   587800.678 4136685.016 20.42
LOCATION L0020258     VOLUME   587808.929 4136682.977 20.28
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LOCATION L0020260     VOLUME   587825.433 4136678.898 19.99
LOCATION L0020261     VOLUME   587833.684 4136676.858 19.83
LOCATION L0020262     VOLUME   587841.936 4136674.819 19.72
LOCATION L0020263     VOLUME   587850.188 4136672.779 19.92
LOCATION L0020264     VOLUME   587858.439 4136670.739 20.13
LOCATION L0020265     VOLUME   587866.691 4136668.700 20.25
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LOCATION	L0020267	VOLUME	587883.194	4136664.621 20.24
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LOCATION	L0020270	VOLUME	587907.949	4136658.502 20.14
LOCATION	L0020271	VOLUME	587916.201	4136656.462 20.09
LOCATION	L0020272	VOLUME	587924.453	4136654.423 20.07
LOCATION	L0020273	VOLUME	587932.704	4136652.383 20.04
LOCATION	L0020274	VOLUME	587940.956	4136650.344 20.04
LOCATION	L0020275	VOLUME	587946.940	4136651.943 20.10
LOCATION	L0020276	VOLUME	587948.744	4136660.249 20.15
LOCATION	L0020277	VOLUME	587950.548	4136668.556 20.19
LOCATION	L0020278	VOLUME	587952.352	4136676.862 20.22
LOCATION	L0020279	VOLUME	587954.156	4136685.168 20.23
LOCATION	L0020280	VOLUME	587955.960	4136693.475 20.24
LOCATION	L0020281	VOLUME	587957.764	4136701.781 20.26
LOCATION	L0020282	VOLUME	587959.568	4136710.087 20.27
LOCATION	L0020283	VOLUME	587961.371	4136718.394 20.28
LOCATION	L0020284	VOLUME	587963.175	4136726.700 20.27
LOCATION	L0020285	VOLUME	587964.979	4136735.007 20.25
LOCATION	L0020286	VOLUME	587966.783	4136743.313 20.24
LOCATION	L0020287	VOLUME	587968.587	4136751.619 20.25
LOCATION	L0020288	VOLUME	587970.391	4136759.926 20.29
LOCATION	L0020289	VOLUME	587972.195	4136768.232 20.32
LOCATION	L0020290	VOLUME	587971.061	4136774.315 20.21
LOCATION	L0020291	VOLUME	587962.577	4136774.833 20.20
LOCATION	L0020292	VOLUME	587954.093	4136775.352 20.14
LOCATION	L0020293	VOLUME	587945.609	4136775.870 20.07
LOCATION	L0020294	VOLUME	587937.125	4136776.389 20.00
LOCATION	L0020295	VOLUME	587928.640	4136776.907 19.87
LOCATION	L0020296	VOLUME	587920.156	4136777.426 19.75
LOCATION	L0020297	VOLUME	587911.672	4136777.944 19.65
LOCATION	L0020298	VOLUME	587903.188	4136778.463 19.64
LOCATION	L0020299	VOLUME	587894.704	4136778.981 19.62
LOCATION	L0020300	VOLUME	587886.220	4136779.500 19.62
LOCATION	L0020301	VOLUME	587877.735	4136780.018 19.67
LOCATION	L0020302	VOLUME	587869.251	4136780.537 19.73
LOCATION	L0020303	VOLUME	587860.767	4136781.055 19.83
LOCATION	L0020304	VOLUME	587852.486	4136782.905 19.99
LOCATION	L0020305	VOLUME	587844.234	4136784.942 20.15
LOCATION	L0020306	VOLUME	587835.982	4136786.980 20.29
LOCATION	L0020307	VOLUME	587827.730	4136789.018 20.38
LOCATION	L0020308	VOLUME	587819.478	4136791.056 20.46
LOCATION	L0020309	VOLUME	587811.226	4136793.094 20.49
LOCATION	L0020310	VOLUME	587802.974	4136795.132 20.45
LOCATION	L0020311	VOLUME	587794.722	4136797.170 20.39
LOCATION	L0020312	VOLUME	587786.469	4136799.207 20.34
LOCATION	L0020313	VOLUME	587778.217	4136801.245 20.32

LOCATION	L0020314	VOLUME	587769.965	4136803.283 20.34
LOCATION	L0020315	VOLUME	587761.713	4136805.321 20.36
LOCATION	L0020316	VOLUME	587753.461	4136807.359 20.36
LOCATION	L0020317	VOLUME	587745.209	4136809.397 20.37
LOCATION	L0020318	VOLUME	587736.957	4136811.435 20.38
LOCATION	L0020319	VOLUME	587728.705	4136813.473 20.39
LOCATION	L0020320	VOLUME	587720.453	4136815.510 20.40
LOCATION	L0020321	VOLUME	587712.201	4136817.548 20.37
LOCATION	L0020322	VOLUME	587703.949	4136819.586 20.28
LOCATION	L0020323	VOLUME	587695.696	4136821.624 20.19
LOCATION	L0020324	VOLUME	587687.444	4136823.662 20.28
LOCATION	L0020325	VOLUME	587679.192	4136825.700 20.63
LOCATION	L0020326	VOLUME	587670.940	4136827.738 20.93
LOCATION	L0020327	VOLUME	587662.688	4136829.775 21.06
LOCATION	L0020328	VOLUME	587654.436	4136831.813 21.03
LOCATION	L0020329	VOLUME	587650.584	4136826.172 21.18
LOCATION	L0020330	VOLUME	587648.169	4136818.022 21.18
LOCATION	L0020331	VOLUME	587645.754	4136809.873 21.18
LOCATION	L0020332	VOLUME	587643.340	4136801.723 21.20
LOCATION	L0020333	VOLUME	587640.925	4136793.573 21.23
LOCATION	L0020334	VOLUME	587638.510	4136785.423 21.33
LOCATION	L0020335	VOLUME	587636.095	4136777.273 21.41
LOCATION	L0020336	VOLUME	587633.681	4136769.124 21.47
LOCATION	L0020337	VOLUME	587631.266	4136760.974 21.44
LOCATION	L0020338	VOLUME	587628.851	4136752.824 21.30
LOCATION	L0020339	VOLUME	587629.461	4136746.391 21.20
LOCATION	L0020340	VOLUME	587637.696	4136744.285 20.98
LOCATION	L0020341	VOLUME	587645.931	4136742.180 20.73
LOCATION	L0020342	VOLUME	587654.166	4136740.074 20.54
LOCATION	L0020343	VOLUME	587662.401	4136737.969 20.42
LOCATION	L0020344	VOLUME	587670.636	4136735.863 20.38
LOCATION	L0020345	VOLUME	587678.872	4136733.758 20.39
LOCATION	L0020346	VOLUME	587687.107	4136731.653 20.40
LOCATION	L0020347	VOLUME	587695.342	4136729.547 20.42
LOCATION	L0020348	VOLUME	587703.577	4136727.442 20.46
LOCATION	L0020349	VOLUME	587711.812	4136725.336 20.48
LOCATION	L0020350	VOLUME	587720.047	4136723.231 20.49
LOCATION	L0020351	VOLUME	587728.282	4136721.125 20.51
LOCATION	L0020352	VOLUME	587736.517	4136719.020 20.53
LOCATION	L0020353	VOLUME	587744.752	4136716.914 20.54
LOCATION	L0020354	VOLUME	587752.987	4136714.809 20.57
LOCATION	L0020355	VOLUME	587761.223	4136712.703 20.59
LOCATION	L0020356	VOLUME	587769.458	4136710.598 20.59
LOCATION	L0020357	VOLUME	587777.693	4136708.492 20.57
LOCATION	L0020358	VOLUME	587785.928	4136706.387 20.54
LOCATION	L0020359	VOLUME	587794.163	4136704.281 20.46
LOCATION	L0020360	VOLUME	587802.398	4136702.176 20.37
LOCATION	L0020361	VOLUME	587810.633	4136700.070 20.28

LOCATION	L0020362	VOLUME	587818.868	4136697.965 20.19
LOCATION	L0020363	VOLUME	587827.103	4136695.860 20.11
LOCATION	L0020364	VOLUME	587835.339	4136693.754 20.01
LOCATION	L0020365	VOLUME	587843.574	4136691.649 19.97
LOCATION	L0020366	VOLUME	587851.809	4136689.543 20.03
LOCATION	L0020367	VOLUME	587860.044	4136687.438 20.12
LOCATION	L0020368	VOLUME	587868.279	4136685.332 20.21
LOCATION	L0020369	VOLUME	587876.514	4136683.227 20.25
LOCATION	L0020370	VOLUME	587884.749	4136681.121 20.27
LOCATION	L0020371	VOLUME	587892.984	4136679.016 20.27
LOCATION	L0020372	VOLUME	587901.219	4136676.910 20.25
LOCATION	L0020373	VOLUME	587909.455	4136674.805 20.22
LOCATION	L0020374	VOLUME	587917.690	4136672.699 20.20
LOCATION	L0020375	VOLUME	587925.925	4136670.594 20.18
LOCATION	L0020376	VOLUME	587933.792	4136669.110 20.16
LOCATION	L0020377	VOLUME	587935.906	4136677.343 20.20
LOCATION	L0020378	VOLUME	587938.020	4136685.576 20.19
LOCATION	L0020379	VOLUME	587940.133	4136693.809 20.20
LOCATION	L0020380	VOLUME	587942.247	4136702.042 20.20
LOCATION	L0020381	VOLUME	587944.361	4136710.275 20.23
LOCATION	L0020382	VOLUME	587946.475	4136718.508 20.26
LOCATION	L0020383	VOLUME	587948.589	4136726.741 20.28
LOCATION	L0020384	VOLUME	587950.703	4136734.974 20.30
LOCATION	L0020385	VOLUME	587952.817	4136743.206 20.27
LOCATION	L0020386	VOLUME	587954.931	4136751.439 20.25
LOCATION	L0020387	VOLUME	587957.044	4136759.672 20.24
LOCATION	L0020388	VOLUME	587951.757	4136762.466 20.19
LOCATION	L0020389	VOLUME	587943.268	4136762.907 20.12
LOCATION	L0020390	VOLUME	587934.780	4136763.348 20.02
LOCATION	L0020391	VOLUME	587926.291	4136763.789 19.86
LOCATION	L0020392	VOLUME	587917.802	4136764.230 19.71
LOCATION	L0020393	VOLUME	587909.314	4136764.671 19.64
LOCATION	L0020394	VOLUME	587900.825	4136765.112 19.69
LOCATION	L0020395	VOLUME	587892.337	4136765.552 19.75
LOCATION	L0020396	VOLUME	587883.848	4136765.993 19.79
LOCATION	L0020397	VOLUME	587875.360	4136766.434 19.82
LOCATION	L0020398	VOLUME	587866.871	4136766.875 19.86
LOCATION	L0020399	VOLUME	587858.436	4136767.683 19.98
LOCATION	L0020400	VOLUME	587850.181	4136769.705 20.14
LOCATION	L0020401	VOLUME	587841.925	4136771.728 20.30
LOCATION	L0020402	VOLUME	587833.669	4136773.751 20.43
LOCATION	L0020403	VOLUME	587825.413	4136775.774 20.54
LOCATION	L0020404	VOLUME	587817.158	4136777.797 20.65
LOCATION	L0020405	VOLUME	587808.902	4136779.820 20.66
LOCATION	L0020406	VOLUME	587800.646	4136781.843 20.63
LOCATION	L0020407	VOLUME	587792.390	4136783.866 20.59
LOCATION	L0020408	VOLUME	587784.135	4136785.889 20.55
LOCATION	L0020409	VOLUME	587775.879	4136787.912 20.52

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LOCATION L0020410     VOLUME   587767.623 4136789.935 20.49
LOCATION L0020411     VOLUME   587759.367 4136791.958 20.48
LOCATION L0020412     VOLUME   587751.111 4136793.981 20.47
LOCATION L0020413     VOLUME   587742.856 4136796.004 20.47
LOCATION L0020414     VOLUME   587734.600 4136798.027 20.47
LOCATION L0020415     VOLUME   587726.344 4136800.049 20.46
LOCATION L0020416     VOLUME   587718.088 4136802.072 20.46
LOCATION L0020417     VOLUME   587709.833 4136804.095 20.40
LOCATION L0020418     VOLUME   587701.577 4136806.118 20.31
LOCATION L0020419     VOLUME   587693.321 4136808.141 20.22
LOCATION L0020420     VOLUME   587685.065 4136810.164 20.40
LOCATION L0020421     VOLUME   587676.810 4136812.187 20.69
LOCATION L0020422     VOLUME   587669.186 4136813.087 20.97
LOCATION L0020423     VOLUME   587666.630 4136804.980 20.99
LOCATION L0020424     VOLUME   587664.075 4136796.873 20.95
LOCATION L0020425     VOLUME   587661.520 4136788.766 20.91
LOCATION L0020426     VOLUME   587658.964 4136780.660 20.90
LOCATION L0020427     VOLUME   587656.409 4136772.553 20.95
LOCATION L0020428     VOLUME   587653.853 4136764.446 21.06
LOCATION L0020429     VOLUME   587651.298 4136756.339 21.00
LOCATION L0020430     VOLUME   587658.873 4136753.895 20.67
LOCATION L0020431     VOLUME   587667.117 4136751.825 20.37
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LOCATION L0020434     VOLUME   587691.849 4136745.613 20.52
LOCATION L0020435     VOLUME   587700.093 4136743.543 20.53
LOCATION L0020436     VOLUME   587708.337 4136741.472 20.56
LOCATION L0020437     VOLUME   587716.581 4136739.402 20.60
LOCATION L0020438     VOLUME   587724.825 4136737.331 20.66
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LOCATION L0020440     VOLUME   587741.313 4136733.190 20.78
LOCATION L0020441     VOLUME   587749.557 4136731.120 20.82
LOCATION L0020442     VOLUME   587757.801 4136729.049 20.86
LOCATION L0020443     VOLUME   587766.045 4136726.979 20.90
LOCATION L0020444     VOLUME   587774.289 4136724.908 20.89
LOCATION L0020445     VOLUME   587782.533 4136722.838 20.88
LOCATION L0020446     VOLUME   587790.777 4136720.767 20.86
LOCATION L0020447     VOLUME   587799.021 4136718.697 20.71
LOCATION L0020448     VOLUME   587807.265 4136716.626 20.56
LOCATION L0020449     VOLUME   587815.509 4136714.556 20.43
LOCATION L0020450     VOLUME   587823.753 4136712.485 20.33
LOCATION L0020451     VOLUME   587831.997 4136710.415 20.25
LOCATION L0020452     VOLUME   587840.241 4136708.344 20.17
LOCATION L0020453     VOLUME   587848.485 4136706.274 20.12
LOCATION L0020454     VOLUME   587856.729 4136704.203 20.09
LOCATION L0020455     VOLUME   587864.973 4136702.133 20.10
LOCATION L0020456     VOLUME   587873.217 4136700.062 20.18
LOCATION L0020457     VOLUME   587881.461 4136697.992 20.25
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LOCATION	L0020459	VOLUME	587897.949	4136693.851	20.27
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LOCATION	L0020461	VOLUME	587914.437	4136689.710	20.21
LOCATION	L0020462	VOLUME	587922.681	4136687.639	20.20
LOCATION	L0020463	VOLUME	587926.882	4136692.406	20.20
LOCATION	L0020464	VOLUME	587929.042	4136700.627	20.20
LOCATION	L0020465	VOLUME	587931.201	4136708.848	20.20
LOCATION	L0020466	VOLUME	587933.360	4136717.069	20.21
LOCATION	L0020467	VOLUME	587935.519	4136725.290	20.25
LOCATION	L0020468	VOLUME	587937.678	4136733.512	20.31
LOCATION	L0020469	VOLUME	587939.837	4136741.733	20.27
LOCATION	L0020470	VOLUME	587941.431	4136749.547	20.21
LOCATION	L0020471	VOLUME	587932.949	4136750.108	20.11
LOCATION	L0020472	VOLUME	587924.468	4136750.669	19.96
LOCATION	L0020473	VOLUME	587915.986	4136751.231	19.81
LOCATION	L0020474	VOLUME	587907.505	4136751.792	19.79
LOCATION	L0020475	VOLUME	587899.023	4136752.353	19.83
LOCATION	L0020476	VOLUME	587890.542	4136752.914	19.87
LOCATION	L0020477	VOLUME	587882.060	4136753.476	19.88
LOCATION	L0020478	VOLUME	587873.579	4136754.037	19.89
LOCATION	L0020479	VOLUME	587865.098	4136754.598	19.90
LOCATION	L0020480	VOLUME	587856.616	4136755.160	20.06
LOCATION	L0020481	VOLUME	587848.352	4136757.105	20.23
LOCATION	L0020482	VOLUME	587840.108	4136759.173	20.40
LOCATION	L0020483	VOLUME	587831.863	4136761.242	20.54
LOCATION	L0020484	VOLUME	587823.619	4136763.310	20.68
LOCATION	L0020485	VOLUME	587815.374	4136765.379	20.83
LOCATION	L0020486	VOLUME	587807.130	4136767.447	20.82
LOCATION	L0020487	VOLUME	587798.885	4136769.516	20.80
LOCATION	L0020488	VOLUME	587790.641	4136771.584	20.77
LOCATION	L0020489	VOLUME	587782.396	4136773.653	20.72
LOCATION	L0020490	VOLUME	587774.152	4136775.721	20.68
LOCATION	L0020491	VOLUME	587765.908	4136777.790	20.64
LOCATION	L0020492	VOLUME	587757.663	4136779.858	20.63
LOCATION	L0020493	VOLUME	587749.419	4136781.927	20.63
LOCATION	L0020494	VOLUME	587741.174	4136783.995	20.62
LOCATION	L0020495	VOLUME	587732.930	4136786.064	20.58
LOCATION	L0020496	VOLUME	587724.685	4136788.132	20.54
LOCATION	L0020497	VOLUME	587716.441	4136790.201	20.52
LOCATION	L0020498	VOLUME	587708.196	4136792.269	20.44
LOCATION	L0020499	VOLUME	587699.952	4136794.338	20.35
LOCATION	L0020500	VOLUME	587691.707	4136796.406	20.25
LOCATION	L0020501	VOLUME	587683.463	4136798.475	20.46
LOCATION	L0020502	VOLUME	587678.064	4136795.214	20.61
LOCATION	L0020503	VOLUME	587675.195	4136787.212	20.63
LOCATION	L0020504	VOLUME	587672.327	4136779.211	20.60
LOCATION	L0020505	VOLUME	587669.459	4136771.210	20.51

LOCATION	L0020506	VOLUME	587670.399	4136765.245 20.43
LOCATION	L0020507	VOLUME	587678.647	4136763.189 20.52
LOCATION	L0020508	VOLUME	587686.894	4136761.132 20.61
LOCATION	L0020509	VOLUME	587695.142	4136759.075 20.65
LOCATION	L0020510	VOLUME	587703.389	4136757.019 20.63
LOCATION	L0020511	VOLUME	587711.637	4136754.962 20.62
LOCATION	L0020512	VOLUME	587719.884	4136752.905 20.66
LOCATION	L0020513	VOLUME	587728.131	4136750.849 20.72
LOCATION	L0020514	VOLUME	587736.379	4136748.792 20.79
LOCATION	L0020515	VOLUME	587744.626	4136746.735 20.84
LOCATION	L0020516	VOLUME	587752.874	4136744.679 20.88
LOCATION	L0020517	VOLUME	587761.121	4136742.622 20.94
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LOCATION	L0020519	VOLUME	587777.616	4136738.509 21.06
LOCATION	L0020520	VOLUME	587785.863	4136736.452 21.12
LOCATION	L0020521	VOLUME	587794.111	4136734.395 21.10
LOCATION	L0020522	VOLUME	587802.358	4136732.339 20.94
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LOCATION	L0020524	VOLUME	587818.853	4136728.225 20.64
LOCATION	L0020525	VOLUME	587827.101	4136726.169 20.52
LOCATION	L0020526	VOLUME	587835.348	4136724.112 20.41
LOCATION	L0020527	VOLUME	587843.595	4136722.055 20.29
LOCATION	L0020528	VOLUME	587851.843	4136719.999 20.17
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LOCATION	L0020531	VOLUME	587876.585	4136713.829 20.13
LOCATION	L0020532	VOLUME	587884.833	4136711.772 20.22
LOCATION	L0020533	VOLUME	587893.080	4136709.715 20.25
LOCATION	L0020534	VOLUME	587901.328	4136707.659 20.24
LOCATION	L0020535	VOLUME	587909.575	4136705.602 20.22
LOCATION	L0020536	VOLUME	587917.822	4136703.545 20.21
LOCATION	L0020537	VOLUME	587920.624	4136710.888 20.17
LOCATION	L0020538	VOLUME	587922.941	4136719.066 20.15
LOCATION	L0020539	VOLUME	587925.258	4136727.244 20.14
LOCATION	L0020540	VOLUME	587927.575	4136735.422 20.16
LOCATION	L0020541	VOLUME	587926.850	4136741.320 20.09
LOCATION	L0020542	VOLUME	587918.350	4136741.388 19.95
LOCATION	L0020543	VOLUME	587909.851	4136741.457 19.88
LOCATION	L0020544	VOLUME	587901.351	4136741.525 19.92
LOCATION	L0020545	VOLUME	587892.851	4136741.594 19.96
LOCATION	L0020546	VOLUME	587884.351	4136741.662 19.97
LOCATION	L0020547	VOLUME	587875.852	4136741.731 19.95
LOCATION	L0020548	VOLUME	587867.352	4136741.799 19.94
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LOCATION	L0020550	VOLUME	587850.371	4136742.068 20.24
LOCATION	L0020551	VOLUME	587842.174	4136744.319 20.42
LOCATION	L0020552	VOLUME	587833.977	4136746.569 20.55
LOCATION	L0020553	VOLUME	587825.781	4136748.819 20.66

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   LOCATION L0020560     VOLUME   587768.403 4136764.569 20.80
   LOCATION L0020561     VOLUME   587760.206 4136766.820 20.78
   LOCATION L0020562     VOLUME   587752.010 4136769.070 20.78
   LOCATION L0020563     VOLUME   587743.813 4136771.320 20.77
   LOCATION L0020564     VOLUME   587735.616 4136773.570 20.72
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   LOCATION L0020566     VOLUME   587719.223 4136778.070 20.59
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   LOCATION L0020570     VOLUME   587688.570 4136782.989 20.46
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   LOCATION L0020575     VOLUME   587719.285 4136766.780 20.66
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   LOCATION L0020581     VOLUME   587768.654 4136753.985 20.89
   LOCATION L0020582     VOLUME   587776.882 4136751.853 20.94
   LOCATION L0020583     VOLUME   587785.111 4136749.721 20.99
   LOCATION L0020584     VOLUME   587793.339 4136747.588 21.01
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   LOCATION L0020589     VOLUME   587834.480 4136736.926 20.57
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   LOCATION L0020591     VOLUME   587850.936 4136732.662 20.24
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** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
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   SRCPARAM L0020598     0.0000002981      3.11      3.95      2.89
** ----------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "Intuitive Tier 4 1.13.rou"
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
```

```
Sunnyvale\HRA\Construction\745090.PFL"
   SURFDATA 23244 2009
   UAIRDATA 23230 2009 OAKLAND/WSO_AP
   PROFBASE 11.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "INTUITIVE TIER 4 1.13.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "INTUITIVE TIER 4 1.13.AD\24H1GALL.PLT" 32
   PLOTFILE 24 ALL 8TH "INTUITIVE TIER 4 1.13.AD\24H8GALL.PLT" 33
   PLOTFILE ANNUAL ALL "INTUITIVE TIER 4 1.13.AD\AN00GALL.PLT" 34
   SUMMFILE "Intuitive Tier 4 1.13.sum"
OU FINISHED

 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                         ***       13:36:48

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                            ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F
```

```
 **Model Uses URBAN Dispersion Algorithm for the SBL for   935 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   1938000.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:    935 Source(s);       1 Source Group(s); and     238
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    935 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)
```

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 11.90 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;
Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 4.0 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: Intuitive Tier 4 1.13.err

**File for Summary of Results: Intuitive Tier 4 1.13.sum

*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48
*** ***

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0019664	0	0.30530E-06	587891.9	4136838.4	19.3	3.11	3.95	2.89	YES	
L0019665	0	0.30530E-06	587893.4	4136846.7	19.4	3.11	3.95	2.89	YES	
L0019666	0	0.30530E-06	587895.0	4136855.1	19.4	3.11	3.95			

2.89	YES						
L0019667	0	0.30530E-06	587896.5	4136863.4	19.4	3.11	3.95
2.89	YES						
L0019668	0	0.30530E-06	587898.1	4136871.8	19.5	3.11	3.95
2.89	YES						
L0019669	0	0.30530E-06	587899.6	4136880.1	19.7	3.11	3.95
2.89	YES						
L0019670	0	0.30530E-06	587901.2	4136888.5	20.0	3.11	3.95
2.89	YES						
L0019671	0	0.30530E-06	587902.7	4136896.9	20.1	3.11	3.95
2.89	YES						
L0019672	0	0.30530E-06	587904.3	4136905.2	20.1	3.11	3.95
2.89	YES						
L0019673	0	0.30530E-06	587905.9	4136913.6	20.1	3.11	3.95
2.89	YES						
L0019674	0	0.30530E-06	587907.4	4136921.9	20.1	3.11	3.95
2.89	YES						
L0019675	0	0.30530E-06	587909.0	4136930.3	19.9	3.11	3.95
2.89	YES						
L0019676	0	0.30530E-06	587910.5	4136938.6	19.6	3.11	3.95
2.89	YES						
L0019677	0	0.30530E-06	587912.1	4136947.0	19.4	3.11	3.95
2.89	YES						
L0019678	0	0.30530E-06	587913.6	4136955.4	19.3	3.11	3.95
2.89	YES						
L0019679	0	0.30530E-06	587915.2	4136963.7	19.3	3.11	3.95
2.89	YES						
L0019680	0	0.30530E-06	587916.7	4136972.1	19.3	3.11	3.95
2.89	YES						
L0019681	0	0.30530E-06	587918.3	4136980.4	19.4	3.11	3.95
2.89	YES						
L0019682	0	0.30530E-06	587919.8	4136988.8	19.5	3.11	3.95
2.89	YES						
L0019683	0	0.30530E-06	587921.4	4136997.1	19.5	3.11	3.95
2.89	YES						
L0019684	0	0.30530E-06	587922.9	4137005.5	19.6	3.11	3.95
2.89	YES						
L0019685	0	0.30530E-06	587924.5	4137013.8	19.6	3.11	3.95
2.89	YES						
L0019686	0	0.30530E-06	587926.1	4137022.2	19.8	3.11	3.95
2.89	YES						
L0019687	0	0.30530E-06	587927.6	4137030.6	19.8	3.11	3.95
2.89	YES						
L0019688	0	0.30530E-06	587929.2	4137038.9	19.9	3.11	3.95
2.89	YES						
L0019689	0	0.30530E-06	587930.7	4137047.3	19.9	3.11	3.95
2.89	YES						
L0019690	0	0.30530E-06	587932.3	4137055.6	19.7	3.11	3.95

```
2.89     YES
 L0019691         0   0.30530E-06  587933.8 4137064.0    19.5     3.11     3.95
2.89     YES
 L0019692         0   0.30530E-06  587935.4 4137072.3    19.2     3.11     3.95
2.89     YES
 L0019693         0   0.30530E-06  587937.5 4137080.1    18.9     3.11     3.95
2.89     YES
 L0019694         0   0.30530E-06  587945.9 4137081.1    19.2     3.11     3.95
2.89     YES
 L0019695         0   0.30530E-06  587954.3 4137082.1    19.4     3.11     3.95
2.89     YES
 L0019696         0   0.30530E-06  587962.8 4137083.1    19.5     3.11     3.95
2.89     YES
 L0019697         0   0.30530E-06  587971.2 4137084.0    19.3     3.11     3.95
2.89     YES
 L0019698         0   0.30530E-06  587979.7 4137085.0    19.2     3.11     3.95
2.89     YES
 L0019699         0   0.30530E-06  587988.1 4137086.0    19.1     3.11     3.95
2.89     YES
 L0019700         0   0.30530E-06  587996.6 4137087.0    19.1     3.11     3.95
2.89     YES
 L0019701         0   0.30530E-06  588005.0 4137087.9    19.1     3.11     3.95
2.89     YES
 L0019702         0   0.30530E-06  588013.5 4137088.9    19.0     3.11     3.95
2.89     YES
 L0019703         0   0.30530E-06  588021.9 4137089.9    18.8     3.11     3.95
2.89     YES
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                        *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X         Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0019704         0   0.30530E-06  588030.3 4137090.8    18.6     3.11     3.95
```

2.89 YES							
L0019705	0	0.30530E-06	588038.8	4137091.8	18.4	3.11	3.95
2.89 YES							
L0019706	0	0.30530E-06	588047.2	4137093.0	18.2	3.11	3.95
2.89 YES							
L0019707	0	0.30530E-06	588055.5	4137094.6	18.0	3.11	3.95
2.89 YES							
L0019708	0	0.30530E-06	588063.9	4137096.2	17.9	3.11	3.95
2.89 YES							
L0019709	0	0.30530E-06	588072.2	4137097.8	17.9	3.11	3.95
2.89 YES							
L0019710	0	0.30530E-06	588080.6	4137099.5	17.9	3.11	3.95
2.89 YES							
L0019711	0	0.30530E-06	588088.9	4137101.1	17.9	3.11	3.95
2.89 YES							
L0019712	0	0.30530E-06	588097.3	4137102.7	17.9	3.11	3.95
2.89 YES							
L0019713	0	0.30530E-06	588105.6	4137104.3	17.9	3.11	3.95
2.89 YES							
L0019714	0	0.30530E-06	588114.0	4137105.9	18.1	3.11	3.95
2.89 YES							
L0019715	0	0.30530E-06	588122.3	4137107.5	18.4	3.11	3.95
2.89 YES							
L0019716	0	0.30530E-06	588130.6	4137109.1	18.6	3.11	3.95
2.89 YES							
L0019717	0	0.30530E-06	588135.4	4137106.8	18.4	3.11	3.95
2.89 YES							
L0019718	0	0.30530E-06	588134.7	4137098.4	18.4	3.11	3.95
2.89 YES							
L0019719	0	0.30530E-06	588133.9	4137089.9	18.4	3.11	3.95
2.89 YES							
L0019720	0	0.30530E-06	588133.1	4137081.4	18.4	3.11	3.95
2.89 YES							
L0019721	0	0.30530E-06	588132.3	4137073.0	18.5	3.11	3.95
2.89 YES							
L0019722	0	0.30530E-06	588131.5	4137064.5	18.8	3.11	3.95
2.89 YES							
L0019723	0	0.30530E-06	588130.7	4137056.0	19.1	3.11	3.95
2.89 YES							
L0019724	0	0.30530E-06	588130.0	4137047.6	19.3	3.11	3.95
2.89 YES							
L0019725	0	0.30530E-06	588129.2	4137039.1	19.1	3.11	3.95
2.89 YES							
L0019726	0	0.30530E-06	588128.4	4137030.7	18.8	3.11	3.95
2.89 YES							
L0019727	0	0.30530E-06	588127.6	4137022.2	18.6	3.11	3.95
2.89 YES							
L0019728	0	0.30530E-06	588126.8	4137013.7	18.4	3.11	3.95

2.89 YES
L0019729 0 0.30530E-06 588126.0 4137005.3 18.4 3.11 3.95
2.89 YES
L0019730 0 0.30530E-06 588125.3 4136996.8 18.3 3.11 3.95
2.89 YES
L0019731 0 0.30530E-06 588124.5 4136988.3 18.3 3.11 3.95
2.89 YES
L0019732 0 0.30530E-06 588123.7 4136979.9 18.4 3.11 3.95
2.89 YES
L0019733 0 0.30530E-06 588122.9 4136971.4 18.5 3.11 3.95
2.89 YES
L0019734 0 0.30530E-06 588122.1 4136962.9 18.7 3.11 3.95
2.89 YES
L0019735 0 0.30530E-06 588121.4 4136954.5 18.9 3.11 3.95
2.89 YES
L0019736 0 0.30530E-06 588120.6 4136946.0 19.0 3.11 3.95
2.89 YES
L0019737 0 0.30530E-06 588119.8 4136937.6 19.0 3.11 3.95
2.89 YES
L0019738 0 0.30530E-06 588119.0 4136929.1 19.0 3.11 3.95
2.89 YES
L0019739 0 0.30530E-06 588118.2 4136920.6 19.1 3.11 3.95
2.89 YES
L0019740 0 0.30530E-06 588117.4 4136912.2 19.0 3.11 3.95
2.89 YES
L0019741 0 0.30530E-06 588116.7 4136903.7 19.0 3.11 3.95
2.89 YES
L0019742 0 0.30530E-06 588115.9 4136895.2 18.9 3.11 3.95
2.89 YES
L0019743 0 0.30530E-06 588115.1 4136886.8 19.0 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY BY

- -

L0019744 0 0.30530E-06 588114.3 4136878.3 19.1 3.11 3.95
2.89 YES
L0019745 0 0.30530E-06 588113.5 4136869.8 19.2 3.11 3.95
2.89 YES
L0019746 0 0.30530E-06 588112.7 4136861.4 19.3 3.11 3.95
2.89 YES
L0019747 0 0.30530E-06 588112.0 4136852.9 19.3 3.11 3.95
2.89 YES
L0019748 0 0.30530E-06 588111.2 4136844.5 19.4 3.11 3.95
2.89 YES
L0019749 0 0.30530E-06 588110.4 4136836.0 19.4 3.11 3.95
2.89 YES
L0019750 0 0.30530E-06 588106.3 4136831.3 19.4 3.11 3.95
2.89 YES
L0019751 0 0.30530E-06 588097.8 4136831.6 19.3 3.11 3.95
2.89 YES
L0019752 0 0.30530E-06 588089.3 4136831.8 19.2 3.11 3.95
2.89 YES
L0019753 0 0.30530E-06 588080.8 4136832.1 19.2 3.11 3.95
2.89 YES
L0019754 0 0.30530E-06 588072.3 4136832.4 19.3 3.11 3.95
2.89 YES
L0019755 0 0.30530E-06 588063.8 4136832.7 19.4 3.11 3.95
2.89 YES
L0019756 0 0.30530E-06 588055.3 4136833.0 19.4 3.11 3.95
2.89 YES
L0019757 0 0.30530E-06 588046.9 4136833.3 19.2 3.11 3.95
2.89 YES
L0019758 0 0.30530E-06 588038.4 4136833.6 19.1 3.11 3.95
2.89 YES
L0019759 0 0.30530E-06 588029.9 4136833.9 19.2 3.11 3.95
2.89 YES
L0019760 0 0.30530E-06 588021.4 4136834.2 19.6 3.11 3.95
2.89 YES
L0019761 0 0.30530E-06 588012.9 4136834.4 19.9 3.11 3.95
2.89 YES
L0019762 0 0.30530E-06 588004.4 4136834.7 20.0 3.11 3.95
2.89 YES
L0019763 0 0.30530E-06 587995.9 4136835.0 19.9 3.11 3.95
2.89 YES
L0019764 0 0.30530E-06 587987.4 4136835.3 19.9 3.11 3.95
2.89 YES
L0019765 0 0.30530E-06 587978.9 4136835.6 19.8 3.11 3.95
2.89 YES
L0019766 0 0.30530E-06 587970.4 4136835.9 19.7 3.11 3.95

2.89 YES
L0019767 0 0.30530E-06 587961.9 4136836.2 19.6 3.11 3.95
2.89 YES
L0019768 0 0.30530E-06 587953.4 4136836.5 19.4 3.11 3.95
2.89 YES
L0019769 0 0.30530E-06 587944.9 4136836.8 19.4 3.11 3.95
2.89 YES
L0019770 0 0.30530E-06 587936.4 4136837.0 19.3 3.11 3.95
2.89 YES
L0019771 0 0.30530E-06 587927.9 4136837.3 19.3 3.11 3.95
2.89 YES
L0019772 0 0.30530E-06 587919.4 4136837.6 19.3 3.11 3.95
2.89 YES
L0019773 0 0.30530E-06 587910.9 4136837.9 19.3 3.11 3.95
2.89 YES
L0019774 0 0.30530E-06 587910.4 4136844.8 19.3 3.11 3.95
2.89 YES
L0019775 0 0.30530E-06 587911.8 4136853.2 19.3 3.11 3.95
2.89 YES
L0019776 0 0.30530E-06 587913.1 4136861.6 19.4 3.11 3.95
2.89 YES
L0019777 0 0.30530E-06 587914.5 4136869.9 19.7 3.11 3.95
2.89 YES
L0019778 0 0.30530E-06 587915.9 4136878.3 20.0 3.11 3.95
2.89 YES
L0019779 0 0.30530E-06 587917.2 4136886.7 20.2 3.11 3.95
2.89 YES
L0019780 0 0.30530E-06 587918.6 4136895.1 20.1 3.11 3.95
2.89 YES
L0019781 0 0.30530E-06 587919.9 4136903.5 19.9 3.11 3.95
2.89 YES
L0019782 0 0.30530E-06 587921.3 4136911.9 19.6 3.11 3.95
2.89 YES
L0019783 0 0.30530E-06 587922.6 4136920.3 19.4 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

NUMBER EMISSION RATE BASE RELEASE INIT.
INIT. URBAN EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ (METERS)	SOURCE
L0019784	0	0.30530E-06	587924.0	4136928.7	19.4	3.11	3.95	2.89	YES
L0019785	0	0.30530E-06	587925.3	4136937.1	19.7	3.11	3.95	2.89	YES
L0019786	0	0.30530E-06	587926.7	4136945.5	20.0	3.11	3.95	2.89	YES
L0019787	0	0.30530E-06	587928.1	4136953.9	20.4	3.11	3.95	2.89	YES
L0019788	0	0.30530E-06	587929.4	4136962.2	20.5	3.11	3.95	2.89	YES
L0019789	0	0.30530E-06	587930.8	4136970.6	20.6	3.11	3.95	2.89	YES
L0019790	0	0.30530E-06	587932.1	4136979.0	20.8	3.11	3.95	2.89	YES
L0019791	0	0.30530E-06	587933.5	4136987.4	20.8	3.11	3.95	2.89	YES
L0019792	0	0.30530E-06	587934.8	4136995.8	20.9	3.11	3.95	2.89	YES
L0019793	0	0.30530E-06	587936.2	4137004.2	20.6	3.11	3.95	2.89	YES
L0019794	0	0.30530E-06	587937.6	4137012.6	20.3	3.11	3.95	2.89	YES
L0019795	0	0.30530E-06	587938.9	4137021.0	20.1	3.11	3.95	2.89	YES
L0019796	0	0.30530E-06	587940.3	4137029.4	19.9	3.11	3.95	2.89	YES
L0019797	0	0.30530E-06	587941.6	4137037.8	19.7	3.11	3.95	2.89	YES
L0019798	0	0.30530E-06	587943.0	4137046.2	19.4	3.11	3.95	2.89	YES
L0019799	0	0.30530E-06	587944.3	4137054.5	19.4	3.11	3.95	2.89	YES
L0019800	0	0.30530E-06	587945.7	4137062.9	19.4	3.11	3.95	2.89	YES
L0019801	0	0.30530E-06	587945.6	4137071.4	19.5	3.11	3.95	2.89	YES
L0019802	0	0.30530E-06	587953.1	4137073.2	19.8	3.11	3.95	2.89	YES
L0019803	0	0.30530E-06	587961.6	4137074.1	20.1	3.11	3.95	2.89	YES
L0019804	0	0.30530E-06	587970.0	4137075.0	20.1	3.11	3.95		

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2.89     YES
 L0019805         0   0.30530E-06  587978.5 4137076.0    20.0     3.11     3.95
2.89     YES
 L0019806         0   0.30530E-06  587986.9 4137076.9    19.9     3.11     3.95
2.89     YES
 L0019807         0   0.30530E-06  587995.4 4137077.8    19.9     3.11     3.95
2.89     YES
 L0019808         0   0.30530E-06  588003.8 4137078.7    20.0     3.11     3.95
2.89     YES
 L0019809         0   0.30530E-06  588012.3 4137079.6    19.9     3.11     3.95
2.89     YES
 L0019810         0   0.30530E-06  588020.7 4137080.5    19.5     3.11     3.95
2.89     YES
 L0019811         0   0.30530E-06  588029.2 4137081.4    19.2     3.11     3.95
2.89     YES
 L0019812         0   0.30530E-06  588037.6 4137082.3    18.9     3.11     3.95
2.89     YES
 L0019813         0   0.30530E-06  588046.1 4137083.2    18.7     3.11     3.95
2.89     YES
 L0019814         0   0.30530E-06  588054.5 4137084.1    18.4     3.11     3.95
2.89     YES
 L0019815         0   0.30530E-06  588063.0 4137085.0    18.3     3.11     3.95
2.89     YES
 L0019816         0   0.30530E-06  588071.4 4137085.9    18.4     3.11     3.95
2.89     YES
 L0019817         0   0.30530E-06  588079.9 4137086.8    18.4     3.11     3.95
2.89     YES
 L0019818         0   0.30530E-06  588088.3 4137087.8    18.3     3.11     3.95
2.89     YES
 L0019819         0   0.30530E-06  588096.8 4137088.7    18.1     3.11     3.95
2.89     YES
 L0019820         0   0.30530E-06  588105.2 4137089.6    18.0     3.11     3.95
2.89     YES
 L0019821         0   0.30530E-06  588113.7 4137090.5    18.2     3.11     3.95
2.89     YES
 L0019822         0   0.30530E-06  588121.8 4137091.1    18.3     3.11     3.95
2.89     YES
 L0019823         0   0.30530E-06  588121.0 4137082.6    18.3     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
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*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0019824	0	0.30530E-06	588120.1	4137074.2	18.3	3.11	3.95	2.89	YES
L0019825	0	0.30530E-06	588119.3	4137065.7	18.4	3.11	3.95	2.89	YES
L0019826	0	0.30530E-06	588118.4	4137057.3	18.4	3.11	3.95	2.89	YES
L0019827	0	0.30530E-06	588117.6	4137048.8	18.4	3.11	3.95	2.89	YES
L0019828	0	0.30530E-06	588116.7	4137040.4	18.3	3.11	3.95	2.89	YES
L0019829	0	0.30530E-06	588115.9	4137031.9	18.2	3.11	3.95	2.89	YES
L0019830	0	0.30530E-06	588115.0	4137023.4	18.2	3.11	3.95	2.89	YES
L0019831	0	0.30530E-06	588114.1	4137015.0	18.1	3.11	3.95	2.89	YES
L0019832	0	0.30530E-06	588113.3	4137006.5	18.1	3.11	3.95	2.89	YES
L0019833	0	0.30530E-06	588112.4	4136998.1	18.0	3.11	3.95	2.89	YES
L0019834	0	0.30530E-06	588111.6	4136989.6	17.9	3.11	3.95	2.89	YES
L0019835	0	0.30530E-06	588110.7	4136981.2	17.9	3.11	3.95	2.89	YES
L0019836	0	0.30530E-06	588109.9	4136972.7	18.2	3.11	3.95	2.89	YES
L0019837	0	0.30530E-06	588109.0	4136964.2	18.6	3.11	3.95	2.89	YES
L0019838	0	0.30530E-06	588108.2	4136955.8	19.0	3.11	3.95	2.89	YES
L0019839	0	0.30530E-06	588107.3	4136947.3	19.2	3.11	3.95	2.89	YES
L0019840	0	0.30530E-06	588106.4	4136938.9	19.2	3.11	3.95	2.89	YES
L0019841	0	0.30530E-06	588105.6	4136930.4	19.2	3.11	3.95	2.89	YES
L0019842	0	0.30530E-06	588104.7	4136922.0	19.2	3.11	3.95		

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2.89     YES
 L0019843         0   0.30530E-06  588103.9 4136913.5    19.1     3.11     3.95
2.89     YES
 L0019844         0   0.30530E-06  588103.0 4136905.0    19.0     3.11     3.95
2.89     YES
 L0019845         0   0.30530E-06  588102.2 4136896.6    19.0     3.11     3.95
2.89     YES
 L0019846         0   0.30530E-06  588101.3 4136888.1    19.0     3.11     3.95
2.89     YES
 L0019847         0   0.30530E-06  588100.5 4136879.7    19.2     3.11     3.95
2.89     YES
 L0019848         0   0.30530E-06  588099.6 4136871.2    19.3     3.11     3.95
2.89     YES
 L0019849         0   0.30530E-06  588098.8 4136862.8    19.4     3.11     3.95
2.89     YES
 L0019850         0   0.30530E-06  588095.5 4136857.1    19.5     3.11     3.95
2.89     YES
 L0019851         0   0.30530E-06  588087.0 4136857.3    19.6     3.11     3.95
2.89     YES
 L0019852         0   0.30530E-06  588078.5 4136857.6    19.6     3.11     3.95
2.89     YES
 L0019853         0   0.30530E-06  588070.0 4136857.9    19.5     3.11     3.95
2.89     YES
 L0019854         0   0.30530E-06  588061.5 4136858.2    19.5     3.11     3.95
2.89     YES
 L0019855         0   0.30530E-06  588053.0 4136858.5    19.2     3.11     3.95
2.89     YES
 L0019856         0   0.30530E-06  588044.5 4136858.8    18.8     3.11     3.95
2.89     YES
 L0019857         0   0.30530E-06  588036.0 4136859.0    18.5     3.11     3.95
2.89     YES
 L0019858         0   0.30530E-06  588027.5 4136859.3    18.5     3.11     3.95
2.89     YES
 L0019859         0   0.30530E-06  588019.0 4136859.6    18.5     3.11     3.95
2.89     YES
 L0019860         0   0.30530E-06  588010.5 4136859.9    18.6     3.11     3.95
2.89     YES
 L0019861         0   0.30530E-06  588002.0 4136860.2    18.6     3.11     3.95
2.89     YES
 L0019862         0   0.30530E-06  587993.5 4136860.5    18.6     3.11     3.95
2.89     YES
 L0019863         0   0.30530E-06  587985.0 4136860.7    18.7     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE
L0019864	0	0.30530E-06	587976.5	4136861.0	18.7	3.11	3.95	2.89	YES
L0019865	0	0.30530E-06	587968.1	4136861.3	18.7	3.11	3.95	2.89	YES
L0019866	0	0.30530E-06	587959.6	4136861.6	18.7	3.11	3.95	2.89	YES
L0019867	0	0.30530E-06	587951.1	4136861.9	18.6	3.11	3.95	2.89	YES
L0019868	0	0.30530E-06	587942.6	4136862.2	18.6	3.11	3.95	2.89	YES
L0019869	0	0.30530E-06	587934.1	4136862.4	18.7	3.11	3.95	2.89	YES
L0019870	0	0.30530E-06	587927.3	4136864.1	18.9	3.11	3.95	2.89	YES
L0019871	0	0.30530E-06	587928.5	4136872.6	19.0	3.11	3.95	2.89	YES
L0019872	0	0.30530E-06	587929.8	4136881.0	19.1	3.11	3.95	2.89	YES
L0019873	0	0.30530E-06	587931.0	4136889.4	19.1	3.11	3.95	2.89	YES
L0019874	0	0.30530E-06	587932.3	4136897.8	18.9	3.11	3.95	2.89	YES
L0019875	0	0.30530E-06	587933.5	4136906.2	18.7	3.11	3.95	2.89	YES
L0019876	0	0.30530E-06	587934.8	4136914.6	18.5	3.11	3.95	2.89	YES
L0019877	0	0.30530E-06	587936.0	4136923.0	18.5	3.11	3.95	2.89	YES
L0019878	0	0.30530E-06	587937.3	4136931.4	19.2	3.11	3.95	2.89	YES
L0019879	0	0.30530E-06	587938.5	4136939.8	19.8	3.11	3.95	2.89	YES
L0019880	0	0.30530E-06	587939.8	4136948.2	20.4	3.11	3.95		

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2.89     YES
 L0019881         0   0.30530E-06  587941.0 4136956.6    20.5     3.11     3.95
2.89     YES
 L0019882         0   0.30530E-06  587942.3 4136965.0    20.4     3.11     3.95
2.89     YES
 L0019883         0   0.30530E-06  587943.5 4136973.4    20.2     3.11     3.95
2.89     YES
 L0019884         0   0.30530E-06  587944.8 4136981.8    20.0     3.11     3.95
2.89     YES
 L0019885         0   0.30530E-06  587946.0 4136990.3    19.7     3.11     3.95
2.89     YES
 L0019886         0   0.30530E-06  587947.3 4136998.7    19.4     3.11     3.95
2.89     YES
 L0019887         0   0.30530E-06  587948.6 4137007.1    19.1     3.11     3.95
2.89     YES
 L0019888         0   0.30530E-06  587949.8 4137015.5    18.8     3.11     3.95
2.89     YES
 L0019889         0   0.30530E-06  587951.1 4137023.9    18.7     3.11     3.95
2.89     YES
 L0019890         0   0.30530E-06  587952.3 4137032.3    18.5     3.11     3.95
2.89     YES
 L0019891         0   0.30530E-06  587953.6 4137040.7    18.3     3.11     3.95
2.89     YES
 L0019892         0   0.30530E-06  587954.8 4137049.1    18.4     3.11     3.95
2.89     YES
 L0019893         0   0.30530E-06  587956.1 4137057.5    18.9     3.11     3.95
2.89     YES
 L0019894         0   0.30530E-06  587957.3 4137065.9    19.4     3.11     3.95
2.89     YES
 L0019895         0   0.30530E-06  587964.8 4137067.5    19.5     3.11     3.95
2.89     YES
 L0019896         0   0.30530E-06  587973.3 4137068.0    19.5     3.11     3.95
2.89     YES
 L0019897         0   0.30530E-06  587981.8 4137068.6    19.5     3.11     3.95
2.89     YES
 L0019898         0   0.30530E-06  587990.3 4137069.1    19.6     3.11     3.95
2.89     YES
 L0019899         0   0.30530E-06  587998.8 4137069.6    19.8     3.11     3.95
2.89     YES
 L0019900         0   0.30530E-06  588007.2 4137070.1    19.9     3.11     3.95
2.89     YES
 L0019901         0   0.30530E-06  588015.7 4137070.6    19.7     3.11     3.95
2.89     YES
 L0019902         0   0.30530E-06  588024.2 4137071.2    19.5     3.11     3.95
2.89     YES
 L0019903         0   0.30530E-06  588032.7 4137071.7    19.2     3.11     3.95
2.89     YES
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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE VARY
L0019904	0	0.30530E-06	588041.2	4137072.2	19.0	3.11	3.95	2.89	YES	
L0019905	0	0.30530E-06	588049.7	4137072.7	18.8	3.11	3.95	2.89	YES	
L0019906	0	0.30530E-06	588058.1	4137073.3	18.6	3.11	3.95	2.89	YES	
L0019907	0	0.30530E-06	588066.6	4137073.8	18.6	3.11	3.95	2.89	YES	
L0019908	0	0.30530E-06	588075.1	4137074.3	18.7	3.11	3.95	2.89	YES	
L0019909	0	0.30530E-06	588083.6	4137074.8	18.7	3.11	3.95	2.89	YES	
L0019910	0	0.30530E-06	588092.1	4137075.4	18.5	3.11	3.95	2.89	YES	
L0019911	0	0.30530E-06	588100.6	4137075.9	18.3	3.11	3.95	2.89	YES	
L0019912	0	0.30530E-06	588109.0	4137076.4	18.1	3.11	3.95	2.89	YES	
L0019913	0	0.30530E-06	588110.6	4137070.5	18.1	3.11	3.95	2.89	YES	
L0019914	0	0.30530E-06	588109.4	4137062.1	18.0	3.11	3.95	2.89	YES	
L0019915	0	0.30530E-06	588108.2	4137053.7	17.8	3.11	3.95	2.89	YES	
L0019916	0	0.30530E-06	588107.0	4137045.3	17.6	3.11	3.95	2.89	YES	
L0019917	0	0.30530E-06	588105.8	4137036.9	17.7	3.11	3.95	2.89	YES	
L0019918	0	0.30530E-06	588104.5	4137028.5	17.8	3.11	3.95			

2.89 YES							
L0019919	0	0.30530E-06	588103.3	4137020.1	17.9	3.11	3.95
2.89 YES							
L0019920	0	0.30530E-06	588102.1	4137011.7	17.9	3.11	3.95
2.89 YES							
L0019921	0	0.30530E-06	588100.9	4137003.2	17.8	3.11	3.95
2.89 YES							
L0019922	0	0.30530E-06	588099.7	4136994.8	17.7	3.11	3.95
2.89 YES							
L0019923	0	0.30530E-06	588098.5	4136986.4	17.7	3.11	3.95
2.89 YES							
L0019924	0	0.30530E-06	588097.3	4136978.0	17.9	3.11	3.95
2.89 YES							
L0019925	0	0.30530E-06	588096.0	4136969.6	18.2	3.11	3.95
2.89 YES							
L0019926	0	0.30530E-06	588094.8	4136961.2	18.6	3.11	3.95
2.89 YES							
L0019927	0	0.30530E-06	588093.6	4136952.8	18.8	3.11	3.95
2.89 YES							
L0019928	0	0.30530E-06	588092.4	4136944.4	18.9	3.11	3.95
2.89 YES							
L0019929	0	0.30530E-06	588091.2	4136935.9	18.9	3.11	3.95
2.89 YES							
L0019930	0	0.30530E-06	588090.0	4136927.5	19.0	3.11	3.95
2.89 YES							
L0019931	0	0.30530E-06	588088.8	4136919.1	19.0	3.11	3.95
2.89 YES							
L0019932	0	0.30530E-06	588087.6	4136910.7	19.0	3.11	3.95
2.89 YES							
L0019933	0	0.30530E-06	588086.3	4136902.3	19.1	3.11	3.95
2.89 YES							
L0019934	0	0.30530E-06	588085.1	4136893.9	19.1	3.11	3.95
2.89 YES							
L0019935	0	0.30530E-06	588083.9	4136885.5	19.2	3.11	3.95
2.89 YES							
L0019936	0	0.30530E-06	588081.2	4136878.9	19.3	3.11	3.95
2.89 YES							
L0019937	0	0.30530E-06	588072.7	4136879.1	19.3	3.11	3.95
2.89 YES							
L0019938	0	0.30530E-06	588064.2	4136879.2	19.3	3.11	3.95
2.89 YES							
L0019939	0	0.30530E-06	588055.7	4136879.4	19.1	3.11	3.95
2.89 YES							
L0019940	0	0.30530E-06	588047.2	4136879.6	18.9	3.11	3.95
2.89 YES							
L0019941	0	0.30530E-06	588038.7	4136879.8	18.6	3.11	3.95
2.89 YES							
L0019942	0	0.30530E-06	588030.2	4136880.0	18.5	3.11	3.95

2.89 YES
L0019943 0 0.30530E-06 588021.7 4136880.1 18.5 3.11 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0019944	0	0.30530E-06	588013.2	4136880.3	18.5	3.11	3.95	2.89	YES	
L0019945	0	0.30530E-06	588004.7	4136880.5	18.6	3.11	3.95	2.89	YES	
L0019946	0	0.30530E-06	587996.2	4136880.7	18.7	3.11	3.95	2.89	YES	
L0019947	0	0.30530E-06	587987.7	4136880.9	18.8	3.11	3.95	2.89	YES	
L0019948	0	0.30530E-06	587979.2	4136881.1	18.9	3.11	3.95	2.89	YES	
L0019949	0	0.30530E-06	587970.7	4136881.2	18.9	3.11	3.95	2.89	YES	
L0019950	0	0.30530E-06	587962.2	4136881.4	18.9	3.11	3.95	2.89	YES	
L0019951	0	0.30530E-06	587953.7	4136881.6	18.8	3.11	3.95	2.89	YES	
L0019952	0	0.30530E-06	587950.6	4136886.3	18.8	3.11	3.95	2.89	YES	
L0019953	0	0.30530E-06	587951.8	4136894.7	18.8	3.11	3.95	2.89	YES	
L0019954	0	0.30530E-06	587953.0	4136903.1	18.8	3.11	3.95	2.89	YES	
L0019955	0	0.30530E-06	587954.2	4136911.6	18.7	3.11	3.95	2.89	YES	
L0019956	0	0.30530E-06	587955.5	4136920.0	18.7	3.11	3.95			

2.89 YES							
L0019957	0	0.30530E-06	587956.7	4136928.4	18.8	3.11	3.95
2.89 YES							
L0019958	0	0.30530E-06	587957.9	4136936.8	18.9	3.11	3.95
2.89 YES							
L0019959	0	0.30530E-06	587959.2	4136945.2	18.9	3.11	3.95
2.89 YES							
L0019960	0	0.30530E-06	587960.4	4136953.6	18.8	3.11	3.95
2.89 YES							
L0019961	0	0.30530E-06	587961.6	4136962.0	18.6	3.11	3.95
2.89 YES							
L0019962	0	0.30530E-06	587962.8	4136970.4	18.5	3.11	3.95
2.89 YES							
L0019963	0	0.30530E-06	587964.1	4136978.8	18.3	3.11	3.95
2.89 YES							
L0019964	0	0.30530E-06	587965.3	4136987.3	18.2	3.11	3.95
2.89 YES							
L0019965	0	0.30530E-06	587966.5	4136995.7	18.0	3.11	3.95
2.89 YES							
L0019966	0	0.30530E-06	587967.8	4137004.1	17.9	3.11	3.95
2.89 YES							
L0019967	0	0.30530E-06	587969.0	4137012.5	17.8	3.11	3.95
2.89 YES							
L0019968	0	0.30530E-06	587970.2	4137020.9	17.8	3.11	3.95
2.89 YES							
L0019969	0	0.30530E-06	587971.4	4137029.3	17.8	3.11	3.95
2.89 YES							
L0019970	0	0.30530E-06	587972.7	4137037.7	17.9	3.11	3.95
2.89 YES							
L0019971	0	0.30530E-06	587973.9	4137046.1	18.0	3.11	3.95
2.89 YES							
L0019972	0	0.30530E-06	587978.3	4137051.2	18.4	3.11	3.95
2.89 YES							
L0019973	0	0.30530E-06	587986.7	4137051.9	18.5	3.11	3.95
2.89 YES							
L0019974	0	0.30530E-06	587995.2	4137052.6	18.7	3.11	3.95
2.89 YES							
L0019975	0	0.30530E-06	588003.7	4137053.3	18.8	3.11	3.95
2.89 YES							
L0019976	0	0.30530E-06	588012.2	4137053.9	18.8	3.11	3.95
2.89 YES							
L0019977	0	0.30530E-06	588020.6	4137054.6	18.6	3.11	3.95
2.89 YES							
L0019978	0	0.30530E-06	588029.1	4137055.3	18.4	3.11	3.95
2.89 YES							
L0019979	0	0.30530E-06	588037.6	4137056.0	18.3	3.11	3.95
2.89 YES							
L0019980	0	0.30530E-06	588046.0	4137056.7	18.3	3.11	3.95

2.89 YES
L0019981 0 0.30530E-06 588054.5 4137057.4 18.3 3.11 3.95
2.89 YES
L0019982 0 0.30530E-06 588063.0 4137058.1 18.3 3.11 3.95
2.89 YES
L0019983 0 0.30530E-06 588071.5 4137058.8 18.3 3.11 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0019984	0	0.30530E-06	588079.9	4137059.5	18.4	3.11	3.95	2.89	YES	
L0019985	0	0.30530E-06	588088.4	4137060.1	18.3	3.11	3.95	2.89	YES	
L0019986	0	0.30530E-06	588090.5	4137055.1	18.1	3.11	3.95	2.89	YES	
L0019987	0	0.30530E-06	588088.9	4137046.8	17.9	3.11	3.95	2.89	YES	
L0019988	0	0.30530E-06	588087.4	4137038.4	17.9	3.11	3.95	2.89	YES	
L0019989	0	0.30530E-06	588085.8	4137030.1	17.8	3.11	3.95	2.89	YES	
L0019990	0	0.30530E-06	588084.2	4137021.7	17.7	3.11	3.95	2.89	YES	
L0019991	0	0.30530E-06	588082.6	4137013.3	17.6	3.11	3.95	2.89	YES	
L0019992	0	0.30530E-06	588081.0	4137005.0	17.7	3.11	3.95	2.89	YES	
L0019993	0	0.30530E-06	588079.5	4136996.6	17.7	3.11	3.95	2.89	YES	
L0019994	0	0.30530E-06	588077.9	4136988.3	17.7	3.11	3.95			

2.89 YES							
L0019995	0	0.30530E-06	588076.3	4136979.9	17.8	3.11	3.95
2.89 YES							
L0019996	0	0.30530E-06	588074.7	4136971.6	18.0	3.11	3.95
2.89 YES							
L0019997	0	0.30530E-06	588073.1	4136963.2	18.2	3.11	3.95
2.89 YES							
L0019998	0	0.30530E-06	588071.6	4136954.9	18.4	3.11	3.95
2.89 YES							
L0019999	0	0.30530E-06	588070.0	4136946.5	18.4	3.11	3.95
2.89 YES							
L0020000	0	0.30530E-06	588068.4	4136938.2	18.4	3.11	3.95
2.89 YES							
L0020001	0	0.30530E-06	588066.8	4136929.8	18.4	3.11	3.95
2.89 YES							
L0020002	0	0.30530E-06	588065.3	4136921.5	18.5	3.11	3.95
2.89 YES							
L0020003	0	0.30530E-06	588063.7	4136913.1	18.6	3.11	3.95
2.89 YES							
L0020004	0	0.30530E-06	588062.1	4136904.8	18.8	3.11	3.95
2.89 YES							
L0020005	0	0.30530E-06	588053.8	4136903.9	18.7	3.11	3.95
2.89 YES							
L0020006	0	0.30530E-06	588045.4	4136903.4	18.6	3.11	3.95
2.89 YES							
L0020007	0	0.30530E-06	588036.9	4136902.8	18.6	3.11	3.95
2.89 YES							
L0020008	0	0.30530E-06	588028.4	4136902.2	18.5	3.11	3.95
2.89 YES							
L0020009	0	0.30530E-06	588019.9	4136901.6	18.4	3.11	3.95
2.89 YES							
L0020010	0	0.30530E-06	588011.4	4136901.1	18.4	3.11	3.95
2.89 YES							
L0020011	0	0.30530E-06	588003.0	4136900.5	18.5	3.11	3.95
2.89 YES							
L0020012	0	0.30530E-06	587994.5	4136899.9	18.7	3.11	3.95
2.89 YES							
L0020013	0	0.30530E-06	587986.0	4136899.3	18.8	3.11	3.95
2.89 YES							
L0020014	0	0.30530E-06	587977.5	4136898.8	18.9	3.11	3.95
2.89 YES							
L0020015	0	0.30530E-06	587969.0	4136898.2	18.9	3.11	3.95
2.89 YES							
L0020016	0	0.30530E-06	587964.8	4136901.4	18.9	3.11	3.95
2.89 YES							
L0020017	0	0.30530E-06	587966.4	4136909.7	18.8	3.11	3.95
2.89 YES							
L0020018	0	0.30530E-06	587967.9	4136918.1	18.7	3.11	3.95

2.89 YES
L0020019 0 0.30530E-06 587969.5 4136926.4 18.7 3.11 3.95
2.89 YES
L0020020 0 0.30530E-06 587971.1 4136934.8 18.6 3.11 3.95
2.89 YES
L0020021 0 0.30530E-06 587972.6 4136943.1 18.6 3.11 3.95
2.89 YES
L0020022 0 0.30530E-06 587974.2 4136951.5 18.5 3.11 3.95
2.89 YES
L0020023 0 0.30530E-06 587975.8 4136959.9 18.4 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020024	0	0.30530E-06	587977.4	4136968.2	18.3	3.11	3.95	2.89	YES	
L0020025	0	0.30530E-06	587978.9	4136976.6	18.2	3.11	3.95	2.89	YES	
L0020026	0	0.30530E-06	587980.5	4136984.9	18.1	3.11	3.95	2.89	YES	
L0020027	0	0.30530E-06	587982.1	4136993.3	18.0	3.11	3.95	2.89	YES	
L0020028	0	0.30530E-06	587983.6	4137001.6	18.0	3.11	3.95	2.89	YES	
L0020029	0	0.30530E-06	587985.2	4137010.0	18.0	3.11	3.95	2.89	YES	
L0020030	0	0.30530E-06	587986.8	4137018.3	18.0	3.11	3.95	2.89	YES	
L0020031	0	0.30530E-06	587988.3	4137026.7	18.0	3.11	3.95	2.89	YES	
L0020032	0	0.30530E-06	587989.9	4137035.0	18.1	3.11	3.95			

2.89 YES							
L0020033	0	0.30530E-06	587994.7	4137039.6	18.1	3.11	3.95
2.89 YES							
L0020034	0	0.30530E-06	588003.2	4137040.0	18.2	3.11	3.95
2.89 YES							
L0020035	0	0.30530E-06	588011.7	4137040.3	18.2	3.11	3.95
2.89 YES							
L0020036	0	0.30530E-06	588020.2	4137040.6	18.1	3.11	3.95
2.89 YES							
L0020037	0	0.30530E-06	588028.7	4137040.9	17.9	3.11	3.95
2.89 YES							
L0020038	0	0.30530E-06	588037.2	4137041.2	17.9	3.11	3.95
2.89 YES							
L0020039	0	0.30530E-06	588045.7	4137041.5	17.9	3.11	3.95
2.89 YES							
L0020040	0	0.30530E-06	588054.2	4137041.9	18.0	3.11	3.95
2.89 YES							
L0020041	0	0.30530E-06	588062.7	4137042.2	18.0	3.11	3.95
2.89 YES							
L0020042	0	0.30530E-06	588066.1	4137038.0	18.0	3.11	3.95
2.89 YES							
L0020043	0	0.30530E-06	588064.6	4137029.6	17.9	3.11	3.95
2.89 YES							
L0020044	0	0.30530E-06	588063.2	4137021.3	17.9	3.11	3.95
2.89 YES							
L0020045	0	0.30530E-06	588061.7	4137012.9	17.9	3.11	3.95
2.89 YES							
L0020046	0	0.30530E-06	588060.3	4137004.5	17.9	3.11	3.95
2.89 YES							
L0020047	0	0.30530E-06	588058.9	4136996.1	17.9	3.11	3.95
2.89 YES							
L0020048	0	0.30530E-06	588057.4	4136987.8	17.9	3.11	3.95
2.89 YES							
L0020049	0	0.30530E-06	588056.0	4136979.4	18.0	3.11	3.95
2.89 YES							
L0020050	0	0.30530E-06	588054.5	4136971.0	18.1	3.11	3.95
2.89 YES							
L0020051	0	0.30530E-06	588053.1	4136962.6	18.1	3.11	3.95
2.89 YES							
L0020052	0	0.30530E-06	588051.7	4136954.3	18.2	3.11	3.95
2.89 YES							
L0020053	0	0.30530E-06	588050.2	4136945.9	18.2	3.11	3.95
2.89 YES							
L0020054	0	0.30530E-06	588048.8	4136937.5	18.3	3.11	3.95
2.89 YES							
L0020055	0	0.30530E-06	588047.3	4136929.1	18.3	3.11	3.95
2.89 YES							
L0020056	0	0.30530E-06	588045.9	4136920.7	18.4	3.11	3.95

2.89 YES
L0020057 0 0.30530E-06 588037.5 4136920.0 18.4 3.11 3.95
2.89 YES
L0020058 0 0.30530E-06 588029.0 4136919.2 18.4 3.11 3.95
2.89 YES
L0020059 0 0.30530E-06 588020.6 4136918.5 18.3 3.11 3.95
2.89 YES
L0020060 0 0.30530E-06 588012.1 4136917.8 18.3 3.11 3.95
2.89 YES
L0020061 0 0.30530E-06 588003.6 4136917.1 18.3 3.11 3.95
2.89 YES
L0020062 0 0.30530E-06 587995.1 4136916.4 18.5 3.11 3.95
2.89 YES
L0020063 0 0.30530E-06 587986.7 4136915.7 18.6 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0020064	0	0.30530E-06	587978.4	4136915.1	18.7	3.11	3.95	2.89	YES	
L0020065	0	0.30530E-06	587980.4	4136923.4	18.6	3.11	3.95	2.89	YES	
L0020066	0	0.30530E-06	587982.3	4136931.7	18.5	3.11	3.95	2.89	YES	
L0020067	0	0.30530E-06	587984.2	4136940.0	18.4	3.11	3.95	2.89	YES	
L0020068	0	0.30530E-06	587986.1	4136948.3	18.3	3.11	3.95	2.89	YES	
L0020069	0	0.30530E-06	587988.0	4136956.5	18.2	3.11	3.95	2.89	YES	
L0020070	0	0.30530E-06	587990.0	4136964.8	18.2	3.11	3.95			

2.89 YES							
L0020071	0	0.30530E-06	587991.9	4136973.1	18.1	3.11	3.95
2.89 YES							
L0020072	0	0.30530E-06	587993.8	4136981.4	18.1	3.11	3.95
2.89 YES							
L0020073	0	0.30530E-06	587995.7	4136989.7	18.1	3.11	3.95
2.89 YES							
L0020074	0	0.30530E-06	587997.7	4136997.9	18.1	3.11	3.95
2.89 YES							
L0020075	0	0.30530E-06	587999.6	4137006.2	18.1	3.11	3.95
2.89 YES							
L0020076	0	0.30530E-06	588001.5	4137014.5	18.1	3.11	3.95
2.89 YES							
L0020077	0	0.30530E-06	588004.5	4137021.6	18.2	3.11	3.95
2.89 YES							
L0020078	0	0.30530E-06	588012.9	4137022.4	18.2	3.11	3.95
2.89 YES							
L0020079	0	0.30530E-06	588021.4	4137023.3	18.2	3.11	3.95
2.89 YES							
L0020080	0	0.30530E-06	588029.8	4137024.2	18.2	3.11	3.95
2.89 YES							
L0020081	0	0.30530E-06	588038.3	4137025.1	18.1	3.11	3.95
2.89 YES							
L0020082	0	0.30530E-06	588046.8	4137026.0	18.1	3.11	3.95
2.89 YES							
L0020083	0	0.30530E-06	588047.4	4137019.8	18.1	3.11	3.95
2.89 YES							
L0020084	0	0.30530E-06	588045.7	4137011.5	18.2	3.11	3.95
2.89 YES							
L0020085	0	0.30530E-06	588043.9	4137003.2	18.2	3.11	3.95
2.89 YES							
L0020086	0	0.30530E-06	588042.2	4136994.8	18.2	3.11	3.95
2.89 YES							
L0020087	0	0.30530E-06	588040.5	4136986.5	18.2	3.11	3.95
2.89 YES							
L0020088	0	0.30530E-06	588038.7	4136978.2	18.2	3.11	3.95
2.89 YES							
L0020089	0	0.30530E-06	588037.0	4136969.9	18.3	3.11	3.95
2.89 YES							
L0020090	0	0.30530E-06	588035.2	4136961.6	18.3	3.11	3.95
2.89 YES							
L0020091	0	0.30530E-06	588033.5	4136953.2	18.3	3.11	3.95
2.89 YES							
L0020092	0	0.30530E-06	588031.8	4136944.9	18.3	3.11	3.95
2.89 YES							
L0020093	0	0.30530E-06	588027.6	4136939.2	18.3	3.11	3.95
2.89 YES							
L0020094	0	0.30530E-06	588019.2	4136937.9	18.2	3.11	3.95

```
2.89     YES
 L0020095         0   0.30530E-06  588010.8 4136936.7    18.2     3.11     3.95
2.89     YES
 L0020096         0   0.30530E-06  588002.3 4136935.4    18.2     3.11     3.95
2.89     YES
 L0020097         0   0.30530E-06  587993.9 4136934.2    18.3     3.11     3.95
2.89     YES
 L0020098         0   0.30530E-06  587994.5 4136940.9    18.3     3.11     3.95
2.89     YES
 L0020099         0   0.30530E-06  587996.7 4136949.1    18.2     3.11     3.95
2.89     YES
 L0020100         0   0.30530E-06  587998.9 4136957.3    18.2     3.11     3.95
2.89     YES
 L0020101         0   0.30530E-06  588001.2 4136965.5    18.2     3.11     3.95
2.89     YES
 L0020102         0   0.30530E-06  588003.4 4136973.7    18.2     3.11     3.95
2.89     YES
 L0020103         0   0.30530E-06  588005.6 4136982.0    18.2     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        13:36:48

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0020104         0   0.30530E-06  588007.8 4136990.2    18.2     3.11     3.95
2.89     YES
 L0020105         0   0.30530E-06  588010.0 4136998.4    18.2     3.11     3.95
2.89     YES
 L0020106         0   0.30530E-06  588012.2 4137006.6    18.2     3.11     3.95
2.89     YES
 L0020107         0   0.30530E-06  588019.5 4137008.1    18.3     3.11     3.95
2.89     YES
 L0020108         0   0.30530E-06  588028.0 4137008.1    18.3     3.11     3.95
```

2.89 YES							
L0020109	0	0.30530E-06	588029.1	4137002.5	18.3	3.11	3.95
2.89 YES							
L0020110	0	0.30530E-06	588026.9	4136994.3	18.3	3.11	3.95
2.89 YES							
L0020111	0	0.30530E-06	588024.6	4136986.1	18.2	3.11	3.95
2.89 YES							
L0020112	0	0.30530E-06	588022.4	4136977.9	18.2	3.11	3.95
2.89 YES							
L0020113	0	0.30530E-06	588020.1	4136969.7	18.2	3.11	3.95
2.89 YES							
L0020114	0	0.30530E-06	588017.9	4136961.5	18.2	3.11	3.95
2.89 YES							
L0020115	0	0.30530E-06	588015.6	4136953.3	18.2	3.11	3.95
2.89 YES							
L0020116	0	0.29810E-06	587615.5	4136711.3	21.2	3.11	3.95
2.89 YES							
L0020117	0	0.29810E-06	587623.7	4136709.3	21.1	3.11	3.95
2.89 YES							
L0020118	0	0.29810E-06	587632.0	4136707.4	20.9	3.11	3.95
2.89 YES							
L0020119	0	0.29810E-06	587640.3	4136705.4	20.8	3.11	3.95
2.89 YES							
L0020120	0	0.29810E-06	587648.6	4136703.5	20.8	3.11	3.95
2.89 YES							
L0020121	0	0.29810E-06	587656.8	4136701.5	20.8	3.11	3.95
2.89 YES							
L0020122	0	0.29810E-06	587665.1	4136699.6	20.9	3.11	3.95
2.89 YES							
L0020123	0	0.29810E-06	587673.4	4136697.6	20.9	3.11	3.95
2.89 YES							
L0020124	0	0.29810E-06	587681.6	4136695.7	20.9	3.11	3.95
2.89 YES							
L0020125	0	0.29810E-06	587689.9	4136693.7	20.9	3.11	3.95
2.89 YES							
L0020126	0	0.29810E-06	587698.2	4136691.8	20.9	3.11	3.95
2.89 YES							
L0020127	0	0.29810E-06	587706.5	4136689.8	20.8	3.11	3.95
2.89 YES							
L0020128	0	0.29810E-06	587714.7	4136687.9	20.7	3.11	3.95
2.89 YES							
L0020129	0	0.29810E-06	587723.0	4136685.9	20.7	3.11	3.95
2.89 YES							
L0020130	0	0.29810E-06	587731.3	4136684.0	20.7	3.11	3.95
2.89 YES							
L0020131	0	0.29810E-06	587739.6	4136682.0	20.6	3.11	3.95
2.89 YES							
L0020132	0	0.29810E-06	587747.8	4136680.1	20.7	3.11	3.95

```
2.89     YES
 L0020133         0   0.29810E-06  587756.1 4136678.1    20.7     3.11     3.95
2.89     YES
 L0020134         0   0.29810E-06  587764.4 4136676.2    20.7     3.11     3.95
2.89     YES
 L0020135         0   0.29810E-06  587772.7 4136674.2    20.7     3.11     3.95
2.89     YES
 L0020136         0   0.29810E-06  587780.9 4136672.3    20.7     3.11     3.95
2.89     YES
 L0020137         0   0.29810E-06  587789.2 4136670.3    20.7     3.11     3.95
2.89     YES
 L0020138         0   0.29810E-06  587797.5 4136668.4    20.7     3.11     3.95
2.89     YES
 L0020139         0   0.29810E-06  587805.7 4136666.4    20.6     3.11     3.95
2.89     YES
 L0020140         0   0.29810E-06  587814.0 4136664.5    20.6     3.11     3.95
2.89     YES
 L0020141         0   0.29810E-06  587822.3 4136662.5    20.5     3.11     3.95
2.89     YES
 L0020142         0   0.29810E-06  587830.6 4136660.6    20.4     3.11     3.95
2.89     YES
 L0020143         0   0.29810E-06  587838.8 4136658.6    20.2     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48

                                   PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0020144         0   0.29810E-06  587847.1 4136656.7    20.2     3.11     3.95
2.89     YES
 L0020145         0   0.29810E-06  587855.4 4136654.7    20.2     3.11     3.95
2.89     YES
 L0020146         0   0.29810E-06  587863.7 4136652.8    20.2     3.11     3.95
```

2.89	YES						
L0020147	0	0.29810E-06	587871.9	4136650.8	20.2	3.11	3.95
2.89	YES						
L0020148	0	0.29810E-06	587880.2	4136648.9	20.2	3.11	3.95
2.89	YES						
L0020149	0	0.29810E-06	587888.5	4136646.9	20.2	3.11	3.95
2.89	YES						
L0020150	0	0.29810E-06	587896.8	4136645.0	20.2	3.11	3.95
2.89	YES						
L0020151	0	0.29810E-06	587905.0	4136643.0	20.1	3.11	3.95
2.89	YES						
L0020152	0	0.29810E-06	587913.3	4136641.1	20.1	3.11	3.95
2.89	YES						
L0020153	0	0.29810E-06	587921.6	4136639.1	20.2	3.11	3.95
2.89	YES						
L0020154	0	0.29810E-06	587929.8	4136637.2	20.2	3.11	3.95
2.89	YES						
L0020155	0	0.29810E-06	587938.1	4136635.2	20.3	3.11	3.95
2.89	YES						
L0020156	0	0.29810E-06	587946.4	4136633.3	20.4	3.11	3.95
2.89	YES						
L0020157	0	0.29810E-06	587954.7	4136631.3	20.4	3.11	3.95
2.89	YES						
L0020158	0	0.29810E-06	587962.8	4136629.6	20.4	3.11	3.95
2.89	YES						
L0020159	0	0.29810E-06	587964.4	4136638.0	20.3	3.11	3.95
2.89	YES						
L0020160	0	0.29810E-06	587966.0	4136646.3	20.2	3.11	3.95
2.89	YES						
L0020161	0	0.29810E-06	587967.6	4136654.7	20.2	3.11	3.95
2.89	YES						
L0020162	0	0.29810E-06	587969.2	4136663.0	20.2	3.11	3.95
2.89	YES						
L0020163	0	0.29810E-06	587970.8	4136671.4	20.2	3.11	3.95
2.89	YES						
L0020164	0	0.29810E-06	587972.4	4136679.7	20.1	3.11	3.95
2.89	YES						
L0020165	0	0.29810E-06	587974.0	4136688.1	20.1	3.11	3.95
2.89	YES						
L0020166	0	0.29810E-06	587975.6	4136696.4	20.1	3.11	3.95
2.89	YES						
L0020167	0	0.29810E-06	587977.2	4136704.8	20.1	3.11	3.95
2.89	YES						
L0020168	0	0.29810E-06	587978.8	4136713.1	20.1	3.11	3.95
2.89	YES						
L0020169	0	0.29810E-06	587980.4	4136721.5	20.1	3.11	3.95
2.89	YES						
L0020170	0	0.29810E-06	587982.0	4136729.8	20.0	3.11	3.95

```
2.89     YES
 L0020171         0   0.29810E-06  587983.6 4136738.2    20.0     3.11     3.95
2.89     YES
 L0020172         0   0.29810E-06  587985.2 4136746.5    20.1     3.11     3.95
2.89     YES
 L0020173         0   0.29810E-06  587986.8 4136754.8    20.2     3.11     3.95
2.89     YES
 L0020174         0   0.29810E-06  587988.4 4136763.2    20.3     3.11     3.95
2.89     YES
 L0020175         0   0.29810E-06  587990.0 4136771.5    20.2     3.11     3.95
2.89     YES
 L0020176         0   0.29810E-06  587991.6 4136779.9    19.9     3.11     3.95
2.89     YES
 L0020177         0   0.29810E-06  587992.3 4136787.5    19.7     3.11     3.95
2.89     YES
 L0020178         0   0.29810E-06  587983.8 4136788.0    19.9     3.11     3.95
2.89     YES
 L0020179         0   0.29810E-06  587975.3 4136788.5    19.9     3.11     3.95
2.89     YES
 L0020180         0   0.29810E-06  587966.8 4136788.9    20.0     3.11     3.95
2.89     YES
 L0020181         0   0.29810E-06  587958.3 4136789.4    20.1     3.11     3.95
2.89     YES
 L0020182         0   0.29810E-06  587949.8 4136789.9    20.0     3.11     3.95
2.89     YES
 L0020183         0   0.29810E-06  587941.4 4136790.4    20.0     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                         ***       13:36:48

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0020184         0   0.29810E-06  587932.9 4136790.9    19.9     3.11     3.95
```

2.89 YES							
L0020185	0	0.29810E-06	587924.4	4136791.4	19.8	3.11	3.95
2.89 YES							
L0020186	0	0.29810E-06	587915.9	4136791.8	19.7	3.11	3.95
2.89 YES							
L0020187	0	0.29810E-06	587907.4	4136792.3	19.7	3.11	3.95
2.89 YES							
L0020188	0	0.29810E-06	587898.9	4136792.8	19.6	3.11	3.95
2.89 YES							
L0020189	0	0.29810E-06	587890.4	4136793.3	19.5	3.11	3.95
2.89 YES							
L0020190	0	0.29810E-06	587881.9	4136793.8	19.5	3.11	3.95
2.89 YES							
L0020191	0	0.29810E-06	587873.5	4136794.3	19.6	3.11	3.95
2.89 YES							
L0020192	0	0.29810E-06	587865.0	4136794.8	19.7	3.11	3.95
2.89 YES							
L0020193	0	0.29810E-06	587856.6	4136796.0	19.8	3.11	3.95
2.89 YES							
L0020194	0	0.29810E-06	587848.4	4136798.0	20.0	3.11	3.95
2.89 YES							
L0020195	0	0.29810E-06	587840.1	4136800.1	20.1	3.11	3.95
2.89 YES							
L0020196	0	0.29810E-06	587831.9	4136802.2	20.1	3.11	3.95
2.89 YES							
L0020197	0	0.29810E-06	587823.6	4136804.3	20.1	3.11	3.95
2.89 YES							
L0020198	0	0.29810E-06	587815.4	4136806.3	20.1	3.11	3.95
2.89 YES							
L0020199	0	0.29810E-06	587807.1	4136808.4	20.1	3.11	3.95
2.89 YES							
L0020200	0	0.29810E-06	587798.9	4136810.5	20.0	3.11	3.95
2.89 YES							
L0020201	0	0.29810E-06	587790.7	4136812.5	20.0	3.11	3.95
2.89 YES							
L0020202	0	0.29810E-06	587782.4	4136814.6	20.0	3.11	3.95
2.89 YES							
L0020203	0	0.29810E-06	587774.2	4136816.7	20.1	3.11	3.95
2.89 YES							
L0020204	0	0.29810E-06	587765.9	4136818.8	20.2	3.11	3.95
2.89 YES							
L0020205	0	0.29810E-06	587757.7	4136820.8	20.3	3.11	3.95
2.89 YES							
L0020206	0	0.29810E-06	587749.4	4136822.9	20.3	3.11	3.95
2.89 YES							
L0020207	0	0.29810E-06	587741.2	4136825.0	20.3	3.11	3.95
2.89 YES							
L0020208	0	0.29810E-06	587732.9	4136827.1	20.3	3.11	3.95

2.89 YES
L0020209 0 0.29810E-06 587724.7 4136829.1 20.3 3.11 3.95
2.89 YES
L0020210 0 0.29810E-06 587716.5 4136831.2 20.3 3.11 3.95
2.89 YES
L0020211 0 0.29810E-06 587708.2 4136833.3 20.2 3.11 3.95
2.89 YES
L0020212 0 0.29810E-06 587700.0 4136835.3 20.1 3.11 3.95
2.89 YES
L0020213 0 0.29810E-06 587691.7 4136837.4 20.0 3.11 3.95
2.89 YES
L0020214 0 0.29810E-06 587683.5 4136839.5 20.2 3.11 3.95
2.89 YES
L0020215 0 0.29810E-06 587675.2 4136841.6 20.4 3.11 3.95
2.89 YES
L0020216 0 0.29810E-06 587667.0 4136843.6 20.6 3.11 3.95
2.89 YES
L0020217 0 0.29810E-06 587658.8 4136845.7 20.7 3.11 3.95
2.89 YES
L0020218 0 0.29810E-06 587650.5 4136847.8 20.7 3.11 3.95
2.89 YES
L0020219 0 0.29810E-06 587642.3 4136849.9 20.7 3.11 3.95
2.89 YES
L0020220 0 0.29810E-06 587636.1 4136848.7 20.7 3.11 3.95
2.89 YES
L0020221 0 0.29810E-06 587634.3 4136840.4 20.9 3.11 3.95
2.89 YES
L0020222 0 0.29810E-06 587632.5 4136832.0 21.0 3.11 3.95
2.89 YES
L0020223 0 0.29810E-06 587630.8 4136823.7 21.1 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY BY

L0020224	0	0.29810E-06	587629.0	4136815.4	21.2	3.11	3.95	2.89 YES
L0020225	0	0.29810E-06	587627.3	4136807.1	21.2	3.11	3.95	2.89 YES
L0020226	0	0.29810E-06	587625.5	4136798.8	21.2	3.11	3.95	2.89 YES
L0020227	0	0.29810E-06	587623.7	4136790.5	21.2	3.11	3.95	2.89 YES
L0020228	0	0.29810E-06	587622.0	4136782.1	21.3	3.11	3.95	2.89 YES
L0020229	0	0.29810E-06	587620.2	4136773.8	21.3	3.11	3.95	2.89 YES
L0020230	0	0.29810E-06	587618.5	4136765.5	21.3	3.11	3.95	2.89 YES
L0020231	0	0.29810E-06	587616.7	4136757.2	21.4	3.11	3.95	2.89 YES
L0020232	0	0.29810E-06	587614.9	4136748.9	21.4	3.11	3.95	2.89 YES
L0020233	0	0.29810E-06	587613.2	4136740.6	21.4	3.11	3.95	2.89 YES
L0020234	0	0.29810E-06	587611.4	4136732.3	21.5	3.11	3.95	2.89 YES
L0020235	0	0.29810E-06	587619.1	4136729.9	21.4	3.11	3.95	2.89 YES
L0020236	0	0.29810E-06	587627.4	4136727.8	21.1	3.11	3.95	2.89 YES
L0020237	0	0.29810E-06	587635.6	4136725.8	20.8	3.11	3.95	2.89 YES
L0020238	0	0.29810E-06	587643.9	4136723.8	20.5	3.11	3.95	2.89 YES
L0020239	0	0.29810E-06	587652.1	4136721.7	20.6	3.11	3.95	2.89 YES
L0020240	0	0.29810E-06	587660.4	4136719.7	20.6	3.11	3.95	2.89 YES
L0020241	0	0.29810E-06	587668.7	4136717.6	20.6	3.11	3.95	2.89 YES
L0020242	0	0.29810E-06	587676.9	4136715.6	20.5	3.11	3.95	2.89 YES
L0020243	0	0.29810E-06	587685.2	4136713.6	20.5	3.11	3.95	2.89 YES
L0020244	0	0.29810E-06	587693.4	4136711.5	20.4	3.11	3.95	2.89 YES
L0020245	0	0.29810E-06	587701.7	4136709.5	20.4	3.11	3.95	2.89 YES
L0020246	0	0.29810E-06	587709.9	4136707.5	20.3	3.11	3.95	

```
2.89     YES
 L0020247         0   0.29810E-06  587718.2 4136705.4    20.3     3.11     3.95
2.89     YES
 L0020248         0   0.29810E-06  587726.4 4136703.4    20.3     3.11     3.95
2.89     YES
 L0020249         0   0.29810E-06  587734.7 4136701.3    20.3     3.11     3.95
2.89     YES
 L0020250         0   0.29810E-06  587742.9 4136699.3    20.4     3.11     3.95
2.89     YES
 L0020251         0   0.29810E-06  587751.2 4136697.3    20.4     3.11     3.95
2.89     YES
 L0020252         0   0.29810E-06  587759.4 4136695.2    20.5     3.11     3.95
2.89     YES
 L0020253         0   0.29810E-06  587767.7 4136693.2    20.5     3.11     3.95
2.89     YES
 L0020254         0   0.29810E-06  587775.9 4136691.1    20.6     3.11     3.95
2.89     YES
 L0020255         0   0.29810E-06  587784.2 4136689.1    20.6     3.11     3.95
2.89     YES
 L0020256         0   0.29810E-06  587792.4 4136687.1    20.6     3.11     3.95
2.89     YES
 L0020257         0   0.29810E-06  587800.7 4136685.0    20.4     3.11     3.95
2.89     YES
 L0020258         0   0.29810E-06  587808.9 4136683.0    20.3     3.11     3.95
2.89     YES
 L0020259         0   0.29810E-06  587817.2 4136680.9    20.1     3.11     3.95
2.89     YES
 L0020260         0   0.29810E-06  587825.4 4136678.9    20.0     3.11     3.95
2.89     YES
 L0020261         0   0.29810E-06  587833.7 4136676.9    19.8     3.11     3.95
2.89     YES
 L0020262         0   0.29810E-06  587841.9 4136674.8    19.7     3.11     3.95
2.89     YES
 L0020263         0   0.29810E-06  587850.2 4136672.8    19.9     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48

                                  PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE VARY BY
L0020264	0	0.29810E-06	587858.4	4136670.7	20.1	3.11	3.95	2.89 YES
L0020265	0	0.29810E-06	587866.7	4136668.7	20.2	3.11	3.95	2.89 YES
L0020266	0	0.29810E-06	587874.9	4136666.7	20.2	3.11	3.95	2.89 YES
L0020267	0	0.29810E-06	587883.2	4136664.6	20.2	3.11	3.95	2.89 YES
L0020268	0	0.29810E-06	587891.4	4136662.6	20.2	3.11	3.95	2.89 YES
L0020269	0	0.29810E-06	587899.7	4136660.5	20.2	3.11	3.95	2.89 YES
L0020270	0	0.29810E-06	587907.9	4136658.5	20.1	3.11	3.95	2.89 YES
L0020271	0	0.29810E-06	587916.2	4136656.5	20.1	3.11	3.95	2.89 YES
L0020272	0	0.29810E-06	587924.5	4136654.4	20.1	3.11	3.95	2.89 YES
L0020273	0	0.29810E-06	587932.7	4136652.4	20.0	3.11	3.95	2.89 YES
L0020274	0	0.29810E-06	587941.0	4136650.3	20.0	3.11	3.95	2.89 YES
L0020275	0	0.29810E-06	587946.9	4136651.9	20.1	3.11	3.95	2.89 YES
L0020276	0	0.29810E-06	587948.7	4136660.2	20.2	3.11	3.95	2.89 YES
L0020277	0	0.29810E-06	587950.5	4136668.6	20.2	3.11	3.95	2.89 YES
L0020278	0	0.29810E-06	587952.4	4136676.9	20.2	3.11	3.95	2.89 YES
L0020279	0	0.29810E-06	587954.2	4136685.2	20.2	3.11	3.95	2.89 YES
L0020280	0	0.29810E-06	587956.0	4136693.5	20.2	3.11	3.95	2.89 YES
L0020281	0	0.29810E-06	587957.8	4136701.8	20.3	3.11	3.95	2.89 YES
L0020282	0	0.29810E-06	587959.6	4136710.1	20.3	3.11	3.95	2.89 YES
L0020283	0	0.29810E-06	587961.4	4136718.4	20.3	3.11	3.95	2.89 YES
L0020284	0	0.29810E-06	587963.2	4136726.7	20.3	3.11	3.95	

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2.89     YES
 L0020285         0   0.29810E-06  587965.0 4136735.0    20.2     3.11     3.95
2.89     YES
 L0020286         0   0.29810E-06  587966.8 4136743.3    20.2     3.11     3.95
2.89     YES
 L0020287         0   0.29810E-06  587968.6 4136751.6    20.2     3.11     3.95
2.89     YES
 L0020288         0   0.29810E-06  587970.4 4136759.9    20.3     3.11     3.95
2.89     YES
 L0020289         0   0.29810E-06  587972.2 4136768.2    20.3     3.11     3.95
2.89     YES
 L0020290         0   0.29810E-06  587971.1 4136774.3    20.2     3.11     3.95
2.89     YES
 L0020291         0   0.29810E-06  587962.6 4136774.8    20.2     3.11     3.95
2.89     YES
 L0020292         0   0.29810E-06  587954.1 4136775.4    20.1     3.11     3.95
2.89     YES
 L0020293         0   0.29810E-06  587945.6 4136775.9    20.1     3.11     3.95
2.89     YES
 L0020294         0   0.29810E-06  587937.1 4136776.4    20.0     3.11     3.95
2.89     YES
 L0020295         0   0.29810E-06  587928.6 4136776.9    19.9     3.11     3.95
2.89     YES
 L0020296         0   0.29810E-06  587920.2 4136777.4    19.8     3.11     3.95
2.89     YES
 L0020297         0   0.29810E-06  587911.7 4136777.9    19.7     3.11     3.95
2.89     YES
 L0020298         0   0.29810E-06  587903.2 4136778.5    19.6     3.11     3.95
2.89     YES
 L0020299         0   0.29810E-06  587894.7 4136779.0    19.6     3.11     3.95
2.89     YES
 L0020300         0   0.29810E-06  587886.2 4136779.5    19.6     3.11     3.95
2.89     YES
 L0020301         0   0.29810E-06  587877.7 4136780.0    19.7     3.11     3.95
2.89     YES
 L0020302         0   0.29810E-06  587869.3 4136780.5    19.7     3.11     3.95
2.89     YES
 L0020303         0   0.29810E-06  587860.8 4136781.1    19.8     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
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*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0020304	0	0.29810E-06	587852.5	4136782.9	20.0	3.11	3.95	2.89	YES
L0020305	0	0.29810E-06	587844.2	4136784.9	20.2	3.11	3.95	2.89	YES
L0020306	0	0.29810E-06	587836.0	4136787.0	20.3	3.11	3.95	2.89	YES
L0020307	0	0.29810E-06	587827.7	4136789.0	20.4	3.11	3.95	2.89	YES
L0020308	0	0.29810E-06	587819.5	4136791.1	20.5	3.11	3.95	2.89	YES
L0020309	0	0.29810E-06	587811.2	4136793.1	20.5	3.11	3.95	2.89	YES
L0020310	0	0.29810E-06	587803.0	4136795.1	20.4	3.11	3.95	2.89	YES
L0020311	0	0.29810E-06	587794.7	4136797.2	20.4	3.11	3.95	2.89	YES
L0020312	0	0.29810E-06	587786.5	4136799.2	20.3	3.11	3.95	2.89	YES
L0020313	0	0.29810E-06	587778.2	4136801.2	20.3	3.11	3.95	2.89	YES
L0020314	0	0.29810E-06	587770.0	4136803.3	20.3	3.11	3.95	2.89	YES
L0020315	0	0.29810E-06	587761.7	4136805.3	20.4	3.11	3.95	2.89	YES
L0020316	0	0.29810E-06	587753.5	4136807.4	20.4	3.11	3.95	2.89	YES
L0020317	0	0.29810E-06	587745.2	4136809.4	20.4	3.11	3.95	2.89	YES
L0020318	0	0.29810E-06	587737.0	4136811.4	20.4	3.11	3.95	2.89	YES
L0020319	0	0.29810E-06	587728.7	4136813.5	20.4	3.11	3.95	2.89	YES
L0020320	0	0.29810E-06	587720.5	4136815.5	20.4	3.11	3.95	2.89	YES
L0020321	0	0.29810E-06	587712.2	4136817.5	20.4	3.11	3.95	2.89	YES
L0020322	0	0.29810E-06	587703.9	4136819.6	20.3	3.11	3.95		

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2.89     YES
 L0020323         0   0.29810E-06  587695.7 4136821.6    20.2     3.11     3.95
2.89     YES
 L0020324         0   0.29810E-06  587687.4 4136823.7    20.3     3.11     3.95
2.89     YES
 L0020325         0   0.29810E-06  587679.2 4136825.7    20.6     3.11     3.95
2.89     YES
 L0020326         0   0.29810E-06  587670.9 4136827.7    20.9     3.11     3.95
2.89     YES
 L0020327         0   0.29810E-06  587662.7 4136829.8    21.1     3.11     3.95
2.89     YES
 L0020328         0   0.29810E-06  587654.4 4136831.8    21.0     3.11     3.95
2.89     YES
 L0020329         0   0.29810E-06  587650.6 4136826.2    21.2     3.11     3.95
2.89     YES
 L0020330         0   0.29810E-06  587648.2 4136818.0    21.2     3.11     3.95
2.89     YES
 L0020331         0   0.29810E-06  587645.8 4136809.9    21.2     3.11     3.95
2.89     YES
 L0020332         0   0.29810E-06  587643.3 4136801.7    21.2     3.11     3.95
2.89     YES
 L0020333         0   0.29810E-06  587640.9 4136793.6    21.2     3.11     3.95
2.89     YES
 L0020334         0   0.29810E-06  587638.5 4136785.4    21.3     3.11     3.95
2.89     YES
 L0020335         0   0.29810E-06  587636.1 4136777.3    21.4     3.11     3.95
2.89     YES
 L0020336         0   0.29810E-06  587633.7 4136769.1    21.5     3.11     3.95
2.89     YES
 L0020337         0   0.29810E-06  587631.3 4136761.0    21.4     3.11     3.95
2.89     YES
 L0020338         0   0.29810E-06  587628.9 4136752.8    21.3     3.11     3.95
2.89     YES
 L0020339         0   0.29810E-06  587629.5 4136746.4    21.2     3.11     3.95
2.89     YES
 L0020340         0   0.29810E-06  587637.7 4136744.3    21.0     3.11     3.95
2.89     YES
 L0020341         0   0.29810E-06  587645.9 4136742.2    20.7     3.11     3.95
2.89     YES
 L0020342         0   0.29810E-06  587654.2 4136740.1    20.5     3.11     3.95
2.89     YES
 L0020343         0   0.29810E-06  587662.4 4136738.0    20.4     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE VARY BY
L0020344	0	0.29810E-06	587670.6	4136735.9	20.4	3.11	3.95	2.89	YES
L0020345	0	0.29810E-06	587678.9	4136733.8	20.4	3.11	3.95	2.89	YES
L0020346	0	0.29810E-06	587687.1	4136731.7	20.4	3.11	3.95	2.89	YES
L0020347	0	0.29810E-06	587695.3	4136729.5	20.4	3.11	3.95	2.89	YES
L0020348	0	0.29810E-06	587703.6	4136727.4	20.5	3.11	3.95	2.89	YES
L0020349	0	0.29810E-06	587711.8	4136725.3	20.5	3.11	3.95	2.89	YES
L0020350	0	0.29810E-06	587720.0	4136723.2	20.5	3.11	3.95	2.89	YES
L0020351	0	0.29810E-06	587728.3	4136721.1	20.5	3.11	3.95	2.89	YES
L0020352	0	0.29810E-06	587736.5	4136719.0	20.5	3.11	3.95	2.89	YES
L0020353	0	0.29810E-06	587744.8	4136716.9	20.5	3.11	3.95	2.89	YES
L0020354	0	0.29810E-06	587753.0	4136714.8	20.6	3.11	3.95	2.89	YES
L0020355	0	0.29810E-06	587761.2	4136712.7	20.6	3.11	3.95	2.89	YES
L0020356	0	0.29810E-06	587769.5	4136710.6	20.6	3.11	3.95	2.89	YES
L0020357	0	0.29810E-06	587777.7	4136708.5	20.6	3.11	3.95	2.89	YES
L0020358	0	0.29810E-06	587785.9	4136706.4	20.5	3.11	3.95	2.89	YES
L0020359	0	0.29810E-06	587794.2	4136704.3	20.5	3.11	3.95	2.89	YES
L0020360	0	0.29810E-06	587802.4	4136702.2	20.4	3.11	3.95		

2.89 YES
L0020361 0 0.29810E-06 587810.6 4136700.1 20.3 3.11 3.95
2.89 YES
L0020362 0 0.29810E-06 587818.9 4136698.0 20.2 3.11 3.95
2.89 YES
L0020363 0 0.29810E-06 587827.1 4136695.9 20.1 3.11 3.95
2.89 YES
L0020364 0 0.29810E-06 587835.3 4136693.8 20.0 3.11 3.95
2.89 YES
L0020365 0 0.29810E-06 587843.6 4136691.6 20.0 3.11 3.95
2.89 YES
L0020366 0 0.29810E-06 587851.8 4136689.5 20.0 3.11 3.95
2.89 YES
L0020367 0 0.29810E-06 587860.0 4136687.4 20.1 3.11 3.95
2.89 YES
L0020368 0 0.29810E-06 587868.3 4136685.3 20.2 3.11 3.95
2.89 YES
L0020369 0 0.29810E-06 587876.5 4136683.2 20.2 3.11 3.95
2.89 YES
L0020370 0 0.29810E-06 587884.7 4136681.1 20.3 3.11 3.95
2.89 YES
L0020371 0 0.29810E-06 587893.0 4136679.0 20.3 3.11 3.95
2.89 YES
L0020372 0 0.29810E-06 587901.2 4136676.9 20.2 3.11 3.95
2.89 YES
L0020373 0 0.29810E-06 587909.5 4136674.8 20.2 3.11 3.95
2.89 YES
L0020374 0 0.29810E-06 587917.7 4136672.7 20.2 3.11 3.95
2.89 YES
L0020375 0 0.29810E-06 587925.9 4136670.6 20.2 3.11 3.95
2.89 YES
L0020376 0 0.29810E-06 587933.8 4136669.1 20.2 3.11 3.95
2.89 YES
L0020377 0 0.29810E-06 587935.9 4136677.3 20.2 3.11 3.95
2.89 YES
L0020378 0 0.29810E-06 587938.0 4136685.6 20.2 3.11 3.95
2.89 YES
L0020379 0 0.29810E-06 587940.1 4136693.8 20.2 3.11 3.95
2.89 YES
L0020380 0 0.29810E-06 587942.2 4136702.0 20.2 3.11 3.95
2.89 YES
L0020381 0 0.29810E-06 587944.4 4136710.3 20.2 3.11 3.95
2.89 YES
L0020382 0 0.29810E-06 587946.5 4136718.5 20.3 3.11 3.95
2.89 YES
L0020383 0 0.29810E-06 587948.6 4136726.7 20.3 3.11 3.95
2.89 YES

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE VARY
L0020384	0	0.29810E-06	587950.7	4136735.0	20.3	3.11	3.95	2.89	YES	
L0020385	0	0.29810E-06	587952.8	4136743.2	20.3	3.11	3.95	2.89	YES	
L0020386	0	0.29810E-06	587954.9	4136751.4	20.2	3.11	3.95	2.89	YES	
L0020387	0	0.29810E-06	587957.0	4136759.7	20.2	3.11	3.95	2.89	YES	
L0020388	0	0.29810E-06	587951.8	4136762.5	20.2	3.11	3.95	2.89	YES	
L0020389	0	0.29810E-06	587943.3	4136762.9	20.1	3.11	3.95	2.89	YES	
L0020390	0	0.29810E-06	587934.8	4136763.3	20.0	3.11	3.95	2.89	YES	
L0020391	0	0.29810E-06	587926.3	4136763.8	19.9	3.11	3.95	2.89	YES	
L0020392	0	0.29810E-06	587917.8	4136764.2	19.7	3.11	3.95	2.89	YES	
L0020393	0	0.29810E-06	587909.3	4136764.7	19.6	3.11	3.95	2.89	YES	
L0020394	0	0.29810E-06	587900.8	4136765.1	19.7	3.11	3.95	2.89	YES	
L0020395	0	0.29810E-06	587892.3	4136765.6	19.8	3.11	3.95	2.89	YES	
L0020396	0	0.29810E-06	587883.8	4136766.0	19.8	3.11	3.95	2.89	YES	
L0020397	0	0.29810E-06	587875.4	4136766.4	19.8	3.11	3.95	2.89	YES	
L0020398	0	0.29810E-06	587866.9	4136766.9	19.9	3.11	3.95			

2.89 YES							
L0020399	0	0.29810E-06	587858.4	4136767.7	20.0	3.11	3.95
2.89 YES							
L0020400	0	0.29810E-06	587850.2	4136769.7	20.1	3.11	3.95
2.89 YES							
L0020401	0	0.29810E-06	587841.9	4136771.7	20.3	3.11	3.95
2.89 YES							
L0020402	0	0.29810E-06	587833.7	4136773.8	20.4	3.11	3.95
2.89 YES							
L0020403	0	0.29810E-06	587825.4	4136775.8	20.5	3.11	3.95
2.89 YES							
L0020404	0	0.29810E-06	587817.2	4136777.8	20.7	3.11	3.95
2.89 YES							
L0020405	0	0.29810E-06	587808.9	4136779.8	20.7	3.11	3.95
2.89 YES							
L0020406	0	0.29810E-06	587800.6	4136781.8	20.6	3.11	3.95
2.89 YES							
L0020407	0	0.29810E-06	587792.4	4136783.9	20.6	3.11	3.95
2.89 YES							
L0020408	0	0.29810E-06	587784.1	4136785.9	20.6	3.11	3.95
2.89 YES							
L0020409	0	0.29810E-06	587775.9	4136787.9	20.5	3.11	3.95
2.89 YES							
L0020410	0	0.29810E-06	587767.6	4136789.9	20.5	3.11	3.95
2.89 YES							
L0020411	0	0.29810E-06	587759.4	4136792.0	20.5	3.11	3.95
2.89 YES							
L0020412	0	0.29810E-06	587751.1	4136794.0	20.5	3.11	3.95
2.89 YES							
L0020413	0	0.29810E-06	587742.9	4136796.0	20.5	3.11	3.95
2.89 YES							
L0020414	0	0.29810E-06	587734.6	4136798.0	20.5	3.11	3.95
2.89 YES							
L0020415	0	0.29810E-06	587726.3	4136800.0	20.5	3.11	3.95
2.89 YES							
L0020416	0	0.29810E-06	587718.1	4136802.1	20.5	3.11	3.95
2.89 YES							
L0020417	0	0.29810E-06	587709.8	4136804.1	20.4	3.11	3.95
2.89 YES							
L0020418	0	0.29810E-06	587701.6	4136806.1	20.3	3.11	3.95
2.89 YES							
L0020419	0	0.29810E-06	587693.3	4136808.1	20.2	3.11	3.95
2.89 YES							
L0020420	0	0.29810E-06	587685.1	4136810.2	20.4	3.11	3.95
2.89 YES							
L0020421	0	0.29810E-06	587676.8	4136812.2	20.7	3.11	3.95
2.89 YES							
L0020422	0	0.29810E-06	587669.2	4136813.1	21.0	3.11	3.95

2.89 YES
L0020423 0 0.29810E-06 587666.6 4136805.0 21.0 3.11 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0020424	0	0.29810E-06	587664.1	4136796.9	20.9	3.11	3.95	2.89	YES	
L0020425	0	0.29810E-06	587661.5	4136788.8	20.9	3.11	3.95	2.89	YES	
L0020426	0	0.29810E-06	587659.0	4136780.7	20.9	3.11	3.95	2.89	YES	
L0020427	0	0.29810E-06	587656.4	4136772.6	20.9	3.11	3.95	2.89	YES	
L0020428	0	0.29810E-06	587653.9	4136764.4	21.1	3.11	3.95	2.89	YES	
L0020429	0	0.29810E-06	587651.3	4136756.3	21.0	3.11	3.95	2.89	YES	
L0020430	0	0.29810E-06	587658.9	4136753.9	20.7	3.11	3.95	2.89	YES	
L0020431	0	0.29810E-06	587667.1	4136751.8	20.4	3.11	3.95	2.89	YES	
L0020432	0	0.29810E-06	587675.4	4136749.8	20.4	3.11	3.95	2.89	YES	
L0020433	0	0.29810E-06	587683.6	4136747.7	20.5	3.11	3.95	2.89	YES	
L0020434	0	0.29810E-06	587691.8	4136745.6	20.5	3.11	3.95	2.89	YES	
L0020435	0	0.29810E-06	587700.1	4136743.5	20.5	3.11	3.95	2.89	YES	
L0020436	0	0.29810E-06	587708.3	4136741.5	20.6	3.11	3.95			

2.89 YES							
L0020437	0	0.29810E-06	587716.6	4136739.4	20.6	3.11	3.95
2.89 YES							
L0020438	0	0.29810E-06	587724.8	4136737.3	20.7	3.11	3.95
2.89 YES							
L0020439	0	0.29810E-06	587733.1	4136735.3	20.7	3.11	3.95
2.89 YES							
L0020440	0	0.29810E-06	587741.3	4136733.2	20.8	3.11	3.95
2.89 YES							
L0020441	0	0.29810E-06	587749.6	4136731.1	20.8	3.11	3.95
2.89 YES							
L0020442	0	0.29810E-06	587757.8	4136729.0	20.9	3.11	3.95
2.89 YES							
L0020443	0	0.29810E-06	587766.0	4136727.0	20.9	3.11	3.95
2.89 YES							
L0020444	0	0.29810E-06	587774.3	4136724.9	20.9	3.11	3.95
2.89 YES							
L0020445	0	0.29810E-06	587782.5	4136722.8	20.9	3.11	3.95
2.89 YES							
L0020446	0	0.29810E-06	587790.8	4136720.8	20.9	3.11	3.95
2.89 YES							
L0020447	0	0.29810E-06	587799.0	4136718.7	20.7	3.11	3.95
2.89 YES							
L0020448	0	0.29810E-06	587807.3	4136716.6	20.6	3.11	3.95
2.89 YES							
L0020449	0	0.29810E-06	587815.5	4136714.6	20.4	3.11	3.95
2.89 YES							
L0020450	0	0.29810E-06	587823.8	4136712.5	20.3	3.11	3.95
2.89 YES							
L0020451	0	0.29810E-06	587832.0	4136710.4	20.2	3.11	3.95
2.89 YES							
L0020452	0	0.29810E-06	587840.2	4136708.3	20.2	3.11	3.95
2.89 YES							
L0020453	0	0.29810E-06	587848.5	4136706.3	20.1	3.11	3.95
2.89 YES							
L0020454	0	0.29810E-06	587856.7	4136704.2	20.1	3.11	3.95
2.89 YES							
L0020455	0	0.29810E-06	587865.0	4136702.1	20.1	3.11	3.95
2.89 YES							
L0020456	0	0.29810E-06	587873.2	4136700.1	20.2	3.11	3.95
2.89 YES							
L0020457	0	0.29810E-06	587881.5	4136698.0	20.2	3.11	3.95
2.89 YES							
L0020458	0	0.29810E-06	587889.7	4136695.9	20.3	3.11	3.95
2.89 YES							
L0020459	0	0.29810E-06	587897.9	4136693.9	20.3	3.11	3.95
2.89 YES							
L0020460	0	0.29810E-06	587906.2	4136691.8	20.2	3.11	3.95

2.89 YES
L0020461 0 0.29810E-06 587914.4 4136689.7 20.2 3.11 3.95
2.89 YES
L0020462 0 0.29810E-06 587922.7 4136687.6 20.2 3.11 3.95
2.89 YES
L0020463 0 0.29810E-06 587926.9 4136692.4 20.2 3.11 3.95
2.89 YES
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0020464	0	0.29810E-06	587929.0	4136700.6	20.2	3.11	3.95	2.89	YES	
L0020465	0	0.29810E-06	587931.2	4136708.8	20.2	3.11	3.95	2.89	YES	
L0020466	0	0.29810E-06	587933.4	4136717.1	20.2	3.11	3.95	2.89	YES	
L0020467	0	0.29810E-06	587935.5	4136725.3	20.2	3.11	3.95	2.89	YES	
L0020468	0	0.29810E-06	587937.7	4136733.5	20.3	3.11	3.95	2.89	YES	
L0020469	0	0.29810E-06	587939.8	4136741.7	20.3	3.11	3.95	2.89	YES	
L0020470	0	0.29810E-06	587941.4	4136749.5	20.2	3.11	3.95	2.89	YES	
L0020471	0	0.29810E-06	587932.9	4136750.1	20.1	3.11	3.95	2.89	YES	
L0020472	0	0.29810E-06	587924.5	4136750.7	20.0	3.11	3.95	2.89	YES	
L0020473	0	0.29810E-06	587916.0	4136751.2	19.8	3.11	3.95	2.89	YES	
L0020474	0	0.29810E-06	587907.5	4136751.8	19.8	3.11	3.95			

2.89	YES						
L0020475	0	0.29810E-06	587899.0	4136752.4	19.8	3.11	3.95
2.89	YES						
L0020476	0	0.29810E-06	587890.5	4136752.9	19.9	3.11	3.95
2.89	YES						
L0020477	0	0.29810E-06	587882.1	4136753.5	19.9	3.11	3.95
2.89	YES						
L0020478	0	0.29810E-06	587873.6	4136754.0	19.9	3.11	3.95
2.89	YES						
L0020479	0	0.29810E-06	587865.1	4136754.6	19.9	3.11	3.95
2.89	YES						
L0020480	0	0.29810E-06	587856.6	4136755.2	20.1	3.11	3.95
2.89	YES						
L0020481	0	0.29810E-06	587848.4	4136757.1	20.2	3.11	3.95
2.89	YES						
L0020482	0	0.29810E-06	587840.1	4136759.2	20.4	3.11	3.95
2.89	YES						
L0020483	0	0.29810E-06	587831.9	4136761.2	20.5	3.11	3.95
2.89	YES						
L0020484	0	0.29810E-06	587823.6	4136763.3	20.7	3.11	3.95
2.89	YES						
L0020485	0	0.29810E-06	587815.4	4136765.4	20.8	3.11	3.95
2.89	YES						
L0020486	0	0.29810E-06	587807.1	4136767.4	20.8	3.11	3.95
2.89	YES						
L0020487	0	0.29810E-06	587798.9	4136769.5	20.8	3.11	3.95
2.89	YES						
L0020488	0	0.29810E-06	587790.6	4136771.6	20.8	3.11	3.95
2.89	YES						
L0020489	0	0.29810E-06	587782.4	4136773.7	20.7	3.11	3.95
2.89	YES						
L0020490	0	0.29810E-06	587774.2	4136775.7	20.7	3.11	3.95
2.89	YES						
L0020491	0	0.29810E-06	587765.9	4136777.8	20.6	3.11	3.95
2.89	YES						
L0020492	0	0.29810E-06	587757.7	4136779.9	20.6	3.11	3.95
2.89	YES						
L0020493	0	0.29810E-06	587749.4	4136781.9	20.6	3.11	3.95
2.89	YES						
L0020494	0	0.29810E-06	587741.2	4136784.0	20.6	3.11	3.95
2.89	YES						
L0020495	0	0.29810E-06	587732.9	4136786.1	20.6	3.11	3.95
2.89	YES						
L0020496	0	0.29810E-06	587724.7	4136788.1	20.5	3.11	3.95
2.89	YES						
L0020497	0	0.29810E-06	587716.4	4136790.2	20.5	3.11	3.95
2.89	YES						
L0020498	0	0.29810E-06	587708.2	4136792.3	20.4	3.11	3.95

2.89 YES
L0020499 0 0.29810E-06 587700.0 4136794.3 20.4 3.11 3.95
2.89 YES
L0020500 0 0.29810E-06 587691.7 4136796.4 20.2 3.11 3.95
2.89 YES
L0020501 0 0.29810E-06 587683.5 4136798.5 20.5 3.11 3.95
2.89 YES
L0020502 0 0.29810E-06 587678.1 4136795.2 20.6 3.11 3.95
2.89 YES
L0020503 0 0.29810E-06 587675.2 4136787.2 20.6 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020504	0	0.29810E-06	587672.3	4136779.2	20.6	3.11	3.95	2.89	YES	
L0020505	0	0.29810E-06	587669.5	4136771.2	20.5	3.11	3.95	2.89	YES	
L0020506	0	0.29810E-06	587670.4	4136765.2	20.4	3.11	3.95	2.89	YES	
L0020507	0	0.29810E-06	587678.6	4136763.2	20.5	3.11	3.95	2.89	YES	
L0020508	0	0.29810E-06	587686.9	4136761.1	20.6	3.11	3.95	2.89	YES	
L0020509	0	0.29810E-06	587695.1	4136759.1	20.7	3.11	3.95	2.89	YES	
L0020510	0	0.29810E-06	587703.4	4136757.0	20.6	3.11	3.95	2.89	YES	
L0020511	0	0.29810E-06	587711.6	4136755.0	20.6	3.11	3.95	2.89	YES	
L0020512	0	0.29810E-06	587719.9	4136752.9	20.7	3.11	3.95	2.89	YES	

2.89	YES						
L0020513	0	0.29810E-06	587728.1	4136750.8	20.7	3.11	3.95
2.89	YES						
L0020514	0	0.29810E-06	587736.4	4136748.8	20.8	3.11	3.95
2.89	YES						
L0020515	0	0.29810E-06	587744.6	4136746.7	20.8	3.11	3.95
2.89	YES						
L0020516	0	0.29810E-06	587752.9	4136744.7	20.9	3.11	3.95
2.89	YES						
L0020517	0	0.29810E-06	587761.1	4136742.6	20.9	3.11	3.95
2.89	YES						
L0020518	0	0.29810E-06	587769.4	4136740.6	21.0	3.11	3.95
2.89	YES						
L0020519	0	0.29810E-06	587777.6	4136738.5	21.1	3.11	3.95
2.89	YES						
L0020520	0	0.29810E-06	587785.9	4136736.5	21.1	3.11	3.95
2.89	YES						
L0020521	0	0.29810E-06	587794.1	4136734.4	21.1	3.11	3.95
2.89	YES						
L0020522	0	0.29810E-06	587802.4	4136732.3	20.9	3.11	3.95
2.89	YES						
L0020523	0	0.29810E-06	587810.6	4136730.3	20.8	3.11	3.95
2.89	YES						
L0020524	0	0.29810E-06	587818.9	4136728.2	20.6	3.11	3.95
2.89	YES						
L0020525	0	0.29810E-06	587827.1	4136726.2	20.5	3.11	3.95
2.89	YES						
L0020526	0	0.29810E-06	587835.3	4136724.1	20.4	3.11	3.95
2.89	YES						
L0020527	0	0.29810E-06	587843.6	4136722.1	20.3	3.11	3.95
2.89	YES						
L0020528	0	0.29810E-06	587851.8	4136720.0	20.2	3.11	3.95
2.89	YES						
L0020529	0	0.29810E-06	587860.1	4136717.9	20.1	3.11	3.95
2.89	YES						
L0020530	0	0.29810E-06	587868.3	4136715.9	20.1	3.11	3.95
2.89	YES						
L0020531	0	0.29810E-06	587876.6	4136713.8	20.1	3.11	3.95
2.89	YES						
L0020532	0	0.29810E-06	587884.8	4136711.8	20.2	3.11	3.95
2.89	YES						
L0020533	0	0.29810E-06	587893.1	4136709.7	20.2	3.11	3.95
2.89	YES						
L0020534	0	0.29810E-06	587901.3	4136707.7	20.2	3.11	3.95
2.89	YES						
L0020535	0	0.29810E-06	587909.6	4136705.6	20.2	3.11	3.95
2.89	YES						
L0020536	0	0.29810E-06	587917.8	4136703.5	20.2	3.11	3.95

2.89 YES
L0020537 0 0.29810E-06 587920.6 4136710.9 20.2 3.11 3.95
2.89 YES
L0020538 0 0.29810E-06 587922.9 4136719.1 20.2 3.11 3.95
2.89 YES
L0020539 0 0.29810E-06 587925.3 4136727.2 20.1 3.11 3.95
2.89 YES
L0020540 0 0.29810E-06 587927.6 4136735.4 20.2 3.11 3.95
2.89 YES
L0020541 0 0.29810E-06 587926.9 4136741.3 20.1 3.11 3.95
2.89 YES
L0020542 0 0.29810E-06 587918.4 4136741.4 19.9 3.11 3.95
2.89 YES
L0020543 0 0.29810E-06 587909.9 4136741.5 19.9 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0020544	0	0.29810E-06	587901.4	4136741.5	19.9	3.11	3.95	2.89	YES	
L0020545	0	0.29810E-06	587892.9	4136741.6	20.0	3.11	3.95	2.89	YES	
L0020546	0	0.29810E-06	587884.4	4136741.7	20.0	3.11	3.95	2.89	YES	
L0020547	0	0.29810E-06	587875.9	4136741.7	19.9	3.11	3.95	2.89	YES	
L0020548	0	0.29810E-06	587867.4	4136741.8	19.9	3.11	3.95	2.89	YES	
L0020549	0	0.29810E-06	587858.9	4136741.9	20.1	3.11	3.95	2.89	YES	
L0020550	0	0.29810E-06	587850.4	4136742.1	20.2	3.11	3.95			

2.89 YES							
L0020551	0	0.29810E-06	587842.2	4136744.3	20.4	3.11	3.95
2.89 YES							
L0020552	0	0.29810E-06	587834.0	4136746.6	20.6	3.11	3.95
2.89 YES							
L0020553	0	0.29810E-06	587825.8	4136748.8	20.7	3.11	3.95
2.89 YES							
L0020554	0	0.29810E-06	587817.6	4136751.1	20.8	3.11	3.95
2.89 YES							
L0020555	0	0.29810E-06	587809.4	4136753.3	20.9	3.11	3.95
2.89 YES							
L0020556	0	0.29810E-06	587801.2	4136755.6	20.9	3.11	3.95
2.89 YES							
L0020557	0	0.29810E-06	587793.0	4136757.8	20.9	3.11	3.95
2.89 YES							
L0020558	0	0.29810E-06	587784.8	4136760.1	20.9	3.11	3.95
2.89 YES							
L0020559	0	0.29810E-06	587776.6	4136762.3	20.9	3.11	3.95
2.89 YES							
L0020560	0	0.29810E-06	587768.4	4136764.6	20.8	3.11	3.95
2.89 YES							
L0020561	0	0.29810E-06	587760.2	4136766.8	20.8	3.11	3.95
2.89 YES							
L0020562	0	0.29810E-06	587752.0	4136769.1	20.8	3.11	3.95
2.89 YES							
L0020563	0	0.29810E-06	587743.8	4136771.3	20.8	3.11	3.95
2.89 YES							
L0020564	0	0.29810E-06	587735.6	4136773.6	20.7	3.11	3.95
2.89 YES							
L0020565	0	0.29810E-06	587727.4	4136775.8	20.7	3.11	3.95
2.89 YES							
L0020566	0	0.29810E-06	587719.2	4136778.1	20.6	3.11	3.95
2.89 YES							
L0020567	0	0.29810E-06	587711.0	4136780.3	20.6	3.11	3.95
2.89 YES							
L0020568	0	0.29810E-06	587702.8	4136782.6	20.5	3.11	3.95
2.89 YES							
L0020569	0	0.29810E-06	587694.6	4136784.8	20.4	3.11	3.95
2.89 YES							
L0020570	0	0.29810E-06	587688.6	4136783.0	20.5	3.11	3.95
2.89 YES							
L0020571	0	0.29810E-06	587686.4	4136775.3	20.5	3.11	3.95
2.89 YES							
L0020572	0	0.29810E-06	587694.6	4136773.2	20.6	3.11	3.95
2.89 YES							
L0020573	0	0.29810E-06	587702.8	4136771.0	20.6	3.11	3.95
2.89 YES							
L0020574	0	0.29810E-06	587711.1	4136768.9	20.6	3.11	3.95

2.89 YES
L0020575 0 0.29810E-06 587719.3 4136766.8 20.7 3.11 3.95
2.89 YES
L0020576 0 0.29810E-06 587727.5 4136764.6 20.8 3.11 3.95
2.89 YES
L0020577 0 0.29810E-06 587735.7 4136762.5 20.8 3.11 3.95
2.89 YES
L0020578 0 0.29810E-06 587744.0 4136760.4 20.9 3.11 3.95
2.89 YES
L0020579 0 0.29810E-06 587752.2 4136758.2 20.9 3.11 3.95
2.89 YES
L0020580 0 0.29810E-06 587760.4 4136756.1 20.9 3.11 3.95
2.89 YES
L0020581 0 0.29810E-06 587768.7 4136754.0 20.9 3.11 3.95
2.89 YES
L0020582 0 0.29810E-06 587776.9 4136751.9 20.9 3.11 3.95
2.89 YES
L0020583 0 0.29810E-06 587785.1 4136749.7 21.0 3.11 3.95
2.89 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0020584	0	0.29810E-06	587793.3	4136747.6	21.0	3.11	3.95	2.89	YES	
L0020585	0	0.29810E-06	587801.6	4136745.5	20.9	3.11	3.95	2.89	YES	
L0020586	0	0.29810E-06	587809.8	4136743.3	20.9	3.11	3.95	2.89	YES	
L0020587	0	0.29810E-06	587818.0	4136741.2	20.8	3.11	3.95	2.89	YES	
L0020588	0	0.29810E-06	587826.3	4136739.1	20.7	3.11	3.95			

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2.89     YES
 L0020589         0   0.29810E-06  587834.5 4136736.9    20.6     3.11     3.95
2.89     YES
 L0020590         0   0.29810E-06  587842.7 4136734.8    20.4     3.11     3.95
2.89     YES
 L0020591         0   0.29810E-06  587850.9 4136732.7    20.2     3.11     3.95
2.89     YES
 L0020592         0   0.29810E-06  587859.2 4136730.5    20.1     3.11     3.95
2.89     YES
 L0020593         0   0.29810E-06  587867.4 4136728.4    20.0     3.11     3.95
2.89     YES
 L0020594         0   0.29810E-06  587875.6 4136726.3    20.1     3.11     3.95
2.89     YES
 L0020595         0   0.29810E-06  587883.8 4136724.1    20.1     3.11     3.95
2.89     YES
 L0020596         0   0.29810E-06  587892.1 4136722.0    20.1     3.11     3.95
2.89     YES
 L0020597         0   0.29810E-06  587900.3 4136719.9    20.1     3.11     3.95
2.89     YES
 L0020598         0   0.29810E-06  587908.5 4136717.7    20.1     3.11     3.95
2.89     YES
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        13:36:48

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                              *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                                 SOURCE IDs
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  ALL        L0019664    , L0019665    , L0019666    , L0019667    , L0019668    ,
L0019669    , L0019670    , L0019671    ,

             L0019672    , L0019673    , L0019674    , L0019675    , L0019676    ,
L0019677    , L0019678    , L0019679    ,

             L0019680    , L0019681    , L0019682    , L0019683    , L0019684    ,
L0019685    , L0019686    , L0019687    ,

             L0019688    , L0019689    , L0019690    , L0019691    , L0019692    ,
L0019693    , L0019694    , L0019695    ,
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             L0019696    , L0019697    , L0019698    , L0019699    , L0019700    ,
L0019701    , L0019702    , L0019703    ,

             L0019704    , L0019705    , L0019706    , L0019707    , L0019708    ,
L0019709    , L0019710    , L0019711    ,

             L0019712    , L0019713    , L0019714    , L0019715    , L0019716    ,
L0019717    , L0019718    , L0019719    ,

             L0019720    , L0019721    , L0019722    , L0019723    , L0019724    ,
L0019725    , L0019726    , L0019727    ,

             L0019728    , L0019729    , L0019730    , L0019731    , L0019732    ,
L0019733    , L0019734    , L0019735    ,

             L0019736    , L0019737    , L0019738    , L0019739    , L0019740    ,
L0019741    , L0019742    , L0019743    ,

             L0019744    , L0019745    , L0019746    , L0019747    , L0019748    ,
L0019749    , L0019750    , L0019751    ,

             L0019752    , L0019753    , L0019754    , L0019755    , L0019756    ,
L0019757    , L0019758    , L0019759    ,

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                          *** SOURCE IDs DEFINING SOURCE GROUPS ***

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINING SOURCE GROUPS ***

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*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w ***
*** AERMET - VERSION 14134 *** ***
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs

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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                          SOURCE IDs
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 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                              SOURCE IDs
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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

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*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
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	L0020088 , L0020089 , L0020090 , L0020091 , L0020092 , L0020093 , L0020094 , L0020095 ,	
	L0020096 , L0020097 , L0020098 , L0020099 , L0020100 ,	

L0020101 , L0020102 , L0020103 ,

L0020104 , L0020105 , L0020106 , L0020107 , L0020108 ,
L0020109 , L0020110 , L0020111 ,

L0020112 , L0020113 , L0020114 , L0020115 , L0020116 ,
L0020117 , L0020118 , L0020119 ,

L0020120 , L0020121 , L0020122 , L0020123 , L0020124 ,
L0020125 , L0020126 , L0020127 ,

L0020128 , L0020129 , L0020130 , L0020131 , L0020132 ,
L0020133 , L0020134 , L0020135 ,

L0020136 , L0020137 , L0020138 , L0020139 , L0020140 ,
L0020141 , L0020142 , L0020143 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs

L0020144 , L0020145 , L0020146 , L0020147 , L0020148 ,
L0020149 , L0020150 , L0020151 ,

L0020152 , L0020153 , L0020154 , L0020155 , L0020156 ,
L0020157 , L0020158 , L0020159 ,

L0020160 , L0020161 , L0020162 , L0020163 , L0020164 ,
L0020165 , L0020166 , L0020167 ,

L0020168 , L0020169 , L0020170 , L0020171 , L0020172 ,
L0020173 , L0020174 , L0020175 ,

L0020176 , L0020177 , L0020178 , L0020179 , L0020180 ,
L0020181 , L0020182 , L0020183 ,

L0020184 , L0020185 , L0020186 , L0020187 , L0020188 ,

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L0020189    , L0020190    , L0020191    ,

             L0020192    , L0020193    , L0020194    , L0020195    , L0020196    ,
L0020197    , L0020198    , L0020199    ,

             L0020200    , L0020201    , L0020202    , L0020203    , L0020204    ,
L0020205    , L0020206    , L0020207    ,

             L0020208    , L0020209    , L0020210    , L0020211    , L0020212    ,
L0020213    , L0020214    , L0020215    ,

             L0020216    , L0020217    , L0020218    , L0020219    , L0020220    ,
L0020221    , L0020222    , L0020223    ,

             L0020224    , L0020225    , L0020226    , L0020227    , L0020228    ,
L0020229    , L0020230    , L0020231    ,

             L0020232    , L0020233    , L0020234    , L0020235    , L0020236    ,
L0020237    , L0020238    , L0020239    ,

             L0020240    , L0020241    , L0020242    , L0020243    , L0020244    ,
L0020245    , L0020246    , L0020247    ,

             L0020248    , L0020249    , L0020250    , L0020251    , L0020252    ,
L0020253    , L0020254    , L0020255    ,

             L0020256    , L0020257    , L0020258    , L0020259    , L0020260    ,
L0020261    , L0020262    , L0020263    ,

             L0020264    , L0020265    , L0020266    , L0020267    , L0020268    ,
L0020269    , L0020270    , L0020271    ,

             L0020272    , L0020273    , L0020274    , L0020275    , L0020276    ,
L0020277    , L0020278    , L0020279    ,

             L0020280    , L0020281    , L0020282    , L0020283    , L0020284    ,
L0020285    , L0020286    , L0020287    ,

             L0020288    , L0020289    , L0020290    , L0020291    , L0020292    ,
L0020293    , L0020294    , L0020295    ,

             L0020296    , L0020297    , L0020298    , L0020299    , L0020300    ,
L0020301    , L0020302    , L0020303    ,
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        13:36:48
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
		L0020304 , L0020305 , L0020306 , L0020307 , L0020308 , L0020309 , L0020310 , L0020311 ,
		L0020312 , L0020313 , L0020314 , L0020315 , L0020316 , L0020317 , L0020318 , L0020319 ,
		L0020320 , L0020321 , L0020322 , L0020323 , L0020324 , L0020325 , L0020326 , L0020327 ,
		L0020328 , L0020329 , L0020330 , L0020331 , L0020332 , L0020333 , L0020334 , L0020335 ,
		L0020336 , L0020337 , L0020338 , L0020339 , L0020340 , L0020341 , L0020342 , L0020343 ,
		L0020344 , L0020345 , L0020346 , L0020347 , L0020348 , L0020349 , L0020350 , L0020351 ,
		L0020352 , L0020353 , L0020354 , L0020355 , L0020356 , L0020357 , L0020358 , L0020359 ,
		L0020360 , L0020361 , L0020362 , L0020363 , L0020364 , L0020365 , L0020366 , L0020367 ,
		L0020368 , L0020369 , L0020370 , L0020371 , L0020372 , L0020373 , L0020374 , L0020375 ,
		L0020376 , L0020377 , L0020378 , L0020379 , L0020380 , L0020381 , L0020382 , L0020383 ,
		L0020384 , L0020385 , L0020386 , L0020387 , L0020388 , L0020389 , L0020390 , L0020391 ,
		L0020392 , L0020393 , L0020394 , L0020395 , L0020396 , L0020397 , L0020398 , L0020399 ,
		L0020400 , L0020401 , L0020402 , L0020403 , L0020404 ,

L0020405 , L0020406 , L0020407 ,

L0020408 , L0020409 , L0020410 , L0020411 , L0020412 ,
L0020413 , L0020414 , L0020415 ,

L0020416 , L0020417 , L0020418 , L0020419 , L0020420 ,
L0020421 , L0020422 , L0020423 ,

L0020424 , L0020425 , L0020426 , L0020427 , L0020428 ,
L0020429 , L0020430 , L0020431 ,

L0020432 , L0020433 , L0020434 , L0020435 , L0020436 ,
L0020437 , L0020438 , L0020439 ,

L0020440 , L0020441 , L0020442 , L0020443 , L0020444 ,
L0020445 , L0020446 , L0020447 ,

L0020448 , L0020449 , L0020450 , L0020451 , L0020452 ,
L0020453 , L0020454 , L0020455 ,

L0020456 , L0020457 , L0020458 , L0020459 , L0020460 ,
L0020461 , L0020462 , L0020463 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs

L0020464 , L0020465 , L0020466 , L0020467 , L0020468 ,
L0020469 , L0020470 , L0020471 ,

L0020472 , L0020473 , L0020474 , L0020475 , L0020476 ,
L0020477 , L0020478 , L0020479 ,

L0020480 , L0020481 , L0020482 , L0020483 , L0020484 ,
L0020485 , L0020486 , L0020487 ,

L0020488 , L0020489 , L0020490 , L0020491 , L0020492 ,

L0020493   , L0020494   , L0020495   ,

             L0020496   , L0020497   , L0020498   , L0020499   , L0020500   ,
L0020501   , L0020502   , L0020503   ,

             L0020504   , L0020505   , L0020506   , L0020507   , L0020508   ,
L0020509   , L0020510   , L0020511   ,

             L0020512   , L0020513   , L0020514   , L0020515   , L0020516   ,
L0020517   , L0020518   , L0020519   ,

             L0020520   , L0020521   , L0020522   , L0020523   , L0020524   ,
L0020525   , L0020526   , L0020527   ,

             L0020528   , L0020529   , L0020530   , L0020531   , L0020532   ,
L0020533   , L0020534   , L0020535   ,

             L0020536   , L0020537   , L0020538   , L0020539   , L0020540   ,
L0020541   , L0020542   , L0020543   ,

             L0020544   , L0020545   , L0020546   , L0020547   , L0020548   ,
L0020549   , L0020550   , L0020551   ,

             L0020552   , L0020553   , L0020554   , L0020555   , L0020556   ,
L0020557   , L0020558   , L0020559   ,

             L0020560   , L0020561   , L0020562   , L0020563   , L0020564   ,
L0020565   , L0020566   , L0020567   ,

             L0020568   , L0020569   , L0020570   , L0020571   , L0020572   ,
L0020573   , L0020574   , L0020575   ,

             L0020576   , L0020577   , L0020578   , L0020579   , L0020580   ,
L0020581   , L0020582   , L0020583   ,

             L0020584   , L0020585   , L0020586   , L0020587   , L0020588   ,
L0020589   , L0020590   , L0020591   ,

             L0020592   , L0020593   , L0020594   , L0020595   , L0020596   ,
L0020597   , L0020598   ,
♠ *** AERMOD - VERSION 18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***   01/14/20
 *** AERMET - VERSION 14134 ***   ***
                        ***   13:36:48

                                  PAGE 38
 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(587572.7, 4136390.2, 23.7, 23.7, 0.0); (587634.5, 4136390.2, 23.5, 23.5, 0.0);
(587696.2, 4136390.2, 23.1, 23.1, 0.0); (587758.0, 4136390.2, 22.8, 22.8, 0.0);
(587819.7, 4136390.2, 23.0, 23.0, 0.0); (587881.4, 4136390.2, 22.8, 22.8, 0.0);
(587943.2, 4136390.2, 22.4, 22.4, 0.0); (588066.7, 4136390.2, 21.8, 21.8, 0.0);
(588128.4, 4136390.2, 21.8, 21.8, 0.0); (588190.1, 4136390.2, 21.3, 21.3, 0.0);
(587511.0, 4136443.3, 23.8, 23.8, 0.0); (587572.7, 4136443.3, 23.3, 23.3, 0.0);
(587634.5, 4136443.3, 22.9, 22.9, 0.0); (587696.2, 4136443.3, 22.6, 22.6, 0.0);
(587758.0, 4136443.3, 22.2, 22.2, 0.0); (587819.7, 4136443.3, 21.9, 21.9, 0.0);
(587881.4, 4136443.3, 21.8, 21.8, 0.0); (587943.2, 4136443.3, 21.9, 21.9, 0.0);
(588004.9, 4136443.3, 21.6, 21.6, 0.0); (588066.7, 4136443.3, 21.6, 21.6, 0.0);
(588128.4, 4136443.3, 22.0, 22.0, 0.0); (588190.1, 4136443.3, 21.6, 21.6, 0.0);
(588251.9, 4136443.3, 21.7, 21.7, 0.0); (587387.5, 4136496.4, 23.7, 23.7, 0.0);
(587449.3, 4136496.4, 23.6, 23.6, 0.0); (587511.0, 4136496.4, 23.8, 23.8, 0.0);
(587572.7, 4136496.4, 22.8, 22.8, 0.0); (587634.5, 4136496.4, 22.4, 22.4, 0.0);
(587696.2, 4136496.4, 22.3, 22.3, 0.0); (587758.0, 4136496.4, 22.2, 22.2, 0.0);
(587819.7, 4136496.4, 21.7, 21.7, 0.0); (587881.4, 4136496.4, 21.5, 21.5, 0.0);
(587943.2, 4136496.4, 21.5, 21.5, 0.0); (588004.9, 4136496.4, 21.1, 21.1, 0.0);
(588066.7, 4136496.4, 20.9, 20.9, 0.0); (588128.4, 4136496.4, 21.4, 21.4, 0.0);
(588190.1, 4136496.4, 21.5, 21.5, 0.0); (588251.9, 4136496.4, 21.1, 21.1, 0.0);
(587387.5, 4136549.5, 23.7, 23.7, 0.0); (587449.3, 4136549.5, 23.3, 23.3, 0.0);
(587511.0, 4136549.5, 23.2, 23.2, 0.0); (587572.7, 4136549.5, 22.8, 22.8, 0.0);
(587634.5, 4136549.5, 22.3, 22.3, 0.0); (587696.2, 4136549.5, 22.4, 22.4, 0.0);

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     ( 587758.0, 4136549.5,      22.0,      22.0,       0.0);         ( 587819.7,
4136549.5,      21.7,      21.7,       0.0);
     ( 587881.4, 4136549.5,      21.3,      21.3,       0.0);         ( 587943.2,
4136549.5,      21.4,      21.4,       0.0);
     ( 588004.9, 4136549.5,      21.3,      21.3,       0.0);         ( 588066.7,
4136549.5,      21.3,      21.3,       0.0);
     ( 588128.4, 4136549.5,      21.2,      21.2,       0.0);         ( 588251.9,
4136549.5,      20.8,      20.8,       0.0);
     ( 588313.6, 4136549.5,      20.5,      20.5,       0.0);         ( 587387.5,
4136602.6,      23.4,      23.4,       0.0);
     ( 587449.3, 4136602.6,      22.9,      22.9,       0.0);         ( 587511.0,
4136602.6,      22.8,      22.8,       0.0);
     ( 587572.7, 4136602.6,      22.5,      22.5,       0.0);         ( 587634.5,
4136602.6,      21.9,      21.9,       0.0);
     ( 587696.2, 4136602.6,      21.9,      21.9,       0.0);         ( 587758.0,
4136602.6,      21.7,      21.7,       0.0);
     ( 587819.7, 4136602.6,      21.2,      21.2,       0.0);         ( 587881.4,
4136602.6,      21.3,      21.3,       0.0);
     ( 588066.7, 4136602.6,      20.5,      20.5,       0.0);         ( 588128.4,
4136602.6,      20.6,      20.6,       0.0);
     ( 588190.1, 4136602.6,      20.6,      20.6,       0.0);         ( 588251.9,
4136602.6,      20.6,      20.6,       0.0);
     ( 588313.6, 4136602.6,      20.0,      20.0,       0.0);         ( 588375.4,
4136602.6,      20.0,      20.0,       0.0);
     ( 587264.0, 4136655.7,      23.8,      23.8,       0.0);         ( 587387.5,
4136655.7,      23.4,      23.4,       0.0);
     ( 587449.3, 4136655.7,      22.5,      22.5,       0.0);         ( 587511.0,
4136655.7,      22.2,      22.2,       0.0);
     ( 587572.7, 4136655.7,      22.4,      22.4,       0.0);         ( 587634.5,
4136655.7,      21.9,      21.9,       0.0);
     ( 587696.2, 4136655.7,      21.9,      21.9,       0.0);         ( 588004.9,
4136655.7,      20.1,      20.1,       0.0);
     ( 588066.7, 4136655.7,      20.1,      20.1,       0.0);         ( 588128.4,
4136655.7,      20.4,      20.4,       0.0);
     ( 588190.1, 4136655.7,      20.3,      20.3,       0.0);         ( 588251.9,
4136655.7,      19.8,      19.8,       0.0);
     ( 588313.6, 4136655.7,      19.9,      19.9,       0.0);         ( 588375.4,
4136655.7,      19.4,      19.4,       0.0);
     ( 587264.0, 4136708.8,      23.9,      23.9,       0.0);         ( 587387.5,
4136708.8,      23.1,      23.1,       0.0);
     ( 587449.3, 4136708.8,      22.3,      22.3,       0.0);         ( 588004.9,
4136708.8,      20.2,      20.2,       0.0);
     ( 588066.7, 4136708.8,      20.2,      20.2,       0.0);         ( 588128.4,
4136708.8,      20.0,      20.0,       0.0);
     ( 588190.1, 4136708.8,      19.8,      19.8,       0.0);         ( 588251.9,
4136708.8,      19.6,      19.6,       0.0);
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
     ( 588313.6, 4136708.8,      19.7,      19.7,      0.0);         ( 588375.4,
4136708.8,      19.4,      19.4,       0.0);
     ( 587387.5, 4136761.9,      22.2,      22.2,      0.0);         ( 587449.3,
4136761.9,      21.8,      21.8,       0.0);
     ( 587511.0, 4136761.9,      21.4,      21.4,      0.0);         ( 587572.7,
4136761.9,      21.6,      21.6,       0.0);
     ( 588066.7, 4136761.9,      20.0,      20.0,      0.0);         ( 588128.4,
4136761.9,      19.6,      19.6,       0.0);
     ( 588190.1, 4136761.9,      19.6,      19.6,      0.0);         ( 588251.9,
4136761.9,      19.6,      19.6,       0.0);
     ( 588313.6, 4136761.9,      19.7,      19.7,      0.0);         ( 588375.4,
4136761.9,      18.9,      18.9,       0.0);
     ( 587325.8, 4136815.0,      22.2,      22.2,      0.0);         ( 587387.5,
4136815.0,      21.5,      21.5,       0.0);
     ( 587449.3, 4136815.0,      21.4,      21.4,      0.0);         ( 587511.0,
4136815.0,      21.2,      21.2,       0.0);
     ( 587572.7, 4136815.0,      21.0,      21.0,      0.0);         ( 587325.8,
4136868.2,      22.3,      22.3,       0.0);
     ( 587387.5, 4136868.2,      21.6,      21.6,      0.0);         ( 587449.3,
4136868.2,      21.5,      21.5,       0.0);
     ( 587511.0, 4136868.2,      21.1,      21.1,      0.0);         ( 587572.7,
4136868.2,      20.7,      20.7,       0.0);
     ( 587758.0, 4136868.2,      19.7,      19.7,      0.0);         ( 587819.7,
4136868.2,      19.8,      19.8,       0.0);
     ( 587881.4, 4136868.2,      19.3,      19.3,      0.0);         ( 588190.1,
4136868.2,      18.9,      18.9,       0.0);
     ( 588251.9, 4136868.2,      18.7,      18.7,      0.0);         ( 588313.6,
4136868.2,      18.9,      18.9,       0.0);
     ( 588375.4, 4136868.2,      18.5,      18.5,      0.0);         ( 588437.1,
4136868.2,      18.6,      18.6,       0.0);
     ( 587325.8, 4136921.3,      21.7,      21.7,      0.0);         ( 587387.5,
4136921.3,      21.2,      21.2,       0.0);
     ( 587449.3, 4136921.3,      20.6,      20.6,      0.0);         ( 587511.0,
4136921.3,      20.4,      20.4,       0.0);
     ( 587572.7, 4136921.3,      20.5,      20.5,      0.0);         ( 587634.5,
4136921.3,      20.2,      20.2,       0.0);
     ( 587696.2, 4136921.3,      19.8,      19.8,      0.0);         ( 587758.0,
4136921.3,      19.3,      19.3,       0.0);
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     ( 587819.7, 4136921.3,      19.3,      19.3,       0.0);         ( 587881.4,
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     ( 588313.6, 4136921.3,      18.8,      18.8,       0.0);         ( 588375.4,
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     ( 588437.1, 4136921.3,      18.5,      18.5,       0.0);         ( 587387.5,
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     ( 587572.7, 4136974.4,      20.2,      20.2,       0.0);         ( 587634.5,
4136974.4,      19.7,      19.7,       0.0);
     ( 587696.2, 4136974.4,      19.3,      19.3,       0.0);         ( 587758.0,
4136974.4,      18.9,      18.9,       0.0);
     ( 587819.7, 4136974.4,      19.3,      19.3,       0.0);         ( 587881.4,
4136974.4,      18.9,      18.9,       0.0);
     ( 588190.1, 4136974.4,      18.4,      18.4,       0.0);         ( 588251.9,
4136974.4,      18.5,      18.5,       0.0);
     ( 588313.6, 4136974.4,      18.5,      18.5,       0.0);         ( 588375.4,
4136974.4,      17.5,      17.5,       0.0);
     ( 588437.1, 4136974.4,      17.8,      17.8,       0.0);         ( 587387.5,
4137027.5,      20.6,      20.6,       0.0);
     ( 587449.3, 4137027.5,      20.0,      20.0,       0.0);         ( 587511.0,
4137027.5,      20.0,      20.0,       0.0);
     ( 587572.7, 4137027.5,      20.0,      20.0,       0.0);         ( 587634.5,
4137027.5,      19.3,      19.3,       0.0);
     ( 587696.2, 4137027.5,      19.1,      19.1,       0.0);         ( 587758.0,
4137027.5,      18.9,      18.9,       0.0);
     ( 587819.7, 4137027.5,      18.9,      18.9,       0.0);         ( 587881.4,
4137027.5,      18.6,      18.6,       0.0);
     ( 588190.1, 4137027.5,      18.1,      18.1,       0.0);         ( 588251.9,
4137027.5,      18.2,      18.2,       0.0);
     ( 588313.6, 4137027.5,      19.1,      19.1,       0.0);         ( 588375.4,
4137027.5,      17.7,      17.7,       0.0);
     ( 588437.1, 4137027.5,      18.4,      18.4,       0.0);         ( 587449.3,
4137080.6,      19.6,      19.6,       0.0);
     ( 587511.0, 4137080.6,      19.6,      19.6,       0.0);         ( 587572.7,
4137080.6,      19.7,      19.7,       0.0);
     ( 587634.5, 4137080.6,      18.9,      18.9,       0.0);         ( 587696.2,
4137080.6,      18.7,      18.7,       0.0);
     ( 587758.0, 4137080.6,      18.5,      18.5,       0.0);         ( 587819.7,
4137080.6,      18.4,      18.4,       0.0);
     ( 587881.4, 4137080.6,      18.2,      18.2,       0.0);         ( 588190.1,
4137080.6,      17.9,      17.9,       0.0);
     ( 588251.9, 4137080.6,      18.9,      18.9,       0.0);         ( 588313.6,
4137080.6,      19.1,      19.1,       0.0);
     ( 588375.4, 4137080.6,      19.0,      19.0,       0.0);         ( 588437.1,
4137080.6,      19.1,      19.1,       0.0);
```

(587449.3, 4137133.7, 19.1, 19.1, 0.0); (587511.0, 4137133.7, 19.0, 19.0, 0.0);
(587572.7, 4137133.7, 18.9, 18.9, 0.0); (587634.5, 4137133.7, 18.8, 18.8, 0.0);
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(587696.2, 4137133.7, 18.5, 18.5, 0.0); (587758.0, 4137133.7, 18.1, 18.1, 0.0);
(588190.1, 4137133.7, 17.2, 17.2, 0.0); (588251.9, 4137133.7, 17.0, 17.0, 0.0);
(588313.6, 4137133.7, 17.0, 17.0, 0.0); (588375.4, 4137133.7, 16.8, 16.8, 0.0);
(588437.1, 4137133.7, 16.7, 16.7, 0.0); (587449.3, 4137186.8, 19.1, 19.1, 0.0);
(587511.0, 4137186.8, 19.0, 19.0, 0.0); (587572.7, 4137186.8, 18.5, 18.5, 0.0);
(587634.5, 4137186.8, 18.3, 18.3, 0.0); (587758.0, 4137186.8, 17.9, 17.9, 0.0);
(587819.7, 4137186.8, 17.5, 17.5, 0.0); (587881.4, 4137186.8, 17.4, 17.4, 0.0);
(587943.2, 4137186.8, 17.4, 17.4, 0.0); (588004.9, 4137186.8, 17.3, 17.3, 0.0);
(588066.7, 4137186.8, 17.3, 17.3, 0.0); (588128.4, 4137186.8, 17.4, 17.4, 0.0);
(588190.1, 4137186.8, 17.2, 17.2, 0.0); (588313.6, 4137186.8, 16.7, 16.7, 0.0);
(588375.4, 4137186.8, 16.3, 16.3, 0.0); (587634.5, 4137239.9, 17.7, 17.7, 0.0);
(587696.2, 4137239.9, 17.7, 17.7, 0.0); (587758.0, 4137239.9, 17.6, 17.6, 0.0);
(587819.7, 4137239.9, 17.2, 17.2, 0.0); (587881.4, 4137239.9, 17.2, 17.2, 0.0);
(587943.2, 4137239.9, 17.1, 17.1, 0.0); (588004.9, 4137239.9, 16.9, 16.9, 0.0);
(588066.7, 4137239.9, 16.9, 16.9, 0.0); (588128.4, 4137239.9, 17.2, 17.2, 0.0);
(588190.1, 4137239.9, 17.0, 17.0, 0.0); (588251.9, 4137239.9, 16.8, 16.8, 0.0);

(588313.6, 4137239.9, 17.0, 17.0, 0.0); (588375.4, 4137239.9, 16.6, 16.6, 0.0);
(587696.2, 4137293.0, 17.2, 17.2, 0.0); (587758.0, 4137293.0, 17.3, 17.3, 0.0);
(587819.7, 4137293.0, 17.1, 17.1, 0.0); (587881.4, 4137293.0, 17.4, 17.4, 0.0);
(587943.2, 4137293.0, 17.4, 17.4, 0.0); (588004.9, 4137293.0, 16.4, 16.4, 0.0);
(588066.7, 4137293.0, 16.0, 16.0, 0.0); (588128.4, 4137293.0, 16.6, 16.6, 0.0);
(588190.1, 4137293.0, 16.7, 16.7, 0.0); (588251.9, 4137293.0, 16.6, 16.6, 0.0);
(588313.6, 4137293.0, 16.6, 16.6, 0.0); (587758.0, 4137346.1, 17.1, 17.1, 0.0);
(587819.7, 4137346.1, 17.0, 17.0, 0.0); (587881.4, 4137346.1, 17.1, 17.1, 0.0);
(587943.2, 4137346.1, 17.2, 17.2, 0.0); (588004.9, 4137346.1, 16.0, 16.0, 0.0);
(588066.7, 4137346.1, 16.0, 16.0, 0.0); (588128.4, 4137346.1, 15.9, 15.9, 0.0);
(588190.1, 4137346.1, 16.1, 16.1, 0.0); (587881.4, 4137399.3, 16.9, 16.9, 0.0);
(587943.2, 4137399.3, 16.7, 16.7, 0.0); (588004.9, 4137399.3, 15.8, 15.8, 0.0);
(588066.7, 4137399.3, 15.9, 15.9, 0.0); (588128.4, 4137399.3, 15.9, 15.9, 0.0);
↑ *** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** ***
*** 13:36:48

PAGE 41
*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi Met Version: 14134
Profile file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi
Surface format: FREE

Profile format: FREE

Surface station no.: 23244 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-12.1	0.213	-9.000	-9.000	-999.	236.	72.6	0.09	0.54	1.00	2.86	1.	10.0	282.5	2.0

```
 09 01 01   1 02  -14.9  0.261 -9.000 -9.000 -999.  321.    109.2  0.09   0.54
1.00    3.36   18.   10.0  282.0    2.0
 09 01 01   1 03   -9.1  0.160 -9.000 -9.000 -999.  158.     40.7  0.09   0.54
1.00    2.36   24.   10.0  282.0    2.0
 09 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.4    2.0
 09 01 01   1 05   -3.9  0.075 -9.000 -9.000 -999.   49.      9.8  0.09   0.54
1.00    1.76   23.   10.0  281.4    2.0
 09 01 01   1 06   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36    2.   10.0  280.9    2.0
 09 01 01   1 07   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36   15.   10.0  280.9    2.0
 09 01 01   1 08   -4.7  0.084 -9.000 -9.000 -999.   61.     11.7  0.15   0.54
0.73    1.76  323.   10.0  280.9    2.0
 09 01 01   1 09   -4.9  0.212 -9.000 -9.000 -999.  234.    179.0  0.15   0.54
0.38    2.36  357.   10.0  280.4    2.0
 09 01 01   1 10    5.7  0.163  0.241  0.014   89.  159.    -69.3  0.09   0.54
0.25    1.76   11.   10.0  280.9    2.0
 09 01 01   1 11   12.2 -9.000 -9.000 -9.000  158. -999. -99999.0  0.24   0.54
0.21    0.00    0.   10.0  280.9    2.0
 09 01 01   1 12   16.0  0.426  0.456  0.016  216.  668.   -442.4  0.15   0.54
0.19    4.36  346.   10.0  281.4    2.0
 09 01 01   1 13   16.6  0.236  0.493  0.015  263.  305.    -71.8  0.36   0.54
0.19    1.76  253.   10.0  281.4    2.0
 09 01 01   1 14   14.2 -9.000 -9.000 -9.000  297. -999. -99999.0  0.24   0.54
0.20    0.00    0.   10.0  282.0    2.0
 09 01 01   1 15   44.9 -9.000 -9.000 -9.000  387. -999. -99999.0  0.24   0.54
0.23    0.00    0.   10.0  283.8    2.0
 09 01 01   1 16   13.2 -9.000 -9.000 -9.000  410. -999. -99999.0  0.24   0.54
0.31    0.00    0.   10.0  284.1    2.0
 09 01 01   1 17  -12.3  0.130 -9.000 -9.000 -999.  112.     16.2  0.15   0.54
0.55    2.36  351.   10.0  282.1    2.0
 09 01 01   1 18   -9.3  0.106 -9.000 -9.000 -999.   83.     11.6  0.36   0.54
1.00    1.76  297.   10.0  282.1    2.0
 09 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  280.1    2.0
```

```
 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 09 01 01 01   10.0 1    1.    2.86   282.6   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        13:36:48

                                   PAGE  43
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                    INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                  L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                  L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                  L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         587572.74    4136390.17        0.00095                     587634.48
4136390.17        0.00119
         587696.22    4136390.17        0.00147                     587757.96
4136390.17        0.00175
         587819.70    4136390.17        0.00197                     587881.44
4136390.17        0.00213
         587943.18    4136390.17        0.00216                     588066.66
4136390.17        0.00188
         588128.40    4136390.17        0.00165                     588190.14
4136390.17        0.00143
         587511.00    4136443.28        0.00083                     587572.74
4136443.28        0.00109
         587634.48    4136443.28        0.00142                     587696.22
4136443.28        0.00179
```

```
         587757.96    4136443.28        0.00217                    587819.70
4136443.28        0.00249
         587881.44    4136443.28        0.00269                    587943.18
4136443.28        0.00272
         588004.92    4136443.28        0.00254                    588066.66
4136443.28        0.00222
         588128.40    4136443.28        0.00188                    588190.14
4136443.28        0.00158
         588251.88    4136443.28        0.00132                    587387.52
4136496.39        0.00055
         587449.26    4136496.39        0.00070                    587511.00
4136496.39        0.00092
         587572.74    4136496.39        0.00127                    587634.48
4136496.39        0.00171
         587696.22    4136496.39        0.00224                    587757.96
4136496.39        0.00278
         587819.70    4136496.39        0.00323                    587881.44
4136496.39        0.00353
         587943.18    4136496.39        0.00355                    588004.92
4136496.39        0.00318
         588066.66    4136496.39        0.00262                    588128.40
4136496.39        0.00213
         588190.14    4136496.39        0.00174                    588251.88
4136496.39        0.00143
         587387.52    4136549.50        0.00058                    587449.26
4136549.50        0.00076
         587511.00    4136549.50        0.00103                    587572.74
4136549.50        0.00147
         587634.48    4136549.50        0.00214                    587696.22
4136549.50        0.00294
         587757.96    4136549.50        0.00374                    587819.70
4136549.50        0.00442
         587881.44    4136549.50        0.00492                    587943.18
4136549.50        0.00496
         588004.92    4136549.50        0.00411                    588066.66
4136549.50        0.00309
         588128.40    4136549.50        0.00240                    588251.88
4136549.50        0.00154
         588313.62    4136549.50        0.00123                    587387.52
4136602.61        0.00062
         587449.26    4136602.61        0.00082                    587511.00
4136602.61        0.00115
         587572.74    4136602.61        0.00175                    587634.48
4136602.61        0.00284
         587696.22    4136602.61        0.00419                    587757.96
4136602.61        0.00548
         587819.70    4136602.61        0.00664                    587881.44
4136602.61        0.00771
```

```
         588066.66    4136602.61        0.00360                       588128.40
4136602.61        0.00272
         588190.14    4136602.61        0.00213                       588251.88
4136602.61        0.00167
         588313.62    4136602.61        0.00130                       588375.36
4136602.61        0.00103
         587264.04    4136655.72        0.00041                       587387.52
4136655.72        0.00065
         587449.26    4136655.72        0.00088                       587511.00
4136655.72        0.00127
         587572.74    4136655.72        0.00212                       587634.48
4136655.72        0.00432
         587696.22    4136655.72        0.00704                       588004.92
4136655.72        0.00684
         588066.66    4136655.72        0.00416                       588128.40
4136655.72        0.00311
         588190.14    4136655.72        0.00239                       588251.88
4136655.72        0.00181
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        13:36:48

                                  PAGE  44
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         588313.62    4136655.72        0.00137                       588375.36
```

4136655.72 0.00106
587264.04 4136708.83 0.00042 587387.52
4136708.83 0.00069
587449.26 4136708.83 0.00093 588004.92
4136708.83 0.00815
588066.66 4136708.83 0.00489 588128.40
4136708.83 0.00370
588190.14 4136708.83 0.00272 588251.88
4136708.83 0.00195
588313.62 4136708.83 0.00143 588375.36
4136708.83 0.00107
587387.52 4136761.94 0.00073 587449.26
4136761.94 0.00099
587511.00 4136761.94 0.00151 587572.74
4136761.94 0.00303
588066.66 4136761.94 0.00616 588128.40
4136761.94 0.00470
588190.14 4136761.94 0.00311 588251.88
4136761.94 0.00208
588313.62 4136761.94 0.00145 588375.36
4136761.94 0.00107
587325.78 4136815.05 0.00059 587387.52
4136815.05 0.00076
587449.26 4136815.05 0.00104 587511.00
4136815.05 0.00158
587572.74 4136815.05 0.00293 587325.78
4136868.16 0.00060
587387.52 4136868.16 0.00078 587449.26
4136868.16 0.00107
587511.00 4136868.16 0.00157 587572.74
4136868.16 0.00254
587757.96 4136868.16 0.00490 587819.70
4136868.16 0.00508
587881.44 4136868.16 0.00783 588190.14
4136868.16 0.00371
588251.88 4136868.16 0.00215 588313.62
4136868.16 0.00142
588375.36 4136868.16 0.00101 588437.10
4136868.16 0.00077
587325.78 4136921.27 0.00062 587387.52
4136921.27 0.00079
587449.26 4136921.27 0.00106 587511.00
4136921.27 0.00147
587572.74 4136921.27 0.00206 587634.48
4136921.27 0.00267
587696.22 4136921.27 0.00302 587757.96
4136921.27 0.00327
587819.70 4136921.27 0.00390 587881.44

4136921.27 0.00660
588190.14 4136921.27 0.00378 588251.88
4136921.27 0.00208
588313.62 4136921.27 0.00135 588375.36
4136921.27 0.00096
588437.10 4136921.27 0.00073 587387.52
4136974.38 0.00079
587449.26 4136974.38 0.00102 587511.00
4136974.38 0.00132
587572.74 4136974.38 0.00167 587634.48
4136974.38 0.00198
587696.22 4136974.38 0.00224 587757.96
4136974.38 0.00257
587819.70 4136974.38 0.00329 587881.44
4136974.38 0.00557
588190.14 4136974.38 0.00363 588251.88
4136974.38 0.00192
588313.62 4136974.38 0.00125 588375.36
4136974.38 0.00090
588437.10 4136974.38 0.00069 587387.52
4137027.49 0.00077
587449.26 4137027.49 0.00095 587511.00
4137027.49 0.00117
587572.74 4137027.49 0.00140 587634.48
4137027.49 0.00161
587696.22 4137027.49 0.00184 587757.96
4137027.49 0.00217
587819.70 4137027.49 0.00284 587881.44
4137027.49 0.00462
588190.14 4137027.49 0.00319 588251.88
4137027.49 0.00169

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689

, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
588313.62	4137027.49	0.00113	588375.36	4137027.49	0.00083
588437.10	4137027.49	0.00065	587449.26	4137080.60	0.00088
587511.00	4137080.60	0.00104	587572.74	4137080.60	0.00121
587634.48	4137080.60	0.00137	587696.22	4137080.60	0.00158
587757.96	4137080.60	0.00189	587819.70	4137080.60	0.00245
587881.44	4137080.60	0.00369	588190.14	4137080.60	0.00248
588251.88	4137080.60	0.00144	588313.62	4137080.60	0.00101
588375.36	4137080.60	0.00077	588437.10	4137080.60	0.00061
587449.26	4137133.71	0.00081	587511.00	4137133.71	0.00093
587572.74	4137133.71	0.00106	587634.48	4137133.71	0.00121
587696.22	4137133.71	0.00139	587757.96	4137133.71	0.00165
588190.14	4137133.71	0.00176	588251.88	4137133.71	0.00118
588313.62	4137133.71	0.00088	588375.36	4137133.71	0.00069
588437.10	4137133.71	0.00056	587449.26	4137186.82	0.00075
587511.00	4137186.82	0.00085	587572.74	4137186.82	0.00095
587634.48	4137186.82	0.00107	587757.96	4137186.82	0.00143
587819.70	4137186.82	0.00171	587881.44	4137186.82	0.00205
587943.18	4137186.82	0.00231	588004.92	4137186.82	0.00235

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         588066.66    4137186.82        0.00214                    588128.40
4137186.82        0.00169
         588190.14    4137186.82        0.00125                    588313.62
4137186.82        0.00075
         588375.36    4137186.82        0.00061                    587634.48
4137239.93        0.00096
         587696.22    4137239.93        0.00108                    587757.96
4137239.93        0.00123
         587819.70    4137239.93        0.00140                    587881.44
4137239.93        0.00155
         587943.18    4137239.93        0.00161                    588004.92
4137239.93        0.00155
         588066.66    4137239.93        0.00138                    588128.40
4137239.93        0.00115
         588190.14    4137239.93        0.00094                    588251.88
4137239.93        0.00077
         588313.62    4137239.93        0.00064                    588375.36
4137239.93        0.00054
         587696.22    4137293.04        0.00095                    587757.96
4137293.04        0.00105
         587819.70    4137293.04        0.00114                    587881.44
4137293.04        0.00120
         587943.18    4137293.04        0.00119                    588004.92
4137293.04        0.00111
         588066.66    4137293.04        0.00099                    588128.40
4137293.04        0.00087
         588190.14    4137293.04        0.00074                    588251.88
4137293.04        0.00064
         588313.62    4137293.04        0.00055                    587757.96
4137346.15        0.00089
         587819.70    4137346.15        0.00093                    587881.44
4137346.15        0.00095
         587943.18    4137346.15        0.00092                    588004.92
4137346.15        0.00085
         588066.66    4137346.15        0.00077                    588128.40
4137346.15        0.00068
         588190.14    4137346.15        0.00061                    587881.44
4137399.26        0.00077
         587943.18    4137399.26        0.00073                    588004.92
4137399.26        0.00068
         588066.66    4137399.26        0.00062                    588128.40
4137399.26        0.00056
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***       01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***         13:36:48
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
587572.74	4136390.17	0.01562	(13011518)	587634.48	4136390.17	0.01547	(12052002)
587696.22	4136390.17	0.01550	(13021621)	587757.96	4136390.17	0.01607	(12010521)
587819.70	4136390.17	0.01615	(10021621)	587881.44	4136390.17	0.01574	(11123020)
587943.18	4136390.17	0.01438	(13021620)	588066.66	4136390.17	0.00968	(11012519)
588128.40	4136390.17	0.00921	(13122718)	588190.14	4136390.17	0.00865	(11122419)
587511.00	4136443.28	0.01603	(10021920)	587572.74	4136443.28	0.01705	(10021920)
587634.48	4136443.28	0.01658	(13011518)	587696.22	4136443.28	0.01667	(12052001)
587757.96	4136443.28	0.01827	(13021621)	587819.70	4136443.28	0.01797	(10021621)
587881.44	4136443.28	0.01828	(11123020)	587943.18	4136443.28	0.01661	(13021620)
588004.92	4136443.28	0.01237	(12022118)	588066.66	4136443.28	0.01113	(12120317)
588128.40	4136443.28	0.01042	(11122419)	588190.14	4136443.28	0.00967	(11011718)
588251.88	4136443.28	0.00864	(11011718)	587387.52	4136496.39	0.01578	(13021723)
587449.26	4136496.39	0.01671	(13021723)	587511.00			

4136496.39 0.01743 (11102020)
587572.74 4136496.39 0.01775 (10021920) 587634.48
4136496.39 0.01909 (10021920)
587696.22 4136496.39 0.01921 (13011518) 587757.96
4136496.39 0.02049 (13021621)
587819.70 4136496.39 0.02152 (12010521) 587881.44
4136496.39 0.02155 (10021621)
587943.18 4136496.39 0.01975 (13021620) 588004.92
4136496.39 0.01397 (12022118)
588066.66 4136496.39 0.01307 (11122419) 588128.40
4136496.39 0.01207 (11011718)
588190.14 4136496.39 0.01060 (11020520) 588251.88
4136496.39 0.00959 (09012618)
587387.52 4136549.50 0.01575 (11111320) 587449.26
4136549.50 0.01778 (13021723)
587511.00 4136549.50 0.01914 (13021723) 587572.74
4136549.50 0.01924 (11102020)
587634.48 4136549.50 0.02159 (10021920) 587696.22
4136549.50 0.02299 (10021920)
587757.96 4136549.50 0.02334 (12052001) 587819.70
4136549.50 0.02584 (13021621)
587881.44 4136549.50 0.02649 (10021621) 587943.18
4136549.50 0.02463 (13021620)
588004.92 4136549.50 0.01741 (11011719) 588066.66
4136549.50 0.01598 (11011718)
588128.40 4136549.50 0.01381 (11020520) 588251.88
4136549.50 0.00980 (10121517)
588313.62 4136549.50 0.00815 (10121517) 587387.52
4136602.61 0.01462 (13061705)
587449.26 4136602.61 0.01731 (11111320) 587511.00
4136602.61 0.02087 (13021723)
587572.74 4136602.61 0.02324 (13021723) 587634.48
4136602.61 0.02427 (13021723)
587696.22 4136602.61 0.02768 (10021920) 587757.96
4136602.61 0.02937 (13011518)
587819.70 4136602.61 0.03175 (13021621) 587881.44
4136602.61 0.03351 (10021621)
588066.66 4136602.61 0.01909 (10121517) 588128.40
4136602.61 0.01482 (10121517)
588190.14 4136602.61 0.01127 (10121517) 588251.88
4136602.61 0.00948 (13021518)
588313.62 4136602.61 0.00850 (13122718) 588375.36
4136602.61 0.00765 (11020602)
587264.04 4136655.72 0.00830 (12092022) 587387.52
4136655.72 0.01201 (13061705)
587449.26 4136655.72 0.01554 (13061705) 587511.00
4136655.72 0.02116 (11111320)
587572.74 4136655.72 0.02725 (13021723) 587634.48

4136655.72 0.03136 (13021723)
587696.22 4136655.72 0.03428 (13021723) 588004.92
4136655.72 0.02859 (10121517)
588066.66 4136655.72 0.01895 (10121517) 588128.40
4136655.72 0.01315 (09122417)
588190.14 4136655.72 0.01179 (09012020) 588251.88
4136655.72 0.01052 (09022019)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** *** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00919	(11122419)	588375.36	4136655.72	0.00818	(11011718)
587264.04	4136708.83	0.00839	(12092022)	587387.52	4136708.83	0.01038	(11022822)
587449.26	4136708.83	0.01259	(12092022)	588004.92	4136708.83	0.02736	(10121517)
588066.66	4136708.83	0.01817	(10121101)	588128.40	4136708.83	0.01563	(09122417)
588190.14	4136708.83	0.01367	(13021518)	588251.88	4136708.83	0.01160	(11011719)
588313.62	4136708.83	0.00996	(11011718)	588375.36	4136708.83	0.00866	(11020520)

587387.52 4136761.94 0.01079 (10010624) 587449.26 4136761.94 0.01317 (10010624)
587511.00 4136761.94 0.01692 (11022822) 587572.74 4136761.94 0.02400 (11022822)
588066.66 4136761.94 0.02241 (10121101) 588128.40 4136761.94 0.01923 (09012020)
588190.14 4136761.94 0.01564 (11011719) 588251.88 4136761.94 0.01272 (11020602)
588313.62 4136761.94 0.01067 (11020520) 588375.36 4136761.94 0.00916 (10121517)
587325.78 4136815.05 0.00851 (13010424) 587387.52 4136815.05 0.01017 (13010424)
587449.26 4136815.05 0.01243 (13010424) 587511.00 4136815.05 0.01575 (11011505)
587572.74 4136815.05 0.02199 (11011505) 587325.78 4136868.16 0.00817 (11011505)
587387.52 4136868.16 0.00971 (11011505) 587449.26 4136868.16 0.01161 (09011503)
587511.00 4136868.16 0.01471 (09021919) 587572.74 4136868.16 0.02012 (12120320)
587757.96 4136868.16 0.02132 (10122419) 587819.70 4136868.16 0.02508 (09122917)
587881.44 4136868.16 0.03721 (10021907) 588190.14 4136868.16 0.01864 (11020520)
588251.88 4136868.16 0.01388 (10121517) 588313.62 4136868.16 0.01065 (10121517)
588375.36 4136868.16 0.00802 (10121517) 588437.10 4136868.16 0.00587 (10121517)
587325.78 4136921.27 0.00781 (09011503) 587387.52 4136921.27 0.00917 (09021919)
587449.26 4136921.27 0.01106 (12120320) 587511.00 4136921.27 0.01326 (12120320)
587572.74 4136921.27 0.01539 (10013002) 587634.48 4136921.27 0.01650 (11021419)
587696.22 4136921.27 0.01602 (10122419) 587757.96 4136921.27 0.01534 (10122419)
587819.70 4136921.27 0.02066 (09122917) 587881.44 4136921.27 0.03288 (09122917)
588190.14 4136921.27 0.01886 (10121517) 588251.88 4136921.27 0.01314 (10121517)
588313.62 4136921.27 0.00919 (10121517) 588375.36 4136921.27 0.00623 (10121517)
588437.10 4136921.27 0.00444 (09122304) 587387.52 4136974.38 0.00880 (12120320)
587449.26 4136974.38 0.00986 (09123123) 587511.00 4136974.38 0.01105 (12012120)
587572.74 4136974.38 0.01222 (11021419) 587634.48 4136974.38 0.01238 (11021619)

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       587696.22   4136974.38        0.01248  (10122419)                587757.96
 4136974.38        0.01300  (10010624)
       587819.70   4136974.38        0.01646  (11022822)                587881.44
 4136974.38        0.02712  (09122917)
       588190.14   4136974.38        0.01792  (10121517)                588251.88
 4136974.38        0.01099  (10121517)
       588313.62   4136974.38        0.00672  (09122304)                588375.36
 4136974.38        0.00503  (13011303)
       588437.10   4136974.38        0.00423  (13011303)                587387.52
 4137027.49        0.00789  (09123123)
       587449.26   4137027.49        0.00864  (12012120)                587511.00
 4137027.49        0.00947  (10120724)
       587572.74   4137027.49        0.00999  (12022706)                587634.48
 4137027.49        0.01030  (10122419)
       587696.22   4137027.49        0.01030  (10012021)                587757.96
 4137027.49        0.01199  (13010424)
       587819.70   4137027.49        0.01509  (11011505)                587881.44
 4137027.49        0.02158  (12120320)
       588190.14   4137027.49        0.01439  (10121517)                588251.88
 4137027.49        0.00830  (13010403)
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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                             ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
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       588313.62   4137027.49        0.00629  (12022606)                588375.36
4137027.49         0.00507  (09020923)
       588437.10   4137027.49        0.00424  (09020923)                587449.26
4137080.60         0.00763  (13121821)
       587511.00   4137080.60        0.00822  (11021419)                587572.74
4137080.60         0.00845  (12121502)
       587634.48   4137080.60        0.00883  (10122419)                587696.22
4137080.60         0.00945  (09021919)
       587757.96   4137080.60        0.01142  (09021919)                587819.70
4137080.60         0.01459  (12120320)
       587881.44   4137080.60        0.02007  (12120320)                588190.14
4137080.60         0.01206  (10010703)
       588251.88   4137080.60        0.00821  (10010703)                588313.62
4137080.60         0.00621  (09120605)
       588375.36   4137080.60        0.00501  (13010403)                588437.10
4137080.60         0.00418  (13010403)
       587449.26   4137133.71        0.00688  (10120724)                587511.00
4137133.71         0.00718  (12022706)
       587572.74   4137133.71        0.00744  (11021619)                587634.48
4137133.71         0.00773  (09021919)
       587696.22   4137133.71        0.00920  (12120320)                587757.96
4137133.71         0.01103  (12120320)
       588190.14   4137133.71        0.01045  (11032318)                588251.88
4137133.71         0.00745  (10010703)
       588313.62   4137133.71        0.00594  (10010703)                588375.36
4137133.71         0.00485  (10010703)
       588437.10   4137133.71        0.00406  (09120605)                587449.26
4137186.82         0.00622  (11021419)
       587511.00   4137186.82        0.00639  (12122218)                587572.74
4137186.82         0.00669  (10122419)
       587634.48   4137186.82        0.00761  (12120320)                587757.96
4137186.82         0.00995  (12012120)
       587819.70   4137186.82        0.01188  (11021419)                587881.44
4137186.82         0.01417  (10122419)
       587943.18   4137186.82        0.01703  (12120224)                588004.92
4137186.82         0.01837  (13020107)
       588066.66   4137186.82        0.01673  (13020107)                588128.40
4137186.82         0.01152  (13020107)
       588190.14   4137186.82        0.00821  (11032318)                588313.62
4137186.82         0.00524  (10010703)
       588375.36   4137186.82        0.00454  (10010703)                587634.48
4137239.93         0.00706  (12010208)
       587696.22   4137239.93        0.00794  (10013002)                587757.96
4137239.93         0.00912  (10120724)
       587819.70   4137239.93        0.01038  (12022706)                587881.44
4137239.93         0.01213  (10122419)
       587943.18   4137239.93        0.01389  (12120224)                588004.92
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 4137239.93        0.01477  (13020107)
       588066.66   4137239.93        0.01318  (13020107)                588128.40
 4137239.93        0.00884  (13020107)
       588190.14   4137239.93        0.00589  (11030217)                588251.88
 4137239.93        0.00583  (11032318)
       588313.62   4137239.93        0.00501  (11032318)                588375.36
 4137239.93        0.00397  (10010703)
       587696.22   4137293.04        0.00739  (10120724)                587757.96
 4137293.04        0.00822  (12022706)
       587819.70   4137293.04        0.00932  (10122419)                587881.44
 4137293.04        0.01047  (10012224)
       587943.18   4137293.04        0.01185  (12120224)                588004.92
 4137293.04        0.01237  (13020107)
       588066.66   4137293.04        0.01085  (13020107)                588128.40
 4137293.04        0.00729  (13020107)
       588190.14   4137293.04        0.00489  (11030217)                588251.88
 4137293.04        0.00454  (11032318)
       588313.62   4137293.04        0.00449  (11032318)                587757.96
 4137346.15        0.00747  (12121502)
       587819.70   4137346.15        0.00850  (10122419)                587881.44
 4137346.15        0.00934  (10122601)
       587943.18   4137346.15        0.01032  (12120224)                588004.92
 4137346.15        0.01063  (13020107)
       588066.66   4137346.15        0.00929  (13020107)                588128.40
 4137346.15        0.00627  (13020107)
       588190.14   4137346.15        0.00397  (11030217)                587881.44
 4137399.26        0.00837  (10122601)
       587943.18   4137399.26        0.00912  (12120224)                588004.92
 4137399.26        0.00932  (13020107)
       588066.66   4137399.26        0.00811  (13020107)                588128.40
 4137399.26        0.00556  (13020107)
♠ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                          ***       13:36:48

                                    PAGE  49
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
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, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)
587572.74	4136390.17	0.00494b (12122924)	587634.48	4136390.17	0.00511b (12122924)
587696.22	4136390.17	0.00503b (12081824)	587757.96	4136390.17	0.00527b (12081824)
587819.70	4136390.17	0.00537b (09071124)	587881.44	4136390.17	0.00494b (10070524)
587943.18	4136390.17	0.00476b (11010924)	588066.66	4136390.17	0.00375b (11010924)
588128.40	4136390.17	0.00325b (12091424)	588190.14	4136390.17	0.00302c (11011424)
587511.00	4136443.28	0.00465b (12122924)	587572.74	4136443.28	0.00543b (12122924)
587634.48	4136443.28	0.00585b (12122924)	587696.22	4136443.28	0.00596b (12122924)
587757.96	4136443.28	0.00622b (12081824)	587819.70	4136443.28	0.00639b (09071124)
587881.44	4136443.28	0.00604b (09071124)	587943.18	4136443.28	0.00575b (11010924)
588004.92	4136443.28	0.00516b (11010924)	588066.66	4136443.28	0.00428b (11010924)
588128.40	4136443.28	0.00392c (11011424)	588190.14	4136443.28	0.00349c (11011424)
588251.88	4136443.28	0.00308c (09010824)	587387.52	4136496.39	0.00241b (12122924)
587449.26	4136496.39	0.00350b (12122924)	587511.00	4136496.39	0.00478b (12122924)
587572.74	4136496.39	0.00592b (12122924)	587634.48	4136496.39	0.00676b (12122924)
587696.22	4136496.39	0.00729b (12122924)	587757.96	4136496.39	0.00742b (12081824)
587819.70	4136496.39	0.00777b (12081824)	587881.44	4136496.39	0.00766b (09071124)
587943.18	4136496.39	0.00716b (11010924)	588004.92	4136496.39	0.00618b (11010924)
588066.66	4136496.39	0.00533c (11011424)	588128.40	4136496.39	0.00465c (11011424)

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       588190.14   4136496.39        0.00386c (11011424)                588251.88
 4136496.39        0.00329c (09010824)
       587387.52   4136549.50        0.00209b (10021924)                587449.26
 4136549.50        0.00317b (12122924)
       587511.00   4136549.50        0.00476b (12122924)                587572.74
 4136549.50        0.00645b (12122924)
       587634.48   4136549.50        0.00780b (12122924)                587696.22
 4136549.50        0.00890b (12122924)
       587757.96   4136549.50        0.00969b (12122924)                587819.70
 4136549.50        0.00987b (10021924)
       587881.44   4136549.50        0.01014b (09071124)                587943.18
 4136549.50        0.00937b (11010924)
       588004.92   4136549.50        0.00784c (11011424)                588066.66
 4136549.50        0.00656c (11011424)
       588128.40   4136549.50        0.00520c (11011424)                588251.88
 4136549.50        0.00343c (09010824)
       588313.62   4136549.50        0.00297c (09010824)                587387.52
 4136602.61        0.00202c (12080724)
       587449.26   4136602.61        0.00267b (12122924)                587511.00
 4136602.61        0.00450b (12122924)
       587572.74   4136602.61        0.00700b (12122924)                587634.48
 4136602.61        0.00917b (12122924)
       587696.22   4136602.61        0.01115b (10021924)                587757.96
 4136602.61        0.01288b (12122924)
       587819.70   4136602.61        0.01404b (10021924)                587881.44
 4136602.61        0.01497b (10021924)
       588066.66   4136602.61        0.00744c (11011424)                588128.40
 4136602.61        0.00542c (11011424)
       588190.14   4136602.61        0.00424c (09010824)                588251.88
 4136602.61        0.00361c (09010824)
       588313.62   4136602.61        0.00315c (09010824)                588375.36
 4136602.61        0.00274c (09010824)
       587264.04   4136655.72        0.00131b (10062624)                587387.52
 4136655.72        0.00199b (10062624)
       587449.26   4136655.72        0.00245c (12080724)                587511.00
 4136655.72        0.00383b (12122924)
       587572.74   4136655.72        0.00742b (12122924)                587634.48
 4136655.72        0.01169b (10021924)
       587696.22   4136655.72        0.01579b (10021924)                588004.92
 4136655.72        0.01241c (11011424)
       588066.66   4136655.72        0.00765c (11011424)                588128.40
 4136655.72        0.00560b (09012424)
       588190.14   4136655.72        0.00454c (09010824)                588251.88
 4136655.72        0.00395c (09010824)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        01/14/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        13:36:48
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00340c	(09010824)	588375.36	4136655.72	0.00287c	(09010824)
587264.04	4136708.83	0.00127b	(11041824)	587387.52	4136708.83	0.00180b	(11041824)
587449.26	4136708.83	0.00235b	(11041824)	588004.92	4136708.83	0.01363b	(13120324)
588066.66	4136708.83	0.00806b	(13120324)	588128.40	4136708.83	0.00660b	(09012424)
588190.14	4136708.83	0.00525c	(09010824)	588251.88	4136708.83	0.00446c	(09010824)
588313.62	4136708.83	0.00366c	(09010824)	588375.36	4136708.83	0.00294c	(09010824)
587387.52	4136761.94	0.00174b	(11041824)	587449.26	4136761.94	0.00231b	(11041824)
587511.00	4136761.94	0.00338b	(11041824)	587572.74	4136761.94	0.00642c	(09122624)
588066.66	4136761.94	0.00975m	(12012724)	588128.40	4136761.94	0.00812b	(09012424)
588190.14	4136761.94	0.00643c	(09010824)	588251.88	4136761.94	0.00497c	(09010824)
588313.62	4136761.94	0.00379c	(09010824)	588375.36	4136761.94	0.00291b	(13120324)
587325.78	4136815.05	0.00154c	(12112724)	587387.52			

4136815.05 0.00197c (12112724)
587449.26 4136815.05 0.00266c (12112724) 587511.00
4136815.05 0.00391c (12112724)
587572.74 4136815.05 0.00732c (10120824) 587325.78
4136868.16 0.00167c (12112724)
587387.52 4136868.16 0.00212c (12112724) 587449.26
4136868.16 0.00281c (10120824)
587511.00 4136868.16 0.00450c (10120824) 587572.74
4136868.16 0.00761c (10120824)
587757.96 4136868.16 0.01161b (10012224) 587819.70
4136868.16 0.01070c (09120624)
587881.44 4136868.16 0.01516b (12122924) 588190.14
4136868.16 0.00802c (09010824)
588251.88 4136868.16 0.00515b (13120324) 588313.62
4136868.16 0.00375b (13120324)
588375.36 4136868.16 0.00281b (13120324) 588437.10
4136868.16 0.00215b (13120324)
587325.78 4136921.27 0.00173c (12112724) 587387.52
4136921.27 0.00224c (10120824)
587449.26 4136921.27 0.00319c (10120824) 587511.00
4136921.27 0.00461c (10120824)
587572.74 4136921.27 0.00683b (10012224) 587634.48
4136921.27 0.00883b (10012224)
587696.22 4136921.27 0.00874b (10012224) 587757.96
4136921.27 0.00826b (10012224)
587819.70 4136921.27 0.00846b (10012224) 587881.44
4136921.27 0.01299c (09120624)
588190.14 4136921.27 0.00809c (09010824) 588251.88
4136921.27 0.00508b (13120324)
588313.62 4136921.27 0.00353b (13120324) 588375.36
4136921.27 0.00256b (13120324)
588437.10 4136921.27 0.00206b (13011024) 587387.52
4136974.38 0.00245c (10120824)
587449.26 4136974.38 0.00326c (10120824) 587511.00
4136974.38 0.00437b (10012224)
587572.74 4136974.38 0.00594b (10012224) 587634.48
4136974.38 0.00677b (10012224)
587696.22 4136974.38 0.00674b (10012224) 587757.96
4136974.38 0.00675b (10012224)
587819.70 4136974.38 0.00774b (10012224) 587881.44
4136974.38 0.01210b (13111924)
588190.14 4136974.38 0.00776b (13120324) 588251.88
4136974.38 0.00467b (13120324)
588313.62 4136974.38 0.00319b (13011024) 588375.36
4136974.38 0.00246b (13011024)
588437.10 4136974.38 0.00199b (13011024) 587387.52
4137027.49 0.00252c (10120824)
587449.26 4137027.49 0.00315c (10120824) 587511.00

4137027.49 0.00418b (10012224)
587572.74 4137027.49 0.00514b (10012224) 587634.48
4137027.49 0.00556b (10012224)
587696.22 4137027.49 0.00566b (10012224) 587757.96
4137027.49 0.00601b (10012224)
587819.70 4137027.49 0.00739b (10012224) 587881.44
4137027.49 0.01129b (13111924)
588190.14 4137027.49 0.00703b (09112324) 588251.88
4137027.49 0.00410b (13011024)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** ***
*** 13:36:48

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4137027.49	0.00295b	(13011024)	588375.36	4137027.49	0.00228b	(13011024)
588437.10	4137027.49	0.00186b	(13011024)	587449.26	4137080.60	0.00311b	(10012224)
587511.00	4137080.60	0.00389b	(10012224)	587572.74	4137080.60	0.00451b	(10012224)
587634.48	4137080.60	0.00479b	(10012224)	587696.22	4137080.60	0.00500b	(10012224)
587757.96	4137080.60	0.00558b	(10012224)	587819.70	4137080.60	0.00708b	(10012224)

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       587881.44   4137080.60        0.01052b (10012224)              588190.14
4137080.60        0.00580b (09112324)
       588251.88   4137080.60        0.00346b (13011024)              588313.62
4137080.60        0.00254b (13011024)
       588375.36   4137080.60        0.00201b (13011024)              588437.10
4137080.60        0.00166b (13011024)
       587449.26   4137133.71        0.00301b (10012224)              587511.00
4137133.71        0.00359b (10012224)
       587572.74   4137133.71        0.00401b (10012224)              587634.48
4137133.71        0.00427b (10012224)
       587696.22   4137133.71        0.00458b (10012224)              587757.96
4137133.71        0.00527b (10012224)
       588190.14   4137133.71        0.00407b (09112324)              588251.88
4137133.71        0.00274b (09112324)
       588313.62   4137133.71        0.00206b (11022324)              588375.36
4137133.71        0.00168b (11022324)
       588437.10   4137133.71        0.00142b (11022324)              587449.26
4137186.82        0.00289b (10012224)
       587511.00   4137186.82        0.00333b (10012224)              587572.74
4137186.82        0.00365b (10012224)
       587634.48   4137186.82        0.00391b (10012224)              587757.96
4137186.82        0.00498b (10012224)
       587819.70   4137186.82        0.00610b (10012224)              587881.44
4137186.82        0.00742b (10012224)
       587943.18   4137186.82        0.00771b (10012224)              588004.92
4137186.82        0.00715c (10122624)
       588066.66   4137186.82        0.00607c (10122624)              588128.40
4137186.82        0.00386b (09021124)
       588190.14   4137186.82        0.00288b (09112324)              588313.62
4137186.82        0.00173b (09112324)
       588375.36   4137186.82        0.00143b (11022324)              587634.48
4137239.93        0.00365b (10012224)
       587696.22   4137239.93        0.00403b (10012224)              587757.96
4137239.93        0.00462b (10012224)
       587819.70   4137239.93        0.00535b (10012224)              587881.44
4137239.93        0.00584b (10012224)
       587943.18   4137239.93        0.00550b (10012224)              588004.92
4137239.93        0.00504c (10122624)
       588066.66   4137239.93        0.00400c (10122624)              588128.40
4137239.93        0.00275b (09021124)
       588190.14   4137239.93        0.00218b (09112324)              588251.88
4137239.93        0.00180b (09112324)
       588313.62   4137239.93        0.00149b (09112324)              588375.36
4137239.93        0.00124b (09112324)
       587696.22   4137293.04        0.00376b (10012224)              587757.96
4137293.04        0.00419b (10012224)
       587819.70   4137293.04        0.00457b (10012224)              587881.44
4137293.04        0.00461b (10012224)
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       587943.18   4137293.04        0.00426c (10122624)                588004.92
 4137293.04        0.00377c (10122624)
       588066.66   4137293.04        0.00289c (10122624)                588128.40
 4137293.04        0.00211b (09021124)
       588190.14   4137293.04        0.00173b (09112324)                588251.88
 4137293.04        0.00149b (09112324)
       588313.62   4137293.04        0.00128b (09112324)                587757.96
 4137346.15        0.00372b (10012224)
       587819.70   4137346.15        0.00384b (10012224)                587881.44
 4137346.15        0.00363b (10012224)
       587943.18   4137346.15        0.00342c (10122624)                588004.92
 4137346.15        0.00293c (10122624)
       588066.66   4137346.15        0.00223c (10122624)                588128.40
 4137346.15        0.00170b (09021124)
       588190.14   4137346.15        0.00141b (09112324)                587881.44
 4137399.26        0.00298c (10122624)
       587943.18   4137399.26        0.00281c (10122624)                588004.92
 4137399.26        0.00235c (10122624)
       588066.66   4137399.26        0.00179c (10122624)                588128.40
 4137399.26        0.00141b (09021124)
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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                *** THE   8TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     L0019664    , L0019665
 , L0019666    , L0019667    , L0019668    ,
                 L0019669    , L0019670    , L0019671    , L0019672    , L0019673
 , L0019674    , L0019675    , L0019676    ,
                 L0019677    , L0019678    , L0019679    , L0019680    , L0019681
 , L0019682    , L0019683    , L0019684    ,
                 L0019685    , L0019686    , L0019687    , L0019688    , L0019689
 , L0019690    , L0019691    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                             ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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- -
587572.74 4136390.17 0.00316c (12082124) 587634.48
4136390.17 0.00356c (11061624)
587696.22 4136390.17 0.00406b (13061524) 587757.96
4136390.17 0.00435b (12122924)
587819.70 4136390.17 0.00460b (12072924) 587881.44
4136390.17 0.00448b (09053124)
587943.18 4136390.17 0.00435b (10021924) 588066.66
4136390.17 0.00352b (09052824)
588128.40 4136390.17 0.00308c (13090224) 588190.14
4136390.17 0.00274b (12081224)
587511.00 4136443.28 0.00269b (13061524) 587572.74
4136443.28 0.00334b (09071124)
587634.48 4136443.28 0.00391c (09050924) 587696.22
4136443.28 0.00470c (09010124)
587757.96 4136443.28 0.00510c (09071224) 587819.70
4136443.28 0.00542b (10070524)
587881.44 4136443.28 0.00540c (09071224) 587943.18
4136443.28 0.00523b (10021924)
588004.92 4136443.28 0.00466b (10070524) 588066.66
4136443.28 0.00408b (13072224)
588128.40 4136443.28 0.00342b (12060824) 588190.14
4136443.28 0.00298b (11020824)
588251.88 4136443.28 0.00256b (12091424) 587387.52
4136496.39 0.00188c (11111324)
587449.26 4136496.39 0.00236c (12080724) 587511.00
4136496.39 0.00286c (12080724)
587572.74 4136496.39 0.00350b (09071124) 587634.48
4136496.39 0.00459c (09050924)
587696.22 4136496.39 0.00535b (12072924) 587757.96
4136496.39 0.00622c (12082124)
587819.70 4136496.39 0.00654c (12082124) 587881.44
4136496.39 0.00681c (09071224)
587943.18 4136496.39 0.00652b (10021924) 588004.92
4136496.39 0.00567b (13072224)
588066.66 4136496.39 0.00470b (09012424) 588128.40
4136496.39 0.00386b (11020824)
588190.14 4136496.39 0.00329c (12013124) 588251.88
4136496.39 0.00269b (12091424)
587387.52 4136549.50 0.00180c (13011424) 587449.26
4136549.50 0.00233b (09101024)
587511.00 4136549.50 0.00302c (13052124) 587572.74
4136549.50 0.00390c (13062124)
587634.48 4136549.50 0.00542c (09050924) 587696.22
4136549.50 0.00650c (12082124)
587757.96 4136549.50 0.00772c (09010124) 587819.70
4136549.50 0.00838b (13061524)
587881.44 4136549.50 0.00893c (09071224) 587943.18

4136549.50 0.00864b (10100124)
588004.92 4136549.50 0.00700c (12072224) 588066.66
4136549.50 0.00540b (12091424)
588128.40 4136549.50 0.00434c (12013124) 588251.88
4136549.50 0.00284c (10123024)
588313.62 4136549.50 0.00246b (12060824) 587387.52
4136602.61 0.00162b (12122924)
587449.26 4136602.61 0.00221c (13052124) 587511.00
4136602.61 0.00309b (10050424)
587572.74 4136602.61 0.00458b (13061524) 587634.48
4136602.61 0.00668b (11041824)
587696.22 4136602.61 0.00854c (13011424) 587757.96
4136602.61 0.01008b (10050424)
587819.70 4136602.61 0.01159b (11041824) 587881.44
4136602.61 0.01264b (13072024)
588066.66 4136602.61 0.00612c (12013124) 588128.40
4136602.61 0.00472b (11020824)
588190.14 4136602.61 0.00374b (13120324) 588251.88
4136602.61 0.00308m (12012724)
588313.62 4136602.61 0.00262b (12081224) 588375.36
4136602.61 0.00223b (13112124)
587264.04 4136655.72 0.00097c (09122724) 587387.52
4136655.72 0.00154c (09122724)
587449.26 4136655.72 0.00207b (12122924) 587511.00
4136655.72 0.00301c (10052424)
587572.74 4136655.72 0.00489b (12081824) 587634.48
4136655.72 0.00886b (09071124)
587696.22 4136655.72 0.01223b (13061524) 588004.92
4136655.72 0.01064c (12120624)
588066.66 4136655.72 0.00656c (12013124) 588128.40
4136655.72 0.00503b (10100124)
588190.14 4136655.72 0.00407b (11020824) 588251.88
4136655.72 0.00335b (13112124)

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681

, L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689
, L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00279b	(13112124)	588375.36	4136655.72	0.00232b	(13112124)
587264.04	4136708.83	0.00095b	(11022824)	587387.52	4136708.83	0.00143c	(10052424)
587449.26	4136708.83	0.00197b	(11062424)	588004.92	4136708.83	0.01238c	(13121924)
588066.66	4136708.83	0.00745c	(12072224)	588128.40	4136708.83	0.00584b	(12081224)
588190.14	4136708.83	0.00463c	(09122224)	588251.88	4136708.83	0.00374b	(12081224)
588313.62	4136708.83	0.00297b	(13112124)	588375.36	4136708.83	0.00244b	(11020824)
587387.52	4136761.94	0.00151m	(12112824)	587449.26	4136761.94	0.00203m	(12112824)
587511.00	4136761.94	0.00311b	(09040824)	587572.74	4136761.94	0.00598b	(09040824)
588066.66	4136761.94	0.00919b	(10021924)	588128.40	4136761.94	0.00737c	(12072224)
588190.14	4136761.94	0.00547b	(09012424)	588251.88	4136761.94	0.00409c	(11020524)
588313.62	4136761.94	0.00317c	(13121924)	588375.36	4136761.94	0.00251c	(10020724)
587325.78	4136815.05	0.00127b	(09040824)	587387.52	4136815.05	0.00166b	(11041824)
587449.26	4136815.05	0.00236b	(11022124)	587511.00	4136815.05	0.00362c	(12122824)
587572.74	4136815.05	0.00668c	(12112724)	587325.78	4136868.16	0.00145m	(12122224)
587387.52	4136868.16	0.00190b	(13091024)	587449.26	4136868.16	0.00259c	(12020124)
587511.00	4136868.16	0.00386c	(12122824)	587572.74	4136868.16	0.00668c	(09120624)
587757.96	4136868.16	0.01061c	(11110524)	587819.70	4136868.16	0.00987b	(10112224)

```
       587881.44   4136868.16        0.01342b (11022124)                588190.14
4136868.16        0.00692c (09122224)
       588251.88   4136868.16        0.00446c (10020724)                588313.62
4136868.16        0.00317b (09112324)
       588375.36   4136868.16        0.00238c (09010824)                588437.10
4136868.16        0.00186b (09112324)
       587325.78   4136921.27        0.00157b (13091024)                587387.52
4136921.27        0.00198c (12020124)
       587449.26   4136921.27        0.00268c (12111624)                587511.00
4136921.27        0.00394c (12111624)
       587572.74   4136921.27        0.00591  (10122124)                587634.48
4136921.27        0.00753b (09020524)
       587696.22   4136921.27        0.00746m (09110524)                587757.96
4136921.27        0.00717c (13120624)
       587819.70   4136921.27        0.00784b (10012324)                587881.44
4136921.27        0.01202b (10052524)
       588190.14   4136921.27        0.00712b (12022624)                588251.88
4136921.27        0.00448c (10020724)
       588313.62   4136921.27        0.00304b (12122624)                588375.36
4136921.27        0.00230b (12011524)
       588437.10   4136921.27        0.00179b (12122624)                587387.52
4136974.38        0.00204b (10012224)
       587449.26   4136974.38        0.00279b (12111924)                587511.00
4136974.38        0.00383c (12121624)
       587572.74   4136974.38        0.00495c (12121624)                587634.48
4136974.38        0.00560  (10122124)
       587696.22   4136974.38        0.00556m (09110524)                587757.96
4136974.38        0.00579b (10112224)
       587819.70   4136974.38        0.00698c (09122724)                587881.44
4136974.38        0.01105b (10052524)
       588190.14   4136974.38        0.00701b (13011024)                588251.88
4136974.38        0.00414c (12120624)
       588313.62   4136974.38        0.00284c (10020724)                588375.36
4136974.38        0.00207b (12122624)
       588437.10   4136974.38        0.00165b (09020924)                587387.52
4137027.49        0.00212b (12111924)
       587449.26   4137027.49        0.00276c (12122024)                587511.00
4137027.49        0.00351  (10122124)
       587572.74   4137027.49        0.00417b (09020524)                587634.48
4137027.49        0.00451m (09110524)
       587696.22   4137027.49        0.00463c (12121624)                587757.96
4137027.49        0.00512c (10120824)
       587819.70   4137027.49        0.00647b (10112224)                587881.44
4137027.49        0.01022b (09020524)
       588190.14   4137027.49        0.00638b (12022624)                588251.88
4137027.49        0.00371c (12120624)
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0019664 , L0019665 , L0019666 , L0019667 , L0019668 ,
L0019669 , L0019670 , L0019671 , L0019672 , L0019673 , L0019674 , L0019675 , L0019676 ,
L0019677 , L0019678 , L0019679 , L0019680 , L0019681 , L0019682 , L0019683 , L0019684 ,
L0019685 , L0019686 , L0019687 , L0019688 , L0019689 , L0019690 , L0019691 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4137027.49	0.00257b	(11022324)	588375.36	4137027.49	0.00194b	(09020924)
588437.10	4137027.49	0.00158b	(09020924)	587449.26	4137080.60	0.00266c	(12121624)
587511.00	4137080.60	0.00319c	(12122024)	587572.74	4137080.60	0.00364m	(09110524)
587634.48	4137080.60	0.00388b	(10012324)	587696.22	4137080.60	0.00410	(10122124)
587757.96	4137080.60	0.00476c	(09120624)	587819.70	4137080.60	0.00620c	(12121624)
587881.44	4137080.60	0.00939c	(12121624)	588190.14	4137080.60	0.00502b	(11022324)
588251.88	4137080.60	0.00309b	(12022724)	588313.62	4137080.60	0.00223b	(12022724)
588375.36	4137080.60	0.00174b	(12022624)	588437.10	4137080.60	0.00141c	(13012724)
587449.26	4137133.71	0.00253c	(12121624)	587511.00	4137133.71	0.00292b	(09020524)
587572.74	4137133.71	0.00323m	(09110524)	587634.48	4137133.71	0.00347b	(12121524)
587696.22	4137133.71	0.00381b	(10012324)	587757.96			

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4137133.71        0.00454b (12121524)
       588190.14   4137133.71        0.00347c (12110824)                588251.88
4137133.71        0.00242b (11022124)
       588313.62   4137133.71        0.00186b (09020924)                588375.36
4137133.71        0.00150c (13121924)
       588437.10   4137133.71        0.00124c (13121924)                587449.26
4137186.82        0.00239c (12122024)
       587511.00   4137186.82        0.00272b (09020524)                587572.74
4137186.82        0.00294m (09110524)
       587634.48   4137186.82        0.00323b (12121524)                587757.96
4137186.82        0.00430c (12121624)
       587819.70   4137186.82        0.00524m (09110524)                587881.44
4137186.82        0.00630b (10012324)
       587943.18   4137186.82        0.00662  (10122124)                588004.92
4137186.82        0.00590m (09110524)
       588066.66   4137186.82        0.00478b (09032124)                588128.40
4137186.82        0.00339c (13020724)
       588190.14   4137186.82        0.00240b (13013024)                588313.62
4137186.82        0.00151c (13121924)
       588375.36   4137186.82        0.00126c (13121924)                587634.48
4137239.93        0.00302c (12121624)
       587696.22   4137239.93        0.00340b (10012324)                587757.96
4137239.93        0.00392b (12111924)
       587819.70   4137239.93        0.00451b (10012324)                587881.44
4137239.93        0.00478b (13111924)
       587943.18   4137239.93        0.00463b (12111924)                588004.92
4137239.93        0.00396b (09101424)
       588066.66   4137239.93        0.00314b (09101424)                588128.40
4137239.93        0.00233b (12022724)
       588190.14   4137239.93        0.00181b (13120424)                588251.88
4137239.93        0.00151b (13013024)
       588313.62   4137239.93        0.00126b (10112424)                588375.36
4137239.93        0.00108b (12011524)
       587696.22   4137293.04        0.00315b (10012324)                587757.96
4137293.04        0.00350b (10012324)
       587819.70   4137293.04        0.00370b (10012324)                587881.44
4137293.04        0.00378b (11112224)
       587943.18   4137293.04        0.00337b (12111924)                588004.92
4137293.04        0.00288c (10120424)
       588066.66   4137293.04        0.00229b (11032124)                588128.40
4137293.04        0.00173c (10030124)
       588190.14   4137293.04        0.00143b (13120424)                588251.88
4137293.04        0.00123b (11022124)
       588313.62   4137293.04        0.00108b (12022724)                587757.96
4137346.15        0.00299b (13111924)
       587819.70   4137346.15        0.00306b (11112324)                587881.44
4137346.15        0.00294m (09110524)
       587943.18   4137346.15        0.00261m (13033124)                588004.92
```

4137346.15 0.00220b (09032124)
588066.66 4137346.15 0.00178b (12022724) 588128.40
4137346.15 0.00139c (10030124)
588190.14 4137346.15 0.00117c (10112124) 587881.44
4137399.26 0.00232 (10122124)
587943.18 4137399.26 0.00209b (11112324) 588004.92
4137399.26 0.00176b (10122524)
588066.66 4137399.26 0.00143c (13020724) 588128.40
4137399.26 0.00117b (09020524)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 01/14/20
*** AERMET - VERSION 14134 *** ***
*** 13:36:48

PAGE 55
*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00815	AT (588004.92, 4136708.83, 20.16, 20.16, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.00783	AT (587881.44, 4136868.16, 19.31, 19.31, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.00771	AT (587881.44, 4136602.61, 21.26, 21.26, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.00704	AT (587696.22, 4136655.72, 21.88, 21.88, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.00684	AT (588004.92, 4136655.72, 20.11, 20.11, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.00664	AT (587819.70, 4136602.61, 21.15, 21.15, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00660	AT (587881.44, 4136921.27, 19.43, 19.43, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00616	AT (588066.66, 4136761.94, 20.04, 20.04, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00557	AT (587881.44, 4136974.38,		

18.86,   18.86,   0.00) DC
         10TH HIGHEST VALUE IS   0.00548 AT (587757.96, 4136602.61,
21.74,   21.74,   0.00) DC

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                                *** THE SUMMARY OF HIGHEST 1-HR
RESULTS ***

                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
              **

                                                        DATE
                                          NETWORK
GROUP ID   AVERAGE CONC   (YYMMDDHH)   RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)   OF TYPE GRID-ID
- -
- -

ALL   HIGH   1ST HIGH VALUE IS   0.03721 ON 10021907: AT (587881.44,
4136868.16,   19.31,   19.31,   0.00) DC

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

                                                *** THE SUMMARY OF HIGHEST 24-HR

RESULTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	0.01579b	ON 10021924:	AT (587696.22, 4136655.72, 21.88, 21.88, 0.00)	DC	
	HIGH 8TH HIGH VALUE IS	0.01342b	ON 11022124:	AT (587881.44, 4136868.16, 19.31, 19.31, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 15496 Informational Message(s)

A Total of 43872 Hours Were Processed

A Total of 14061 Calm Hours Identified

A Total of 1435 Missing Hours Identified (3.27 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

```
   ********   WARNING MESSAGES   ********
MX W481   43873         MAIN: Data Remaining After End of Year. Number of Hours=
       48

   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 2/25/2020
** File: C:\Lakes\AERMOD View\Intuitive_ConcreteBP\Intuitive_ConcreteBP.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w
   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL Intuitive_ConcreteBP.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     587693.914  4136811.541       20.210
** DESCRSRC Concrete Batch Plant
** Source Parameters **
   SRCPARAM VOL1          0.000224    15.000    11.628     7.000
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
```

```
RE STARTING
   INCLUDED Intuitive_ConcreteBP.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
Sunnyvale\HRA\Construction\745090.PFL"
   SURFDATA 23244 2009
   UAIRDATA 23230 2009 OAKLAND/WSO_AP
   PROFBASE 11.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST INTUITIVE_CONCRETEBP.AD\01H1GALL.PLT 31
   PLOTFILE 24 ALL 1ST INTUITIVE_CONCRETEBP.AD\24H1GALL.PLT 32
   PLOTFILE 24 ALL 8TH INTUITIVE_CONCRETEBP.AD\24H8GALL.PLT 33
   PLOTFILE ANNUAL ALL INTUITIVE_CONCRETEBP.AD\AN00GALL.PLT 34
   SUMMFILE Intuitive_ConcreteBP.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.7.0
** Lakes Environmental Software Inc.
** Date: 2/25/2020
** File: C:\Lakes\AERMOD View\Intuitive_ConcreteBP\Intuitive_ConcreteBP.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w
   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 1938000
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL Intuitive_ConcreteBP.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     587693.914  4136811.541       20.210
** DESCRSRC Concrete Batch Plant
** Source Parameters **
   SRCPARAM VOL1          0.000224    15.000    11.628     7.000
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
```

```
RE STARTING
   INCLUDED Intuitive_ConcreteBP.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
Sunnyvale\HRA\Construction\745090.SFC"
   PROFFILE "\\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical
Sunnyvale\HRA\Construction\745090.PFL"
   SURFDATA 23244 2009
   UAIRDATA 23230 2009 OAKLAND/WSO_AP
   PROFBASE 11.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST INTUITIVE_CONCRETEBP.AD\01H1GALL.PLT 31
   PLOTFILE 24 ALL 1ST INTUITIVE_CONCRETEBP.AD\24H1GALL.PLT 32
   PLOTFILE 24 ALL 8TH INTUITIVE_CONCRETEBP.AD\24H8GALL.PLT 33
   PLOTFILE ANNUAL ALL INTUITIVE_CONCRETEBP.AD\AN00GALL.PLT 34
   SUMMFILE Intuitive_ConcreteBP.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

♠ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                          ***       15:24:21

                                    PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
```

*** MODEL SETUP OPTIONS SUMMARY ***

- -

```
 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   1938000.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     238
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:      1 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)
```

```
 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    11.90 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   Intuitive_ConcreteBP.err

 **File for Summary of Results:   Intuitive_ConcreteBP.sum

 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
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                                   PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
```

```
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 VOL1             0   0.22400E-03  587693.9 4136811.5    20.2    15.00    11.63
7.00     YES
```



```
                                        *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------


  ALL        VOL1       ,
```



```
                                        *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP                                   SOURCE IDs
  --------   ---------                                   ----------


             1938000.   VOL1       ,
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(587572.7, 4136390.2, 23.7, 23.7, 0.0); (587634.5, 4136390.2, 23.5, 23.5, 0.0);
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     ( 587449.3, 4136655.7,      22.5,      22.5,       0.0);         ( 587511.0,
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     ( 588190.1, 4136655.7,      20.3,      20.3,       0.0);         ( 588251.9,
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*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 02/25/20
*** AERMET - VERSION 14134 *** *** 15:24:21

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(588313.6, 4136708.8, 19.7, 19.7, 0.0); (588375.4, 4136708.8, 19.4, 19.4, 0.0);
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*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 02/25/20
*** AERMET - VERSION 14134 *** *** 15:24:21

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(587696.2, 4137133.7, 18.5, 18.5, 0.0); (587758.0, 4137133.7, 18.1, 18.1, 0.0);
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4137293.0,      17.4,      17.4,       0.0);
     ( 587943.2, 4137293.0,      17.4,      17.4,       0.0);         ( 588004.9,
4137293.0,      16.4,      16.4,       0.0);
     ( 588066.7, 4137293.0,      16.0,      16.0,       0.0);         ( 588128.4,
4137293.0,      16.6,      16.6,       0.0);
     ( 588190.1, 4137293.0,      16.7,      16.7,       0.0);         ( 588251.9,
4137293.0,      16.6,      16.6,       0.0);
     ( 588313.6, 4137293.0,      16.6,      16.6,       0.0);         ( 587758.0,
4137346.1,      17.1,      17.1,       0.0);
     ( 587819.7, 4137346.1,      17.0,      17.0,       0.0);         ( 587881.4,
4137346.1,      17.1,      17.1,       0.0);
     ( 587943.2, 4137346.1,      17.2,      17.2,       0.0);         ( 588004.9,
4137346.1,      16.0,      16.0,       0.0);
     ( 588066.7, 4137346.1,      16.0,      16.0,       0.0);         ( 588128.4,
4137346.1,      15.9,      15.9,       0.0);
     ( 588190.1, 4137346.1,      16.1,      16.1,       0.0);         ( 587881.4,
4137399.3,      16.9,      16.9,       0.0);
     ( 587943.2, 4137399.3,      16.7,      16.7,       0.0);         ( 588004.9,
4137399.3,      15.8,      15.8,       0.0);
     ( 588066.7, 4137399.3,      15.9,      15.9,       0.0);         ( 588128.4,
4137399.3,      15.9,      15.9,       0.0);
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                          ***       15:24:21

                                    PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
```

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi Met Version: 14134
Profile file: \\orafp01\CA_ORA\ORA_AQN\197041002 - Intuitive Surgical Sunnyvale\HRA\Constructi
Surface format: FREE

Profile format: FREE

Surface station no.: 23244 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -
 09 01 01   1 01  -12.1  0.213 -9.000 -9.000 -999.  236.     72.6  0.09   0.54
1.00    2.86    1.   10.0  282.5    2.0
 09 01 01   1 02  -14.9  0.261 -9.000 -9.000 -999.  321.    109.2  0.09   0.54
1.00    3.36   18.   10.0  282.0    2.0
 09 01 01   1 03   -9.1  0.160 -9.000 -9.000 -999.  158.     40.7  0.09   0.54
1.00    2.36   24.   10.0  282.0    2.0
 09 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.4    2.0
 09 01 01   1 05   -3.9  0.075 -9.000 -9.000 -999.   49.      9.8  0.09   0.54
1.00    1.76   23.   10.0  281.4    2.0
 09 01 01   1 06   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36    2.   10.0  280.9    2.0
 09 01 01   1 07   -9.1  0.159 -9.000 -9.000 -999.  153.     40.5  0.09   0.54
1.00    2.36   15.   10.0  280.9    2.0
 09 01 01   1 08   -4.7  0.084 -9.000 -9.000 -999.   61.     11.7  0.15   0.54
0.73    1.76  323.   10.0  280.9    2.0
 09 01 01   1 09   -4.9  0.212 -9.000 -9.000 -999.  234.    179.0  0.15   0.54
0.38    2.36  357.   10.0  280.4    2.0
 09 01 01   1 10    5.7  0.163  0.241  0.014   89.  159.    -69.3  0.09   0.54
0.25    1.76   11.   10.0  280.9    2.0
 09 01 01   1 11   12.2 -9.000 -9.000 -9.000  158. -999. -99999.0  0.24   0.54
0.21    0.00    0.   10.0  280.9    2.0
 09 01 01   1 12   16.0  0.426  0.456  0.016  216.  668.   -442.4  0.15   0.54
0.19    4.36  346.   10.0  281.4    2.0
 09 01 01   1 13   16.6  0.236  0.493  0.015  263.  305.    -71.8  0.36   0.54
0.19    1.76  253.   10.0  281.4    2.0
 09 01 01   1 14   14.2 -9.000 -9.000 -9.000  297. -999. -99999.0  0.24   0.54
0.20    0.00    0.   10.0  282.0    2.0
 09 01 01   1 15   44.9 -9.000 -9.000 -9.000  387. -999. -99999.0  0.24   0.54
0.23    0.00    0.   10.0  283.8    2.0
 09 01 01   1 16   13.2 -9.000 -9.000 -9.000  410. -999. -99999.0  0.24   0.54
0.31    0.00    0.   10.0  284.1    2.0
 09 01 01   1 17  -12.3  0.130 -9.000 -9.000 -999.  112.     16.2  0.15   0.54
0.55    2.36  351.   10.0  282.1    2.0
 09 01 01   1 18   -9.3  0.106 -9.000 -9.000 -999.   83.     11.6  0.36   0.54
1.00    1.76  297.   10.0  282.1    2.0
 09 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
 09 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  281.1    2.0
```

```
 09 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   0.54
1.00    0.00    0.   10.0  280.1    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 09 01 01 01   10.0 1    1.    2.86   282.6   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     VOL1        ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         587572.74    4136390.17        0.00078                       587634.48
4136390.17        0.00100
         587696.22    4136390.17        0.00124                       587757.96
4136390.17        0.00141
         587819.70    4136390.17        0.00143                       587881.44
4136390.17        0.00134
         587943.18    4136390.17        0.00117                       588066.66
4136390.17        0.00084
         588128.40    4136390.17        0.00071                       588190.14
4136390.17        0.00061
         587511.00    4136443.28        0.00063                       587572.74
4136443.28        0.00087
         587634.48    4136443.28        0.00118                       587696.22
4136443.28        0.00151
         587757.96    4136443.28        0.00174                       587819.70
4136443.28        0.00175
         587881.44    4136443.28        0.00156                       587943.18
```

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4136443.28        0.00130
         588004.92    4136443.28        0.00107                    588066.66
4136443.28        0.00088
         588128.40    4136443.28        0.00073                    588190.14
4136443.28        0.00062
         588251.88    4136443.28        0.00053                    587387.52
4136496.39        0.00033
         587449.26    4136496.39        0.00046                    587511.00
4136496.39        0.00065
         587572.74    4136496.39        0.00097                    587634.48
4136496.39        0.00140
         587696.22    4136496.39        0.00189                    587757.96
4136496.39        0.00219
         587819.70    4136496.39        0.00212                    587881.44
4136496.39        0.00178
         587943.18    4136496.39        0.00141                    588004.92
4136496.39        0.00114
         588066.66    4136496.39        0.00093                    588128.40
4136496.39        0.00075
         588190.14    4136496.39        0.00063                    588251.88
4136496.39        0.00054
         587387.52    4136549.50        0.00032                    587449.26
4136549.50        0.00045
         587511.00    4136549.50        0.00067                    587572.74
4136549.50        0.00104
         587634.48    4136549.50        0.00166                    587696.22
4136549.50        0.00242
         587757.96    4136549.50        0.00286                    587819.70
4136549.50        0.00257
         587881.44    4136549.50        0.00199                    587943.18
4136549.50        0.00150
         588004.92    4136549.50        0.00117                    588066.66
4136549.50        0.00093
         588128.40    4136549.50        0.00076                    588251.88
4136549.50        0.00054
         588313.62    4136549.50        0.00047                    587387.52
4136602.61        0.00031
         587449.26    4136602.61        0.00044                    587511.00
4136602.61        0.00066
         587572.74    4136602.61        0.00111                    587634.48
4136602.61        0.00200
         587696.22    4136602.61        0.00331                    587757.96
4136602.61        0.00387
         587819.70    4136602.61        0.00308                    587881.44
4136602.61        0.00214
         588066.66    4136602.61        0.00095                    588128.40
4136602.61        0.00077
         588190.14    4136602.61        0.00064                    588251.88
```

```
4136602.61        0.00055
         588313.62    4136602.61        0.00047                            588375.36
4136602.61        0.00041
         587264.04    4136655.72        0.00019                            587387.52
4136655.72        0.00030
         587449.26    4136655.72        0.00042                            587511.00
4136655.72        0.00064
         587572.74    4136655.72        0.00110                            587634.48
4136655.72        0.00233
         587696.22    4136655.72        0.00478                            588004.92
4136655.72        0.00119
         588066.66    4136655.72        0.00095                            588128.40
4136655.72        0.00078
         588190.14    4136655.72        0.00065                            588251.88
4136655.72        0.00055
↑ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                    *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     VOL1        ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                             X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
         588313.62    4136655.72        0.00048                            588375.36
4136655.72        0.00041
         587264.04    4136708.83        0.00019                            587387.52
4136708.83        0.00030
         587449.26    4136708.83        0.00042                            588004.92
4136708.83        0.00119
         588066.66    4136708.83        0.00095                            588128.40
4136708.83        0.00078
         588190.14    4136708.83        0.00065                            588251.88
4136708.83        0.00055
         588313.62    4136708.83        0.00048                            588375.36
```

4136708.83 0.00042
587387.52 4136761.94 0.00034 587449.26
4136761.94 0.00045
587511.00 4136761.94 0.00063 587572.74
4136761.94 0.00096
588066.66 4136761.94 0.00094 588128.40
4136761.94 0.00077
588190.14 4136761.94 0.00064 588251.88
4136761.94 0.00055
588313.62 4136761.94 0.00047 588375.36
4136761.94 0.00041
587325.78 4136815.05 0.00030 587387.52
4136815.05 0.00040
587449.26 4136815.05 0.00053 587511.00
4136815.05 0.00075
587572.74 4136815.05 0.00119 587325.78
4136868.16 0.00035
587387.52 4136868.16 0.00048 587449.26
4136868.16 0.00067
587511.00 4136868.16 0.00108 587572.74
4136868.16 0.00199
587757.96 4136868.16 0.00193 587819.70
4136868.16 0.00175
587881.44 4136868.16 0.00142 588190.14
4136868.16 0.00056
588251.88 4136868.16 0.00048 588313.62
4136868.16 0.00042
588375.36 4136868.16 0.00037 588437.10
4136868.16 0.00033
587325.78 4136921.27 0.00045 587387.52
4136921.27 0.00063
587449.26 4136921.27 0.00095 587511.00
4136921.27 0.00149
587572.74 4136921.27 0.00234 587634.48
4136921.27 0.00282
587696.22 4136921.27 0.00179 587757.96
4136921.27 0.00117
587819.70 4136921.27 0.00104 587881.44
4136921.27 0.00098
588190.14 4136921.27 0.00050 588251.88
4136921.27 0.00043
588313.62 4136921.27 0.00039 588375.36
4136921.27 0.00035
588437.10 4136921.27 0.00031 587387.52
4136974.38 0.00079
587449.26 4136974.38 0.00113 587511.00
4136974.38 0.00158
587572.74 4136974.38 0.00198 587634.48

```
4136974.38        0.00180
         587696.22    4136974.38        0.00122                             587757.96
4136974.38        0.00086
         587819.70    4136974.38        0.00073                             587881.44
4136974.38        0.00067
         588190.14    4136974.38        0.00043                             588251.88
4136974.38        0.00039
         588313.62    4136974.38        0.00035                             588375.36
4136974.38        0.00031
         588437.10    4136974.38        0.00028                             587387.52
4137027.49        0.00088
         587449.26    4137027.49        0.00115                             587511.00
4137027.49        0.00141
         587572.74    4137027.49        0.00150                             587634.48
4137027.49        0.00125
         587696.22    4137027.49        0.00091                             587757.96
4137027.49        0.00068
         587819.70    4137027.49        0.00056                             587881.44
4137027.49        0.00050
         588190.14    4137027.49        0.00036                             588251.88
4137027.49        0.00033
↑ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     VOL1        ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         588313.62    4137027.49        0.00031                             588375.36
4137027.49        0.00028
         588437.10    4137027.49        0.00026                             587449.26
4137080.60        0.00105
         587511.00    4137080.60        0.00117                             587572.74
```

```
4137080.60        0.00113
         587634.48    4137080.60        0.00093                    587696.22
4137080.60        0.00071
         587757.96    4137080.60        0.00055                    587819.70
4137080.60        0.00046
         587881.44    4137080.60        0.00040                    588190.14
4137080.60        0.00030
         588251.88    4137080.60        0.00029                    588313.62
4137080.60        0.00027
         588375.36    4137080.60        0.00025                    588437.10
4137080.60        0.00023
         587449.26    4137133.71        0.00091                    587511.00
4137133.71        0.00094
         587572.74    4137133.71        0.00086                    587634.48
4137133.71        0.00072
         587696.22    4137133.71        0.00057                    587757.96
4137133.71        0.00046
         588190.14    4137133.71        0.00025                    588251.88
4137133.71        0.00024
         588313.62    4137133.71        0.00023                    588375.36
4137133.71        0.00021
         588437.10    4137133.71        0.00020                    587449.26
4137186.82        0.00078
         587511.00    4137186.82        0.00076                    587572.74
4137186.82        0.00068
         587634.48    4137186.82        0.00058                    587757.96
4137186.82        0.00039
         587819.70    4137186.82        0.00033                    587881.44
4137186.82        0.00029
         587943.18    4137186.82        0.00026                    588004.92
4137186.82        0.00024
         588066.66    4137186.82        0.00023                    588128.40
4137186.82        0.00022
         588190.14    4137186.82        0.00021                    588313.62
4137186.82        0.00019
         588375.36    4137186.82        0.00018                    587634.48
4137239.93        0.00047
         587696.22    4137239.93        0.00040                    587757.96
4137239.93        0.00033
         587819.70    4137239.93        0.00029                    587881.44
4137239.93        0.00025
         587943.18    4137239.93        0.00023                    588004.92
4137239.93        0.00021
         588066.66    4137239.93        0.00020                    588128.40
4137239.93        0.00019
         588190.14    4137239.93        0.00018                    588251.88
4137239.93        0.00017
         588313.62    4137239.93        0.00017                    588375.36
```

```
4137239.93        0.00016
         587696.22    4137293.04        0.00034                      587757.96
4137293.04        0.00029
         587819.70    4137293.04        0.00025                      587881.44
4137293.04        0.00022
         587943.18    4137293.04        0.00020                      588004.92
4137293.04        0.00018
         588066.66    4137293.04        0.00017                      588128.40
4137293.04        0.00016
         588190.14    4137293.04        0.00016                      588251.88
4137293.04        0.00015
         588313.62    4137293.04        0.00015                      587757.96
4137346.15        0.00025
         587819.70    4137346.15        0.00022                      587881.44
4137346.15        0.00020
         587943.18    4137346.15        0.00018                      588004.92
4137346.15        0.00016
         588066.66    4137346.15        0.00015                      588128.40
4137346.15        0.00014
         588190.14    4137346.15        0.00014                      587881.44
4137399.26        0.00018
         587943.18    4137399.26        0.00016                      588004.92
4137399.26        0.00015
         588066.66    4137399.26        0.00014                      588128.40
4137399.26        0.00013
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                           ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
        587572.74   4136390.17        0.02181  (09012318)                587634.48
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4136390.17        0.02249  (11011321)
       587696.22   4136390.17        0.02246  (10121101)                587757.96
4136390.17        0.02022  (10121104)
       587819.70   4136390.17        0.01964  (10121619)                587881.44
4136390.17        0.01874  (10010518)
       587943.18   4136390.17        0.01766  (13012018)                588066.66
4136390.17        0.01519  (11012824)
       588128.40   4136390.17        0.01418  (10020218)                588190.14
4136390.17        0.01282  (10020123)
       587511.00   4136443.28        0.02218  (10022821)                587572.74
4136443.28        0.02394  (13011403)
       587634.48   4136443.28        0.02470  (11011321)                587696.22
4136443.28        0.02492  (10121101)
       587757.96   4136443.28        0.02231  (10120218)                587819.70
4136443.28        0.02162  (10120902)
       587881.44   4136443.28        0.02043  (11122623)                587943.18
4136443.28        0.01910  (11122621)
       588004.92   4136443.28        0.01774  (09022820)                588066.66
4136443.28        0.01640  (10121105)
       588128.40   4136443.28        0.01503  (10020123)                588190.14
4136443.28        0.01369  (13012521)
       588251.88   4136443.28        0.01264  (13020206)                587387.52
4136496.39        0.02176  (10121702)
       587449.26   4136496.39        0.02323  (13121607)                587511.00
4136496.39        0.02513  (10022821)
       587572.74   4136496.39        0.02624  (12021920)                587634.48
4136496.39        0.02770  (09022718)
       587696.22   4136496.39        0.02785  (10121101)                587757.96
4136496.39        0.02529  (13122917)
       587819.70   4136496.39        0.02422  (09011017)                587881.44
4136496.39        0.02257  (13012018)
       587943.18   4136496.39        0.02086  (11011519)                588004.92
4136496.39        0.01907  (10121105)
       588066.66   4136496.39        0.01705  (10020123)                588128.40
4136496.39        0.01576  (11011419)
       588190.14   4136496.39        0.01449  (12120523)                588251.88
4136496.39        0.01304  (09011919)
       587387.52   4136549.50        0.02336  (09122722)                587449.26
4136549.50        0.02505  (10121702)
       587511.00   4136549.50        0.02763  (11122717)                587572.74
4136549.50        0.02911  (09010105)
       587634.48   4136549.50        0.03099  (10011019)                587696.22
4136549.50        0.03124  (10121101)
       587757.96   4136549.50        0.02844  (10010120)                587819.70
4136549.50        0.02700  (12021804)
       587881.44   4136549.50        0.02494  (11122621)                587943.18
4136549.50        0.02273  (10121105)
       588004.92   4136549.50        0.02045  (10020123)                588066.66
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 4136549.50        0.01854  (11011419)
       588128.40   4136549.50        0.01666  (12120523)                588251.88
 4136549.50        0.01193  (09011919)
       588313.62   4136549.50        0.00930  (09011919)                587387.52
 4136602.61        0.02502  (09020421)
       587449.26   4136602.61        0.02754  (09122722)                587511.00
 4136602.61        0.02953  (13121607)
       587572.74   4136602.61        0.03275  (10022821)                587634.48
 4136602.61        0.03474  (09012318)
       587696.22   4136602.61        0.03517  (10121101)                587757.96
 4136602.61        0.03220  (10121619)
       587819.70   4136602.61        0.03035  (13012018)                587881.44
 4136602.61        0.02766  (10022219)
       588066.66   4136602.61        0.01944  (09011919)                588128.40
 4136602.61        0.01595  (09011919)
       588190.14   4136602.61        0.01213  (09011919)                588251.88
 4136602.61        0.01057  (13120118)
       588313.62   4136602.61        0.00954  (13120118)                588375.36
 4136602.61        0.00854  (10010519)
       587264.04   4136655.72        0.01727  (09020804)                587387.52
 4136655.72        0.02301  (10062605)
       587449.26   4136655.72        0.02938  (12120806)                587511.00
 4136655.72        0.03295  (09122722)
       587572.74   4136655.72        0.03595  (13121607)                587634.48
 4136655.72        0.03843  (12021920)
       587696.22   4136655.72        0.03924  (10121101)                588004.92
 4136655.72        0.02234  (09011919)
       588066.66   4136655.72        0.01646  (09011919)                588128.40
 4136655.72        0.01406  (13120118)
       588190.14   4136655.72        0.01230  (13120118)                588251.88
 4136655.72        0.01085  (12120408)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                         ***        15:24:21

                                    PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     VOL1        ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **
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X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00971	(09121718)	588375.36	4136655.72	0.00874	(12012919)
587264.04	4136708.83	0.01742	(11111107)	587387.52	4136708.83	0.02310	(09020804)
587449.26	4136708.83	0.02603	(11031307)	588004.92	4136708.83	0.01966	(13120118)
588066.66	4136708.83	0.01674	(12120408)	588128.40	4136708.83	0.01446	(12012919)
588190.14	4136708.83	0.01261	(12020520)	588251.88	4136708.83	0.01107	(09022821)
588313.62	4136708.83	0.00995	(09022821)	588375.36	4136708.83	0.00891	(09022821)
587387.52	4136761.94	0.02325	(10050623)	587449.26	4136761.94	0.02691	(11032801)
587511.00	4136761.94	0.03174	(12101522)	587572.74	4136761.94	0.03717	(11031307)
588066.66	4136761.94	0.01715	(09022821)	588128.40	4136761.94	0.01455	(13012622)
588190.14	4136761.94	0.01272	(12022307)	588251.88	4136761.94	0.01122	(09011920)
588313.62	4136761.94	0.01003	(09011920)	588375.36	4136761.94	0.00892	(09011920)
587325.78	4136815.05	0.02073	(10122421)	587387.52	4136815.05	0.02383	(10122421)
587449.26	4136815.05	0.02799	(10122421)	587511.00	4136815.05	0.03308	(10122421)
587572.74	4136815.05	0.03885	(10122421)	587325.78	4136868.16	0.02047	(11011919)
587387.52	4136868.16	0.02359	(11011919)	587449.26	4136868.16	0.02738	(09022822)
587511.00	4136868.16	0.03232	(12121102)	587572.74	4136868.16	0.03794	(11121222)
587757.96	4136868.16	0.05647	(11032318)	587819.70	4136868.16	0.03400	(13013123)
587881.44	4136868.16	0.02786	(12020420)	588190.14	4136868.16	0.01264	(10121120)
588251.88	4136868.16	0.01113	(10121120)	588313.62	4136868.16	0.00993	(10121120)
588375.36	4136868.16	0.00887	(13122219)	588437.10	4136868.16	0.00804	(13122219)
587325.78	4136921.27	0.01970	(09022822)	587387.52	4136921.27	0.02262	(10120221)
587449.26	4136921.27	0.02595	(11121222)	587511.00			

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 4136921.27        0.03104  (09022823)
       587572.74   4136921.27        0.03553  (10020405)                587634.48
 4136921.27        0.03915  (10022823)
       587696.22   4136921.27        0.03911  (13011604)                587757.96
 4136921.27        0.03302  (10121321)
       587819.70   4136921.27        0.02939  (11012522)                587881.44
 4136921.27        0.02623  (13122908)
       588190.14   4136921.27        0.01233  (12120920)                588251.88
 4136921.27        0.01076  (10122720)
       588313.62   4136921.27        0.00974  (10122720)                588375.36
 4136921.27        0.00879  (11021121)
       588437.10   4136921.27        0.00792  (11021121)                587387.52
 4136974.38        0.02129  (11012203)
       587449.26   4136974.38        0.02490  (10120502)                587511.00
 4136974.38        0.02833  (10020405)
       587572.74   4136974.38        0.03200  (10121006)                587634.48
 4136974.38        0.03353  (10020307)
       587696.22   4136974.38        0.03349  (13011604)                587757.96
 4136974.38        0.02811  (12010722)
       587819.70   4136974.38        0.02604  (09011720)                587881.44
 4136974.38        0.02254  (11012522)
       588190.14   4136974.38        0.01202  (11020620)                588251.88
 4136974.38        0.01060  (12020420)
       588313.62   4136974.38        0.00955  (13013119)                588375.36
 4136974.38        0.00853  (13013119)
       588437.10   4136974.38        0.00775  (12120920)                587387.52
 4137027.49        0.02017  (12020823)
       587449.26   4137027.49        0.02261  (10020405)                587511.00
 4137027.49        0.02537  (10120722)
       587572.74   4137027.49        0.02784  (11020924)                587634.48
 4137027.49        0.02880  (11022824)
       587696.22   4137027.49        0.02891  (13011604)                587757.96
 4137027.49        0.02406  (10011423)
       587819.70   4137027.49        0.02238  (10121321)                587881.44
 4137027.49        0.01992  (10011323)
       588190.14   4137027.49        0.01141  (09011921)                588251.88
 4137027.49        0.01024  (09121720)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  15
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     VOL1        ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4137027.49	0.00945	(11020620)	588375.36	4137027.49	0.00836	(11020620)
588437.10	4137027.49	0.00762	(12020420)	587449.26	4137080.60	0.02036	(10120722)
587511.00	4137080.60	0.02244	(10022307)	587572.74	4137080.60	0.02422	(10012401)
587634.48	4137080.60	0.02485	(13020322)	587696.22	4137080.60	0.02475	(09121201)
587757.96	4137080.60	0.02049	(10021722)	587819.70	4137080.60	0.01922	(11091922)
587881.44	4137080.60	0.01747	(09011720)	588190.14	4137080.60	0.01081	(13012306)
588251.88	4137080.60	0.00986	(10010824)	588313.62	4137080.60	0.00903	(09011921)
588375.36	4137080.60	0.00820	(09121720)	588437.10	4137080.60	0.00758	(11020620)
587449.26	4137133.71	0.01847	(10121006)	587511.00	4137133.71	0.01971	(11020924)
587572.74	4137133.71	0.02092	(10020508)	587634.48	4137133.71	0.02167	(11121801)
587696.22	4137133.71	0.02157	(09121201)	587757.96	4137133.71	0.01762	(10021722)
588190.14	4137133.71	0.00984	(13122908)	588251.88	4137133.71	0.00921	(13122908)
588313.62	4137133.71	0.00837	(13022607)	588375.36	4137133.71	0.00766	(10010824)
588437.10	4137133.71	0.00711	(09011921)	587449.26	4137186.82	0.01675	(09020524)
587511.00	4137186.82	0.01766	(09120506)	587572.74	4137186.82	0.01842	(09120504)
587634.48	4137186.82	0.01904	(12120404)	587757.96	4137186.82	0.01527	(09022024)
587819.70	4137186.82	0.01476	(11020621)	587881.44	4137186.82	0.01375	(11020219)
587943.18	4137186.82	0.01268	(09022007)	588004.92	4137186.82	0.01181	(10011323)
588066.66	4137186.82	0.01082	(10022221)	588128.40			

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 4137186.82        0.00999  (11012522)
       588190.14   4137186.82        0.00900  (10110319)                588313.62
 4137186.82        0.00799  (13122908)
       588375.36   4137186.82        0.00739  (13012306)                587634.48
 4137239.93        0.01663  (12120404)
       587696.22   4137239.93        0.01658  (09121201)                587757.96
 4137239.93        0.01348  (13021422)
       587819.70   4137239.93        0.01289  (10011423)                587881.44
 4137239.93        0.01227  (09122519)
       587943.18   4137239.93        0.01158  (10121321)                588004.92
 4137239.93        0.01078  (09011720)
       588066.66   4137239.93        0.00995  (10011323)                588128.40
 4137239.93        0.00927  (10022221)
       588190.14   4137239.93        0.00858  (11012522)                588251.88
 4137239.93        0.00778  (13100320)
       588313.62   4137239.93        0.00731  (09011421)                588375.36
 4137239.93        0.00697  (13122908)
       587696.22   4137293.04        0.01471  (09121201)                587757.96
 4137293.04        0.01193  (13021422)
       587819.70   4137293.04        0.01153  (13121820)                587881.44
 4137293.04        0.01116  (12010722)
       587943.18   4137293.04        0.01060  (11020219)                588004.92
 4137293.04        0.00974  (09022007)
       588066.66   4137293.04        0.00915  (09011720)                588128.40
 4137293.04        0.00858  (09021208)
       588190.14   4137293.04        0.00801  (10022221)                588251.88
 4137293.04        0.00746  (11012522)
       588313.62   4137293.04        0.00684  (13100320)                587757.96
 4137346.15        0.01064  (13021422)
       587819.70   4137346.15        0.01039  (10021722)                587881.44
 4137346.15        0.01017  (11020621)
       587943.18   4137346.15        0.00961  (11091922)                588004.92
 4137346.15        0.00897  (10121321)
       588066.66   4137346.15        0.00837  (09011720)                588128.40
 4137346.15        0.00793  (12022921)
       588190.14   4137346.15        0.00744  (13122424)                587881.44
 4137399.26        0.00919  (11020621)
       587943.18   4137399.26        0.00875  (12010722)                588004.92
 4137399.26        0.00829  (11020219)
       588066.66   4137399.26        0.00781  (09022007)                588128.40
 4137399.26        0.00745  (09011720)
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  16
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN
```

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): VOL1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
587572.74	4136390.17	0.00482b	(09071124)	587634.48	4136390.17	0.00509b	(09071124)
587696.22	4136390.17	0.00483b	(10070524)	587757.96	4136390.17	0.00447c	(12072224)
587819.70	4136390.17	0.00448c	(10100224)	587881.44	4136390.17	0.00407b	(10100124)
587943.18	4136390.17	0.00384b	(12060824)	588066.66	4136390.17	0.00348b	(12091524)
588128.40	4136390.17	0.00326b	(13102224)	588190.14	4136390.17	0.00326b	(13102224)
587511.00	4136443.28	0.00406b	(12072924)	587572.74	4136443.28	0.00523b	(09071124)
587634.48	4136443.28	0.00594b	(09071124)	587696.22	4136443.28	0.00558b	(10070524)
587757.96	4136443.28	0.00526c	(12072224)	587819.70	4136443.28	0.00518c	(10100224)
587881.44	4136443.28	0.00463b	(10100124)	587943.18	4136443.28	0.00447b	(12060824)
588004.92	4136443.28	0.00405b	(12091524)	588066.66	4136443.28	0.00384b	(12091524)
588128.40	4136443.28	0.00386b	(13102224)	588190.14	4136443.28	0.00363c	(09010824)
588251.88	4136443.28	0.00325c	(09010824)	587387.52	4136496.39	0.00311b	(12122924)
587449.26	4136496.39	0.00401b	(12122924)	587511.00	4136496.39	0.00434b	(12122924)
587572.74	4136496.39	0.00554b	(09071124)	587634.48	4136496.39	0.00698b	(09071124)
587696.22	4136496.39	0.00652b	(10070524)	587757.96	4136496.39	0.00623c	(12072224)
587819.70	4136496.39	0.00585c	(10100224)	587881.44	4136496.39	0.00521b	(12060824)
587943.18	4136496.39	0.00482b	(12060824)	588004.92			

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4136496.39        0.00462b (12091524)
       588066.66   4136496.39        0.00465c (09010824)                588128.40
4136496.39        0.00430c (09010824)
       588190.14   4136496.39        0.00374c (09010824)                588251.88
4136496.39        0.00310c (09010824)
       587387.52   4136549.50        0.00280b (10021924)                587449.26
4136549.50        0.00391b (12122924)
       587511.00   4136549.50        0.00498b (12122924)                587572.74
4136549.50        0.00557b (12072924)
       587634.48   4136549.50        0.00815b (09071124)                587696.22
4136549.50        0.00770b (10070524)
       587757.96   4136549.50        0.00763c (09083124)                587819.70
4136549.50        0.00669b (10100124)
       587881.44   4136549.50        0.00612b (12060824)                587943.18
4136549.50        0.00572b (12091524)
       588004.92   4136549.50        0.00577c (09010824)                588066.66
4136549.50        0.00518c (09010824)
       588128.40   4136549.50        0.00432c (09010824)                588251.88
4136549.50        0.00272c (09010824)
       588313.62   4136549.50        0.00235c (09111824)                587387.52
4136602.61        0.00290b (10062624)
       587449.26   4136602.61        0.00345b (10021924)                587511.00
4136602.61        0.00507b (12122924)
       587572.74   4136602.61        0.00616b (12122924)                587634.48
4136602.61        0.00941b (09071124)
       587696.22   4136602.61        0.00943b (10070524)                587757.96
4136602.61        0.00967c (09083124)
       587819.70   4136602.61        0.00817c (13060824)                587881.44
4136602.61        0.00723b (12091524)
       588066.66   4136602.61        0.00500c (09010824)                588128.40
4136602.61        0.00381c (09010824)
       588190.14   4136602.61        0.00318c (10111024)                588251.88
4136602.61        0.00285c (10111024)
       588313.62   4136602.61        0.00254c (10111024)                588375.36
4136602.61        0.00229c (09111824)
       587264.04   4136655.72        0.00210b (10062624)                587387.52
4136655.72        0.00339b (10062624)
       587449.26   4136655.72        0.00378b (10062624)                587511.00
4136655.72        0.00439b (10021924)
       587572.74   4136655.72        0.00683b (12122924)                587634.48
4136655.72        0.00999b (09071124)
       587696.22   4136655.72        0.01188b (10070524)                588004.92
4136655.72        0.00575c (09010824)
       588066.66   4136655.72        0.00459c (10111024)                588128.40
4136655.72        0.00400c (10111024)
       588190.14   4136655.72        0.00346c (10111024)                588251.88
4136655.72        0.00300c (09111824)
```

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): VOL1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00265c	(09111824)	588375.36	4136655.72	0.00234c	(09111824)
587264.04	4136708.83	0.00197b	(12092024)	587387.52	4136708.83	0.00284b	(10062624)
587449.26	4136708.83	0.00393b	(10062624)	588004.92	4136708.83	0.00606c	(10111024)
588066.66	4136708.83	0.00498c	(10111024)	588128.40	4136708.83	0.00411c	(10111024)
588190.14	4136708.83	0.00359c	(13012724)	588251.88	4136708.83	0.00321c	(13012724)
588313.62	4136708.83	0.00289c	(13012724)	588375.36	4136708.83	0.00259c	(13012724)
587387.52	4136761.94	0.00283b	(11062424)	587449.26	4136761.94	0.00347b	(11062424)
587511.00	4136761.94	0.00428b	(11062424)	587572.74	4136761.94	0.00608b	(10062624)
588066.66	4136761.94	0.00535c	(13012724)	588128.40	4136761.94	0.00455c	(13012724)
588190.14	4136761.94	0.00394c	(13012724)	588251.88	4136761.94	0.00344c	(13012724)
588313.62	4136761.94	0.00304c	(13012724)	588375.36	4136761.94	0.00267c	(13012724)
587325.78	4136815.05	0.00218c	(09051124)	587387.52	4136815.05	0.00262c	(09051124)
587449.26	4136815.05	0.00317c	(09051124)	587511.00	4136815.05	0.00393b	(11062424)
587572.74	4136815.05	0.00513b	(11062424)	587325.78			

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4136868.16        0.00229c (09051124)
       587387.52   4136868.16        0.00273c (12112724)              587449.26
4136868.16        0.00379c (12122824)
       587511.00   4136868.16        0.00569c (12122824)              587572.74
4136868.16        0.00973b (13111924)
       587757.96   4136868.16        0.01080b (10033024)              587819.70
4136868.16        0.01006b (09112324)
       587881.44   4136868.16        0.00813b (13120424)              588190.14
4136868.16        0.00365b (13011024)
       588251.88   4136868.16        0.00317b (13011024)              588313.62
4136868.16        0.00279b (13011024)
       588375.36   4136868.16        0.00246b (13011024)              588437.10
4136868.16        0.00219b (13011024)
       587325.78   4136921.27        0.00302c (12122824)              587387.52
4136921.27        0.00401c (12122824)
       587449.26   4136921.27        0.00530c (12122824)              587511.00
4136921.27        0.00822b (13111924)
       587572.74   4136921.27        0.01379b (13111924)              587634.48
4136921.27        0.01477b (13111924)
       587696.22   4136921.27        0.01129b (12032624)              587757.96
4136921.27        0.00656b (09032124)
       587819.70   4136921.27        0.00608b (10033024)              587881.44
4136921.27        0.00645b (09112324)
       588190.14   4136921.27        0.00356b (13120424)              588251.88
4136921.27        0.00313b (13120424)
       588313.62   4136921.27        0.00280b (13120424)              588375.36
4136921.27        0.00249b (13120424)
       588437.10   4136921.27        0.00222b (13011024)              587387.52
4136974.38        0.00436c (12122824)
       587449.26   4136974.38        0.00654b (13111924)              587511.00
4136974.38        0.00963b (13111924)
       587572.74   4136974.38        0.01181b (13111924)              587634.48
4136974.38        0.00972b (11112224)
       587696.22   4136974.38        0.00802b (12032624)              587757.96
4136974.38        0.00523c (10112124)
       587819.70   4136974.38        0.00431c (10112124)              587881.44
4136974.38        0.00401b (09112324)
       588190.14   4136974.38        0.00302b (13120424)              588251.88
4136974.38        0.00282b (13120424)
       588313.62   4136974.38        0.00260b (13120424)              588375.36
4136974.38        0.00236b (13120424)
       588437.10   4136974.38        0.00216b (13120424)              587387.52
4137027.49        0.00523b (13111924)
       587449.26   4137027.49        0.00711b (13111924)              587511.00
4137027.49        0.00879b (13111924)
       587572.74   4137027.49        0.00862b (13111924)              587634.48
4137027.49        0.00760b (12022724)
       587696.22   4137027.49        0.00626c (13111624)              587757.96
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 4137027.49        0.00440c (10112124)
       587819.70   4137027.49       0.00361c (10112124)                587881.44
 4137027.49        0.00300c (10112124)
       588190.14   4137027.49       0.00258c (12110924)                588251.88
 4137027.49        0.00227c (12110924)
↑ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***       15:24:21

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     VOL1        ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                     **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
       588313.62   4137027.49       0.00220b (13120424)                588375.36
 4137027.49        0.00207b (13120424)
       588437.10   4137027.49       0.00197b (13120424)                587449.26
 4137080.60        0.00668b (13111924)
       587511.00   4137080.60       0.00717b (13111924)                587572.74
 4137080.60        0.00682b (11112224)
       587634.48   4137080.60       0.00615c (13111624)                587696.22
 4137080.60        0.00518c (13111624)
       587757.96   4137080.60       0.00370c (10112124)                587819.70
 4137080.60        0.00304c (10112124)
       587881.44   4137080.60       0.00261c (10112124)                588190.14
 4137080.60        0.00243b (09112324)
       588251.88   4137080.60       0.00222b (09112324)                588313.62
 4137080.60        0.00197c (12110924)
       588375.36   4137080.60       0.00176c (12110924)                588437.10
 4137080.60        0.00166b (13120424)
       587449.26   4137133.71       0.00579b (13111924)                587511.00
 4137133.71        0.00563b (10012224)
       587572.74   4137133.71       0.00564b (12022724)                587634.48
 4137133.71        0.00533c (13111624)
       587696.22   4137133.71       0.00439c (13111624)                587757.96
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4137133.71        0.00314c (10112124)
       588190.14   4137133.71        0.00210b (09112324)              588251.88
4137133.71        0.00202b (09112324)
       588313.62   4137133.71        0.00187b (09112324)              588375.36
4137133.71        0.00168b (09112324)
       588437.10   4137133.71        0.00151c (12110924)              587449.26
4137186.82        0.00488b (13111924)
       587511.00   4137186.82        0.00485b (10012224)              587572.74
4137186.82        0.00482b (12022724)
       587634.48   4137186.82        0.00458c (13111624)              587757.96
4137186.82        0.00271c (10112124)
       587819.70   4137186.82        0.00226c (10112124)              587881.44
4137186.82        0.00197c (10112124)
       587943.18   4137186.82        0.00176c (10112124)              588004.92
4137186.82        0.00158b (11120224)
       588066.66   4137186.82        0.00165b (13013024)              588128.40
4137186.82        0.00163b (13013024)
       588190.14   4137186.82        0.00167b (09112324)              588313.62
4137186.82        0.00171b (09112324)
       588375.36   4137186.82        0.00161b (09112324)              587634.48
4137239.93        0.00394c (13111624)
       587696.22   4137239.93        0.00323c (13111624)              587757.96
4137239.93        0.00235c (10112124)
       587819.70   4137239.93        0.00199c (10112124)              587881.44
4137239.93        0.00173c (10112124)
       587943.18   4137239.93        0.00156c (10112124)              588004.92
4137239.93        0.00142b (11120224)
       588066.66   4137239.93        0.00131b (13013024)              588128.40
4137239.93        0.00141b (13013024)
       588190.14   4137239.93        0.00139b (13013024)              588251.88
4137239.93        0.00139b (09112324)
       588313.62   4137239.93        0.00146b (09112324)              588375.36
4137239.93        0.00146b (09112324)
       587696.22   4137293.04        0.00281c (13111624)              587757.96
4137293.04        0.00206c (10112124)
       587819.70   4137293.04        0.00177c (10112124)              587881.44
4137293.04        0.00155c (10112124)
       587943.18   4137293.04        0.00140c (10112124)              588004.92
4137293.04        0.00127c (10112124)
       588066.66   4137293.04        0.00118b (11120224)              588128.40
4137293.04        0.00116b (13013024)
       588190.14   4137293.04        0.00122b (13013024)              588251.88
4137293.04        0.00120b (13013024)
       588313.62   4137293.04        0.00117b (09112324)              587757.96
4137346.15        0.00182c (10112124)
       587819.70   4137346.15        0.00159c (10112124)              587881.44
4137346.15        0.00139c (10112124)
       587943.18   4137346.15        0.00125c (10112124)              588004.92
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4137346.15 0.00114c (10112124)
588066.66 4137346.15 0.00108b (11120224) 588128.40
4137346.15 0.00101b (11120224)
588190.14 4137346.15 0.00103b (13013024) 587881.44
4137399.26 0.00126c (10112124)
587943.18 4137399.26 0.00113c (10112124) 588004.92
4137399.26 0.00103c (10112124)
588066.66 4137399.26 0.00097b (11120224) 588128.40
4137399.26 0.00093b (11120224)
*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 02/25/20
*** AERMET - VERSION 14134 *** *** 15:24:21

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): VOL1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
587572.74	4136390.17	0.00343b	(12072924)	587634.48	4136390.17	0.00387b	(09051524)
587696.22	4136390.17	0.00386b	(09051524)	587757.96	4136390.17	0.00381c	(09012324)
587819.70	4136390.17	0.00391b	(09090224)	587881.44	4136390.17	0.00359b	(10062624)
587943.18	4136390.17	0.00329c	(10060124)	588066.66	4136390.17	0.00294c	(09010824)
588128.40	4136390.17	0.00268b	(10090224)	588190.14	4136390.17	0.00259b	(13112124)
587511.00	4136443.28	0.00336c	(13060424)	587572.74	4136443.28	0.00390b	(13073124)
587634.48	4136443.28	0.00445b	(11041824)	587696.22	4136443.28	0.00447b	(09051524)
587757.96	4136443.28	0.00454c	(09012324)	587819.70	4136443.28	0.00450b	(10100124)
587881.44	4136443.28	0.00410b	(09091224)	587943.18			

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4136443.28        0.00367b (13071324)
       588004.92   4136443.28        0.00342b (11070624)              588066.66
4136443.28        0.00316b (10090224)
       588128.40   4136443.28        0.00306b (13112124)              588190.14
4136443.28        0.00279c (09122224)
       588251.88   4136443.28        0.00241c (13030424)              587387.52
4136496.39        0.00236b (10090924)
       587449.26   4136496.39        0.00273c (12082124)              587511.00
4136496.39        0.00356b (12081824)
       587572.74   4136496.39        0.00414b (13061524)              587634.48
4136496.39        0.00520b (11041824)
       587696.22   4136496.39        0.00533b (09071124)              587757.96
4136496.39        0.00536b (09053124)
       587819.70   4136496.39        0.00531b (11010724)              587881.44
4136496.39        0.00458b (09091224)
       587943.18   4136496.39        0.00408b (09112824)              588004.92
4136496.39        0.00388c (13030424)
       588066.66   4136496.39        0.00364b (13112124)              588128.40
4136496.39        0.00330b (10112424)
       588190.14   4136496.39        0.00267c (13030424)              588251.88
4136496.39        0.00234b (10090424)
       587387.52   4136549.50        0.00212b (10061724)              587449.26
4136549.50        0.00291b (10090924)
       587511.00   4136549.50        0.00374c (12082124)              587572.74
4136549.50        0.00465c (13060424)
       587634.48   4136549.50        0.00584b (13061524)              587696.22
4136549.50        0.00649b (13082024)
       587757.96   4136549.50        0.00658c (09012324)              587819.70
4136549.50        0.00607c (09083124)
       587881.44   4136549.50        0.00516c (10051824)              587943.18
4136549.50        0.00491b (12081424)
       588004.92   4136549.50        0.00447b (13112124)              588066.66
4136549.50        0.00394c (13030424)
       588128.40   4136549.50        0.00303c (10020724)              588251.88
4136549.50        0.00245b (11070624)
       588313.62   4136549.50        0.00214b (10112424)              587387.52
4136602.61        0.00216c (12080724)
       587449.26   4136602.61        0.00263b (10061724)              587511.00
4136602.61        0.00365b (10090924)
       587572.74   4136602.61        0.00518b (12081824)              587634.48
4136602.61        0.00680c (09010124)
       587696.22   4136602.61        0.00815c (09012324)              587757.96
4136602.61        0.00815b (12090524)
       587819.70   4136602.61        0.00702b (10062624)              587881.44
4136602.61        0.00643b (11070624)
       588066.66   4136602.61        0.00380b (13112124)              588128.40
4136602.61        0.00327b (10090424)
       588190.14   4136602.61        0.00281b (10090424)              588251.88
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4136602.61 0.00236c (10090324)
588313.62 4136602.61 0.00207b (09112324) 588375.36
4136602.61 0.00191b (09112324)
587264.04 4136655.72 0.00137b (10060824) 587387.52
4136655.72 0.00190c (09072924)
587449.26 4136655.72 0.00250c (13052124) 587511.00
4136655.72 0.00343c (12080724)
587572.74 4136655.72 0.00510c (12082124) 587634.48
4136655.72 0.00809b (13061524)
587696.22 4136655.72 0.01080b (09060224) 588004.92
4136655.72 0.00462b (09071724)
588066.66 4136655.72 0.00391b (09071724) 588128.40
4136655.72 0.00326b (09112324)
588190.14 4136655.72 0.00293b (09112324) 588251.88
4136655.72 0.00253b (09111224)

*** AERMOD - VERSION 18081 *** *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w *** 02/25/20
*** AERMET - VERSION 14134 *** *** *** 15:24:21

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE 8TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): VOL1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
588313.62	4136655.72	0.00218c	(13120724)	588375.36	4136655.72	0.00193c	(13121924)
587264.04	4136708.83	0.00133b	(13070524)	587387.52	4136708.83	0.00197c	(12080724)
587449.26	4136708.83	0.00235b	(10063024)	588004.92	4136708.83	0.00494b	(09111224)
588066.66	4136708.83	0.00406c	(13120724)	588128.40	4136708.83	0.00347c	(13121924)
588190.14	4136708.83	0.00301c	(10020724)	588251.88	4136708.83	0.00259b	(09012524)
588313.62	4136708.83	0.00224b	(09012524)	588375.36			

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4136708.83        0.00195b (09012524)
       587387.52   4136761.94        0.00186b (10062624)              587449.26
4136761.94        0.00229c (11052024)
       587511.00   4136761.94        0.00293b (10063024)              587572.74
4136761.94        0.00391b (12092024)
       588066.66   4136761.94        0.00414b (09110824)              588128.40
4136761.94        0.00353b (09110824)
       588190.14   4136761.94        0.00307b (09110824)              588251.88
4136761.94        0.00268c (12030224)
       588313.62   4136761.94        0.00238c (12030224)              588375.36
4136761.94        0.00210b (09041024)
       587325.78   4136815.05        0.00159c (09091724)              587387.52
4136815.05        0.00194b (10102724)
       587449.26   4136815.05        0.00248c (09030324)              587511.00
4136815.05        0.00315b (11062524)
       587572.74   4136815.05        0.00448c (10030324)              587325.78
4136868.16        0.00179c (09082024)
       587387.52   4136868.16        0.00230c (11082024)              587449.26
4136868.16        0.00313c (09122624)
       587511.00   4136868.16        0.00466b (09040824)              587572.74
4136868.16        0.00864b (11091524)
       587757.96   4136868.16        0.00857c (12110924)              587819.70
4136868.16        0.00803b (09062024)
       587881.44   4136868.16        0.00670c (13121924)              588190.14
4136868.16        0.00311b (10110824)
       588251.88   4136868.16        0.00270c (13121924)              588313.62
4136868.16        0.00238c (13121924)
       588375.36   4136868.16        0.00212b (09110824)              588437.10
4136868.16        0.00191b (09110824)
       587325.78   4136921.27        0.00230b (11061924)              587387.52
4136921.27        0.00299c (12111624)
       587449.26   4136921.27        0.00452c (12111624)              587511.00
4136921.27        0.00652m (12122224)
       587572.74   4136921.27        0.01055c (10120824)              587634.48
4136921.27        0.01383m (09110524)
       587696.22   4136921.27        0.00889c (10122624)              587757.96
4136921.27        0.00510c (10033124)
       587819.70   4136921.27        0.00522b (11053024)              587881.44
4136921.27        0.00463b (09062024)
       588190.14   4136921.27        0.00261b (12062424)              588251.88
4136921.27        0.00231c (13012724)
       588313.62   4136921.27        0.00212b (10110824)              588375.36
4136921.27        0.00195b (10110824)
       588437.10   4136921.27        0.00176b (12102624)              587387.52
4136974.38        0.00371c (12111624)
       587449.26   4136974.38        0.00480b (12111924)              587511.00
4136974.38        0.00710b (11022124)
       587572.74   4136974.38        0.00956b (12111924)              587634.48
```

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 4136974.38        0.00874b (10052524)
        587696.22   4136974.38        0.00657c (10122624)                587757.96
 4136974.38        0.00395b (11041324)
        587819.70   4136974.38        0.00360c (12090124)                587881.44
 4136974.38        0.00361c (10111424)
        588190.14   4136974.38        0.00229c (13121924)                588251.88
 4136974.38        0.00215c (12120624)
        588313.62   4136974.38        0.00191c (12110924)                588375.36
 4136974.38        0.00162c (12110924)
        588437.10   4136974.38        0.00151c (12030224)                587387.52
 4137027.49        0.00381b (12111724)
        587449.26   4137027.49        0.00515b (12103124)                587511.00
 4137027.49        0.00667b (10012224)
        587572.74   4137027.49        0.00787c (10012424)                587634.48
 4137027.49        0.00656b (11032124)
        587696.22   4137027.49        0.00520c (10122624)                587757.96
 4137027.49        0.00313b (12032624)
        587819.70   4137027.49        0.00260c (11012924)                587881.44
 4137027.49        0.00267c (10111424)
        588190.14   4137027.49        0.00190c (10031324)                588251.88
 4137027.49        0.00179c (09010324)
↑ *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                        ***        15:24:21

                                   PAGE  21
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                              *** THE   8TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     VOL1        ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
        588313.62   4137027.49        0.00172c (10031324)                588375.36
 4137027.49        0.00156c (10031324)
        588437.10   4137027.49        0.00143c (10031324)                587449.26
 4137080.60        0.00500b (10012224)
        587511.00   4137080.60        0.00596b (10052524)                587572.74
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4137080.60        0.00593c (10012424)
       587634.48   4137080.60        0.00493c (11040424)              587696.22
4137080.60        0.00405c (09040724)
       587757.96   4137080.60        0.00272b (09101424)              587819.70
4137080.60        0.00222c (10030124)
       587881.44   4137080.60        0.00210b (12101124)              588190.14
4137080.60        0.00157c (09010324)
       588251.88   4137080.60        0.00158b (13011024)              588313.62
4137080.60        0.00146c (10031324)
       588375.36   4137080.60        0.00138b (11040324)              588437.10
4137080.60        0.00129c (13110424)
       587449.26   4137133.71        0.00461b (09020524)              587511.00
4137133.71        0.00497b (09050224)
       587572.74   4137133.71        0.00439b (11022424)              587634.48
4137133.71        0.00402b (09101424)
       587696.22   4137133.71        0.00334b (11032124)              587757.96
4137133.71        0.00233c (13111624)
       588190.14   4137133.71        0.00136c (10111424)              588251.88
4137133.71        0.00123c (09010324)
       588313.62   4137133.71        0.00119b (12120924)              588375.36
4137133.71        0.00117b (13021824)
       588437.10   4137133.71        0.00111c (09010324)              587449.26
4137186.82        0.00419b (09020524)
       587511.00   4137186.82        0.00422c (13120624)              587572.74
4137186.82        0.00371b (11032124)
       587634.48   4137186.82        0.00324b (11112224)              587757.96
4137186.82        0.00201b (09021124)
       587819.70   4137186.82        0.00169b (11110124)              587881.44
4137186.82        0.00148b (11110124)
       587943.18   4137186.82        0.00145b (09042624)              588004.92
4137186.82        0.00129b (13030624)
       588066.66   4137186.82        0.00128b (09032124)              588128.40
4137186.82        0.00122b (10033024)
       588190.14   4137186.82        0.00119b (09020124)              588313.62
4137186.82        0.00103c (10030624)
       588375.36   4137186.82        0.00099c (09010324)              587634.48
4137239.93        0.00267b (09101424)
       587696.22   4137239.93        0.00237b (09032124)              587757.96
4137239.93        0.00175b (12111824)
       587819.70   4137239.93        0.00145c (10030124)              587881.44
4137239.93        0.00132b (09032124)
       587943.18   4137239.93        0.00126b (09032124)              588004.92
4137239.93        0.00116c (10032424)
       588066.66   4137239.93        0.00109b (11053024)              588128.40
4137239.93        0.00106b (09022724)
       588190.14   4137239.93        0.00103b (11120224)              588251.88
4137239.93        0.00101c (12090124)
       588313.62   4137239.93        0.00097b (09020124)              588375.36
```

```
 4137239.93         0.00090b (09020124)
       587696.22   4137293.04         0.00203b (09032124)                587757.96
 4137293.04         0.00158c (13020724)
       587819.70   4137293.04         0.00127c (10030124)                587881.44
 4137293.04         0.00122b (12120224)
       587943.18   4137293.04         0.00108b (09042624)                588004.92
 4137293.04         0.00105b (09032124)
       588066.66   4137293.04         0.00094c (13020724)                588128.40
 4137293.04         0.00094b (11053024)
       588190.14   4137293.04         0.00091b (09022724)                588251.88
 4137293.04         0.00088b (11120224)
       588313.62   4137293.04         0.00086c (12090124)                587757.96
 4137346.15         0.00139c (13020724)
       587819.70   4137346.15         0.00114c (09112124)                587881.44
 4137346.15         0.00104c (10032424)
       587943.18   4137346.15         0.00094b (12120224)                588004.92
 4137346.15         0.00090b (09032124)
       588066.66   4137346.15         0.00088c (13020724)                588128.40
 4137346.15         0.00081b (09042624)
       588190.14   4137346.15         0.00082b (11053024)                587881.44
 4137399.26         0.00092c (10030124)
       587943.18   4137399.26         0.00089b (11041324)                588004.92
 4137399.26         0.00081b (11110124)
       588066.66   4137399.26         0.00078b (09032124)                588128.40
 4137399.26         0.00074c (13020724)
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***


                                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                **


                            NETWORK
GROUP ID                          AVERAGE CONC                RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.00478 AT (  587696.22,  4136655.72,
```

```
21.88,    21.88,    0.00)  DC
          2ND HIGHEST VALUE IS       0.00387 AT (  587757.96,  4136602.61,
21.74,    21.74,    0.00)  DC
          3RD HIGHEST VALUE IS       0.00331 AT (  587696.22,  4136602.61,
21.90,    21.90,    0.00)  DC
          4TH HIGHEST VALUE IS       0.00308 AT (  587819.70,  4136602.61,
21.15,    21.15,    0.00)  DC
          5TH HIGHEST VALUE IS       0.00286 AT (  587757.96,  4136549.50,
22.00,    22.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00282 AT (  587634.48,  4136921.27,
20.16,    20.16,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00257 AT (  587819.70,  4136549.50,
21.72,    21.72,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00242 AT (  587696.22,  4136549.50,
22.37,    22.37,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00234 AT (  587572.74,  4136921.27,
20.52,    20.52,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00233 AT (  587634.48,  4136655.72,
21.93,    21.93,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with
Tier 4\Intuitive Campus w ***        02/25/20
 *** AERMET - VERSION  14134 ***   ***
                       ***        15:24:21

                                  PAGE  23
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                    ** CONC OF PM_2.5   IN MICROGRAMS/M**3
               **

                                                      DATE
                                          NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.05647  ON 11032318: AT (  587757.96,
```

4136868.16,   19.69,   19.69,   0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR

↑ *** AERMOD - VERSION 18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w ***   02/25/20
*** AERMET - VERSION 14134 ***   ***
                        ***   15:24:21

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_2.5   IN MICROGRAMS/M**3 **

```
                                                DATE
                                         NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.01477b ON 13111924: AT (  587634.48,
4136921.27,    20.16,    20.16,    0.00)  DC
         HIGH   8TH HIGH VALUE IS       0.01383m ON 09110524: AT (  587634.48,
4136921.27,    20.16,    20.16,    0.00)  DC
```

*** RECEPTOR TYPES: GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR

↑ *** AERMOD - VERSION 18081 ***   *** C:\Lakes\AERMOD View\Intuitive Campus with Tier 4\Intuitive Campus w ***   02/25/20
*** AERMET - VERSION 14134 ***   ***
                        ***   15:24:21

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** Message Summary : AERMOD Model Execution ***

```
 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            1 Warning Message(s)
A Total of        15496 Informational Message(s)

A Total of        43872 Hours Were Processed

A Total of        14061 Calm Hours Identified

A Total of         1435 Missing Hours Identified (  3.27 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
MX W481   43873         MAIN: Data Remaining After End of Year. Number of Hours=
       48

   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	North-South
Side of the Roadway	East
Distance from Roadway	700 feet
Annual Average Daily Traffic (ADT)	19,685

Results

Santa Clara County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.037 ($\mu g/m^3$)

Cancer Risk

1.62 (per million)

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Kifer Road

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	North-South
Side of the Roadway	East
Distance from Roadway	725 feet
Annual Average Daily Traffic (ADT)	31,330

Results

Santa Clara County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.059 ($\mu g/m^3$)

Cancer Risk

2.59 (per million)

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Wolfe Road

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Step 1:
Enter Facility Data

Plant Name	City of Sunnyvale - AT&T Generator
Plant No.	2433

Step 2:
Estimate Distance

What is the distance (m) from the facility boundary to the MEI?	300

Step 3:
Enter Emissions Data

Step 4:
Specify Source Type

Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Note: Default generic distance multiplier used if source is not a generator or gas station.

Step 5:
Read Estimates

Total Cancer Risk	0.003	per 1,000,000
Total Chronic Hazard	0.000	
Total PM2.5 Concentration	0.000	µg/m³

Chemical Name	CAS No. (dashes removed)	Emission (lb/day)	Cancer (# / 1,000,000)	Chronic (index)	Concentration (µg/m3)
Fine Particulate Matter (PM2.5)		4.48E-04			0.00
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compc	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'5-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysene	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(c,g)carbazole	194592	0.00E+00			

	Acetaldehyde	75070	0.00E+00			
	Acetamide	60355	0.00E+00			
	Acrolein	107028	0.00E+00			
	Acrylamide	79061	0.00E+00			
	Acrylic Acid	79107	0.00E+00			
	Acrylonitrile	107131	0.00E+00			
	Allyl chloride	107051	0.00E+00			
	Ammonia	7664417	0.00E+00			
	Aniline	62533	0.00E+00			
	Arsenic	7440382	3.88E-08	8.93E-03	5.24E-04	
	Arsine	7784421	0.00E+00			
	Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00			
	Benz(a)anthracene	56553	0.00E+00			
	Benzene	71432	4.45E-05	5.69E-03	2.80E-05	
	Benzidine	92875	0.00E+00			
	Benzo(a)pyrene	50328	0.00E+00			
	Benzo(b)fluoranthene	205992	0.00E+00			
	Benzo(j)fluoranthene	205823	0.00E+00			
	Benzo(k)fluoranthene	207089	0.00E+00			
	Benzyl Chloride	100447	0.00E+00			
	Beryllium	7440417	2.27E-08	2.44E-04	6.13E-06	
	Bis(2-chloroethyl) Ether	111444				
	Bis(2-chloromethyl) Ether	542881	0.00E+00			
	Cadmium	7440439	9.69E-08	1.86E-03	1.83E-05	
	Caprolactam	105602	0.00E+00			
	Carbon Disulfide	75150	0.00E+00			
	Carbon Monoxide	630080	3.62E-03			
	Carbon Tetrachloride	56235	0.00E+00			
	Carbonyl Sulfide	463581	0.00E+00			
	Chlorinated paraffins (Avg. chain length C12; approx. 6i	108171262	0.00E+00			
	Chlorine	7782505	0.00E+00			
	Chlorine Dioxide	10049044	0.00E+00			
	Chlorite	7758192	0.00E+00			
	Chlorobenzene	108907	0.00E+00			
	Chlorodibromomethane	124481	0.00E+00			
	Chloroethane (Ethyl Chloride)	75003	0.00E+00			
	Chloroform	67663	0.00E+00			
	Chloropicrin	76062	0.00E+00			
	Chromic Trioxide	1333820	0.00E+00			
	Chromium-hexavalent	18540299	2.01E-09	1.44E-03	1.90E-08	
	Barium chromate2	10294403	0.00E+00			
	Calcium chromate2	13765190	0.00E+00			
	Lead chromate2	7758976	0.00E+00			
	Sodium dichromate2	10588019	0.00E+00			
	Strontium chromate2	7789062	0.00E+00			
	CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00			
	Chrysene	218019	0.00E+00			
	Copper	7440508	0.00E+00			
	Copper and Copper Compounds	7440508	0.00E+00			
	Cresol Mixtures	1319773	0.00E+00			
	Cupferron	135206	0.00E+00			
	Cyanide	57125	0.00E+00			
	Di(2-ethylhexyl)phthalate	117817	0.00E+00			
	Dibenz(a-h)acridine	226368	0.00E+00			
	Dibenz(a-h)anthracene	53703	0.00E+00			
	Dibenz(a-j)acridine	224420	0.00E+00			
	Dibenzo(a-e)pyrene	192654	0.00E+00			
	Dibenzo(a-h)pyrene	189640	0.00E+00			
	Dibenzo(a-i)pyrene	189559	0.00E+00			
	Dibenzo(a-l)pyrene	191300	0.00E+00			
	Diesel Exhaust Particulate	85105	0.00E+00			
	Diethanolamine	111422	0.00E+00			
	Dimethylformamide	68122	0.00E+00			
	Direct Black 38 (Technical Grade)	1937377	0.00E+00			
	Direct Blue 6 (Technical Grade)	2602462	0.00E+00			
	Direct Brown 95 (Technical Grade)	16071866	0.00E+00			
	Epichlorohydrin	106898	0.00E+00			
	Ethylbenzene	100414	0.00E+00			
	Ethylene Glycol	107211	0.00E+00			
	Ethylene Glycol Monobutyl Ether	111762	0.00E+00			
	Ethylene Glycol Monoethyl Ether	110805	0.00E+00			
	Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00			
	Ethylene Glycol Monomethyl Ether	109864	0.00E+00			
	Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00			
	Ethylene Oxide	75218	0.00E+00			
	Ethylene Thiourea	96457	0.00E+00			
	Fluorides	1101	0.00E+00			
	Formaldehyde (gas)	50000	3.68E-06	9.88E-05	7.73E-07	
	Glutaraldehyde	111308	0.00E+00			
	Hexachlorobenzene	118741	0.00E+00			
	Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00			
	Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00			
	Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00			
	Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00			
	Hydrazine	302012	0.00E+00			
	Hydrogen Chloride	7647010	0.00E+00			
	Hydrogen Cyanide	74908	0.00E+00			
	Hydrogen Fluoride	7664393	0.00E+00			
	Hydrogen Selenide	7783075	0.00E+00			
	Hydrogen Sulfide	7783064	0.00E+00			
	Indeno(1-2-3-c-d)pyrene	193395	0.00E+00			
	Isophorone	78591	0.00E+00			
	Isopropyl Alcohol	67630	0.00E+00			
	Lead Acetate	301042	0.00E+00			
	Lead and Lead Compounds	7439921	8.22E-08	1.03E-04		
	Lead Phosphate	7446277	0.00E+00			
	Lead Subacetate	1335326	0.00E+00			
	m-CRESOL	108394	0.00E+00			
	m-XYLENE	108383	0.00E+00			
	Maleic Anhydride	108316	0.00E+00			

Manganese & Manganese Compounds	7439965	1.29E-07		2.71E-06	
Mercury (Inorganic)	7439976	2.74E-08		9.59E-06	
Mercuric chloride	7487947	0.00E+00			
Methanol	67561	0.00E+00			
Methyl Bromide	74839	0.00E+00			
Methyl Ethyl Ketone	78933	0.00E+00			
Methyl Isocyanate	624839	0.00E+00			
Methyl Tertiary Butyl Ether	1634044	0.00E+00			
Methylene Chloride (Dichloromethane)	75092	0.00E+00			
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00			
Michlers Ketone	90948	0.00E+00			
n-Hexane	110543	0.00E+00			
n-Nitroso-n-methylethylamine	10595956	0.00E+00			
n-Nitrosodi-n-Butylamine	924163	0.00E+00			
n-Nitrosodi-n-Propylamine	621647	0.00E+00			
n-Nitrosodiethylamine	55185	0.00E+00			
n-Nitrosodimethylamine	62759	0.00E+00			
n-Nitrosodiphenylamine	86306	0.00E+00			
n-Nitrosomorpholine	59892	0.00E+00			
n-Nitrosopiperidine	100754	0.00E+00			
n-Nitrosopyrrolidine	930552	0.00E+00			
Naphthalene	91203	0.00E+00			
Nickel and Nickel Compounds	7440020	1.57E-06	1.83E-03	2.12E-04	
Nickel acetate	373024	0.00E+00			
Nickel carbonate	3333673	0.00E+00			
Nickel carbonyl	13463393	0.00E+00			
Nickel hydroxide	12054487	0.00E+00			
Nickelocene	1271289	0.00E+00			
Nickel Oxide	1313991	0.00E+00			
Nickel Refinery Dust	1146	0.00E+00			
Nickel Subsulfide	12035722	0.00E+00			
Nitric Acid	7697372	0.00E+00			
Nitrogen Dioxide	10102440	0.00E+00			
o-CRESOL	95487	0.00E+00			
o-XYLENE	95476	0.00E+00			
Oleum	8014957	0.00E+00			
Ozone	10028156	0.00E+00			
p-Chloro-o-toluidine	95692	0.00E+00			
p-Cresidine	120718	0.00E+00			
p-CRESOL	106445	0.00E+00			
p-Nitrosodiphenylamine	156105	0.00E+00			
p-XYLENE	106423	0.00E+00			
Pentachlorophenol	87865	0.00E+00			
Perchloroethylene	127184	0.00E+00			
Phenol	108952	0.00E+00			
Phosgene	75445	0.00E+00			
Phosphine	7803512	0.00E+00			
Phosphoric Acid	7664382	0.00E+00			
Phthalic Anhydride	85449	0.00E+00			
Polychlorinated Biphenyls	1336363	0.00E+00			
Potassium Bromate	7758012	0.00E+00			
Propylene	115071	0.00E+00			
Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	3.12E-05			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	0.00E+00			
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values			**0.020**	**0.001**	**0.001**

Step 1: Enter Facility Data	
Plant Name	City of Sunnyvale Corp Yard
Plant No.	106771

Step 4: Specify Source Type	
Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	yes

Note: Default generic distance multiplier used if source is not a generator or gas station.

Step 2: Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	300

Step 5: Read Estimates

Total Cancer Risk	0.011	per 1,000,000
Total Chronic Hazard	0.000	
Total PM2.5 Concentration	0.000	µg/m^3

Step 3: Enter Emissions Data

Chemical Name	CAS No. (dashes removed)	Emission (lb/day)	Cancer (# / 1,000,000)	Chronic (index)	Concentration (µg/m3)
Fine Particulate Matter (PM2.5)		0.00E+00			
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compc	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'5-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysene	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(c,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	0.00E+00			
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00			
Benz(a)anthracene	56553	0.00E+00			
Benzene	71432	5.00E-03	6.39E-01	3.15E-03	
Benzidine	92875	0.00E+00			
Benzo(a)pyrene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(j)fluoranthene	205823	0.00E+00			

Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	0.00E+00			
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542881	0.00E+00			
Cadmium	7440439	0.00E+00			
Caprolactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	0.00E+00			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorodibromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75003	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	0.00E+00			
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			
Sodium dichromate2	10588019	0.00E+00			
Strontium chromate2	7789062	0.00E+00			
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00			
Chrysene	218019	0.00E+00			
Copper	7440508	0.00E+00			
Copper and Copper Compounds	7440508	0.00E+00			
Cresol Mixtures	1319773	0.00E+00			
Cupferron	135206	0.00E+00			
Cyanide	57125	0.00E+00			
Di(2-ethylhexyl)phthalate	117817	0.00E+00			
Dibenz(a-h)acridine	226368	0.00E+00			
Dibenz(a-h)anthracene	53703	0.00E+00			
Dibenz(a-j)acridine	224420	0.00E+00			
Dibenzo(a-e)pyrene	192654	0.00E+00			
Dibenzo(a-h)pyrene	189640	0.00E+00			
Dibenzo(a-i)pyrene	189559	0.00E+00			
Dibenzo(a-l)pyrene	191300	0.00E+00			
Diesel Exhaust Particulate	85105	0.00E+00			
Diethanolamine	111422	0.00E+00			
Dimethylformamide	68122	0.00E+00			
Direct Black 38 (Technical Grade)	1937377	0.00E+00			
Direct Blue 6 (Technical Grade)	2602462	0.00E+00			
Direct Brown 95 (Technical Grade)	16071866	0.00E+00			
Epichlorohydrin	106898	0.00E+00			
Ethylbenzene	100414	6.67E-03	7.42E-02	6.30E-06	
Ethylene Glycol	107211	0.00E+00			
Ethylene Glycol Monobutyl Ether	111762	0.00E+00			
Ethylene Glycol Monoethyl Ether	110805	0.00E+00			
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00			
Ethylene Glycol Monomethyl Ether	109864	0.00E+00			
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00			
Ethylene Oxide	75218	0.00E+00			
Ethylene Thiourea	96457	0.00E+00			
Fluorides	1101	0.00E+00			
Formaldehyde (gas)	50000	0.00E+00			
Glutaraldehyde	111308	0.00E+00			
Hexachlorobenzene	118741	0.00E+00			
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00			
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00			
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00			
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00			
Hydrazine	302012	0.00E+00			
Hydrogen Chloride	7647010	0.00E+00			
Hydrogen Cyanide	74908	0.00E+00			
Hydrogen Fluoride	7664393	0.00E+00			
Hydrogen Selenide	7783075	0.00E+00			
Hydrogen Sulfide	7783064	0.00E+00			
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00			
Isophorone	78591	0.00E+00			
Isopropyl Alcohol	67630	0.00E+00			
Lead Acetate	301042	0.00E+00			
Lead and Lead Compounds	7439921	0.00E+00			
Lead Phosphate	7446277	0.00E+00			
Lead Subacetate	1335326	0.00E+00			
m-CRESOL	108394	0.00E+00			
m-XYLENE	108383	0.00E+00			
Maleic Anhydride	108316	0.00E+00			
Manganese & Manganese Compounds	7439965	0.00E+00			
Mercury (Inorganic)	7439976	0.00E+00			
Mercuric chloride	7487947	0.00E+00			
Methanol	67561	0.00E+00			
Methyl Bromide	74839	0.00E+00			
Methyl Ethyl Ketone	78933	0.00E+00			
Methyl Isocyanate	624839	0.00E+00			
Methyl Tertiary Butyl Ether	1634044	0.00E+00			
Methylene Chloride (Dichloromethane)	75092	0.00E+00			
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00			
Michlers Ketone	90948	0.00E+00			
n-Hexane	110543	1.85E-02		4.99E-06	
n-Nitroso-n-methylethylamine	10595956	0.00E+00			
n-Nitrosodi-n-Butylamine	924163	0.00E+00			
n-Nitrosodi-n-Propylamine	621647	0.00E+00			
n-Nitrosodiethylamine	55185	0.00E+00			
n-Nitrosodimethylamine	62759	0.00E+00			
n-Nitrosodiphenylamine	86306	0.00E+00			

n-Nitrosomorpholine	59892	0.00E+00			
n-Nitrosopiperidine	100754	0.00E+00			
n-Nitrosopyrrolidine	930552	0.00E+00			
Naphthalene	91203	0.00E+00			
Nickel and Nickel Compounds	7440020	0.00E+00			
Nickel acetate	373024	0.00E+00			
Nickel carbonate	3333673	0.00E+00			
Nickel carbonyl	13463393	0.00E+00			
Nickel hydroxide	12054487	0.00E+00			
Nickelocene	1271289	0.00E+00			
Nickel Oxide	1313991	0.00E+00			
Nickel Refinery Dust	1146	0.00E+00			
Nickel Subsulfide	12035722	0.00E+00			
Nitric Acid	7697372	0.00E+00			
Nitrogen Dioxide	10102440	0.00E+00			
o-CRESOL	95487	0.00E+00			
o-XYLENE	95476	0.00E+00			
Oleum	8014957	0.00E+00			
Ozone	10028156	0.00E+00			
p-Chloro-o-toluidine	95692	0.00E+00			
p-Cresidine	120718	0.00E+00			
p-CRESOL	106445	0.00E+00			
p-Nitrosodiphenylamine	156105	0.00E+00			
p-XYLENE	106423	0.00E+00			
Pentachlorophenol	87865	0.00E+00			
Perchloroethylene	127184	0.00E+00			
Phenol	108952	0.00E+00			
Phosgene	75445	0.00E+00			
Phosphine	7803512	0.00E+00			
Phosphoric Acid	7664382	0.00E+00			
Phthalic Anhydride	85449	0.00E+00			
Polychlorinated Biphenyls	1336363	0.00E+00			
Potassium Bromate	7758012	0.00E+00			
Propylene	115071	0.00E+00			
Propylene Glycol Monomethyl Ether	107982	0.00E+00			
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	0.00E+00			
Sulfuric Acid	7664939	0.00E+00			
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	4.50E-02		2.83E-04	
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	3.70E-02		9.99E-05	
Vanadium	7440622	0.00E+00			
TOTAL UNADJUSTED Risk Values			**0.714**	**0.004**	**0.000**

Step 1: Enter Facility Data	
Plant Name	Applied Materials
Plant No.	11002

Step 4: Specify Source Type	
Does facility have only diesel backup generators?	yes
Is this analysis for a gas station?	no

Note: Default generic distance multiplier used if source is not a generator or gas station.

Step 2: Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	300

Step 5: Read Estimates

Total Cancer Risk	1.539	per 1,000,000
Total Chronic Hazard	0.004	
Total PM2.5 Concentration	0.063	µg/m^3

Step 3: Enter Emissions Data

Chemical Name	CAS No. (dashes removed)	Emission (lb/day)	Cancer (# / 1,000,000)	Chronic (index)	Concentration (µg/m3)
Fine Particulate Matter (PM2.5)		8.37E-01			1.58
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compc	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'5-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysene	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(c,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	2.26E-06	5.20E-01	3.05E-02	
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00			
Benz(a)anthracene	56553	0.00E+00			
Benzene	71432	3.64E-03	4.65E-01	2.29E-03	
Benzidine	92875	0.00E+00			
Benzo(a)pyrene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(j)fluoranthene	205823	0.00E+00			

Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	1.54E-06	1.65E-02	4.16E-04	
Bis(2-chloroethyl) Ether	111444				
Bis(2-chloromethyl) Ether	542881	0.00E+00			
Cadmium	7440439	6.55E-06	1.26E-01	1.24E-03	
Caprolactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	6.81E+00			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorodibromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75003	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	1.36E-07	9.74E-02	1.29E-06	
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			
Sodium dichromate2	10588019	0.00E+00			
Strontium chromate2	7789062	0.00E+00			
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00			
Chrysene	218019	0.00E+00			
Copper	7440508	0.00E+00			
Copper and Copper Compounds	7440508	0.00E+00			
Cresol Mixtures	1319773	0.00E+00			
Cupferron	135206	0.00E+00			
Cyanide	57125	0.00E+00			
Di(2-ethylhexyl)phthalate	117817	0.00E+00			
Dibenz(a-h)acridine	226368	0.00E+00			
Dibenz(a-h)anthracene	53703	0.00E+00			
Dibenz(a-j)acridine	224420	0.00E+00			
Dibenzo(a-e)pyrene	192654	0.00E+00			
Dibenzo(a-h)pyrene	189640	0.00E+00			
Dibenzo(a-i)pyrene	189559	0.00E+00			
Dibenzo(a-l)pyrene	191300	0.00E+00			
Diesel Exhaust Particulate	85105	2.60E-02	3.66E+01	9.83E-03	
Diethanolamine	111422	0.00E+00			
Dimethylformamide	68122	0.00E+00			
Direct Black 38 (Technical Grade)	1937377	0.00E+00			
Direct Blue 6 (Technical Grade)	2602462	0.00E+00			
Direct Brown 95 (Technical Grade)	16071866	0.00E+00			
Epichlorohydrin	106898	0.00E+00			
Ethylbenzene	100414	0.00E+00			
Ethylene Glycol	107211	0.00E+00			
Ethylene Glycol Monobutyl Ether	111762	0.00E+00			
Ethylene Glycol Monoethyl Ether	110805	0.00E+00			
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00			
Ethylene Glycol Monomethyl Ether	109864	0.00E+00			
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00			
Ethylene Oxide	75218	0.00E+00			
Ethylene Thiourea	96457	0.00E+00			
Fluorides	1101	0.00E+00			
Formaldehyde (gas)	50000	2.05E-02	5.51E-01	4.30E-03	
Glutaraldehyde	111308	0.00E+00			
Hexachlorobenzene	118741	0.00E+00			
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00			
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00			
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00			
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00			
Hydrazine	302012	0.00E+00			
Hydrogen Chloride	7647010	0.00E+00			
Hydrogen Cyanide	74908	0.00E+00			
Hydrogen Fluoride	7664393	0.00E+00			
Hydrogen Selenide	7783075	0.00E+00			
Hydrogen Sulfide	7783064	0.00E+00			
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00			
Isophorone	78591	0.00E+00			
Isopropyl Alcohol	67630	1.43E+01		3.86E-03	
Lead Acetate	301042	0.00E+00			
Lead and Lead Compounds	7439921	5.56E-06	6.97E-03		
Lead Phosphate	7446277	0.00E+00			
Lead Subacetate	1335326	0.00E+00			
m-CRESOL	108394	0.00E+00			
m-XYLENE	108383	0.00E+00			
Maleic Anhydride	108316	0.00E+00			
Manganese & Manganese Compounds	7439965	8.72E-06		1.83E-04	
Mercury (Inorganic)	7439976	1.85E-06		6.47E-04	
Mercuric chloride	7487947	0.00E+00			
Methanol	67561	0.00E+00			
Methyl Bromide	74839	0.00E+00			
Methyl Ethyl Ketone	78933	0.00E+00			
Methyl Isocyanate	624839	0.00E+00			
Methyl Tertiary Butyl Ether	1634044	0.00E+00			
Methylene Chloride (Dichloromethane)	75092	0.00E+00			
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00			
Michlers Ketone	90948	0.00E+00			
n-Hexane	110543	0.00E+00			
n-Nitroso-n-methylethylamine	10595956	0.00E+00			
n-Nitrosodi-n-Butylamine	924163	0.00E+00			
n-Nitrosodi-n-Propylamine	621647	0.00E+00			
n-Nitrosodiethylamine	55185	0.00E+00			
n-Nitrosodimethylamine	62759	0.00E+00			
n-Nitrosodiphenylamine	86306	0.00E+00			

n-Nitrosomorpholine	59892	0.00E+00			
n-Nitrosopiperidine	100754	0.00E+00			
n-Nitrosopyrrolidine	930552	0.00E+00			
Naphthalene	91203	0.00E+00			
Nickel and Nickel Compounds	7440020	1.06E-04	1.23E-01	1.43E-02	
Nickel acetate	373024	0.00E+00			
Nickel carbonate	3333673	0.00E+00			
Nickel carbonyl	13463393	0.00E+00			
Nickel hydroxide	12054487	0.00E+00			
Nickelocene	1271289	0.00E+00			
Nickel Oxide	1313991	0.00E+00			
Nickel Refinery Dust	1146	0.00E+00			
Nickel Subsulfide	12035722	0.00E+00			
Nitric Acid	7697372	6.84E-08			
Nitrogen Dioxide	10102440	0.00E+00			
o-CRESOL	95487	0.00E+00			
o-XYLENE	95476	0.00E+00			
Oleum	8014957	0.00E+00			
Ozone	10028156	0.00E+00			
p-Chloro-o-toluidine	95692	0.00E+00			
p-Cresidine	120718	0.00E+00			
p-CRESOL	106445	0.00E+00			
p-Nitrosodiphenylamine	156105	0.00E+00			
p-XYLENE	106423	0.00E+00			
Pentachlorophenol	87865	0.00E+00			
Perchloroethylene	127184	0.00E+00			
Phenol	108952	0.00E+00			
Phosgene	75445	0.00E+00			
Phosphine	7803512	0.00E+00			
Phosphoric Acid	7664382	0.00E+00			
Phthalic Anhydride	85449	0.00E+00			
Polychlorinated Biphenyls	1336363	0.00E+00			
Potassium Bromate	7758012	0.00E+00			
Propylene	115071	0.00E+00			
Propylene Glycol Monomethyl Ether	107982	1.15E+01		3.10E-03	
Propylene oxide	75569	0.00E+00			
Selenium	7782492	0.00E+00			
Selenium sulfide	7446346	0.00E+00			
Silica (crystalline, respirable)	7631869	0.00E+00			
Sodium hydroxide	1310732	0.00E+00			
Styrene	100425	0.00E+00			
Sulfates	9960	0.00E+00			
Sulfur Dioxide	7446095	1.54E-01			
Sulfuric Acid	7664939	2.14E-02		4.04E-02	
Sulfur Trioxide	7446719	0.00E+00			
Tertiary-butyl acetate	540885	0.00E+00			
Tetrachloroethylene	127184	0.00E+00			
Thioacetamide	62555	0.00E+00			
Toluene	108883	9.18E-04		5.78E-06	
Toluene Diisocyanates	26471625	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00			
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00			
Trichloroethylene	79016	0.00E+00			
Triethylamine	121448	0.00E+00			
Urethane	51796	0.00E+00			
Vanadium pentoxide	1314621	0.00E+00			
Vinyl acetate	108054	0.00E+00			
Vinyl chloride	75014	0.00E+00			
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00			
Vanadium	7440622	0.00E+00			
	TOTAL UNADJUSTED Risk Values		**38.480**	**0.111**	**1.580**

Step 1: Enter Facility Data	
Plant Name	City of Sunnyvale Corp Yard
Plant No.	15524

Step 4: Specify Source Type	
Does facility have only diesel backup generators?	yes
Is this analysis for a gas station?	no

Note: Default generic distance multiplier used if source is not a generator or gas station.

Step 2: Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	300

Step 5: Read Estimates

Total Cancer Risk	0.037	per 1,000,000
Total Chronic Hazard	0.000	
Total PM2.5 Concentration	0.000	µg/m^3

Step 3: Enter Emissions Data

Chemical Name	CAS No. (dashes removed)	Emission (lb/day)	Cancer (# / 1,000,000)	Chronic (index)	Concentration (µg/m3)
Fine Particulate Matter (PM2.5)		6.33E-04			0.00
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compc	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'5-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysene	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(c,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	5.74E-08	1.32E-02	7.75E-04	
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00			
Benz(a)anthracene	56553	0.00E+00			
Benzene	71432	6.59E-05	8.43E-03	4.15E-05	
Benzidine	92875	0.00E+00			
Benzo(a)pyrene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(j)fluoranthene	205823	0.00E+00			

Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	3.36E-08	3.61E-04	9.07E-06	
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542881	0.00E+00			
Cadmium	7440439	1.43E-07	2.74E-03	2.70E-05	
Caprolactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	1.01E-02			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12; approx. 6	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorodibromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75003	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	2.97E-09	2.13E-03	2.81E-08	
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			
Sodium dichromate2	10588019	0.00E+00			
Strontium chromate2	7789062	0.00E+00			
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00			
Chrysene	218019	0.00E+00			
Copper	7440508	0.00E+00			
Copper and Copper Compounds	7440508	0.00E+00			
Cresol Mixtures	1319773	0.00E+00			
Cupferron	135206	0.00E+00			
Cyanide	57125	0.00E+00			
Di(2-ethylhexyl)phthalate	117817	0.00E+00			
Dibenz(a-h)acridine	226368	0.00E+00			
Dibenz(a-h)anthracene	53703	0.00E+00			
Dibenz(a-j)acridine	224420	0.00E+00			
Dibenzo(a-e)pyrene	192654	0.00E+00			
Dibenzo(a-h)pyrene	189640	0.00E+00			
Dibenzo(a-i)pyrene	189559	0.00E+00			
Dibenzo(a-l)pyrene	191300	0.00E+00			
Diesel Exhaust Particulate	85105	6.33E-04	8.90E-01	2.39E-04	
Diethanolamine	111422	0.00E+00			
Dimethylformamide	68122	0.00E+00			
Direct Black 38 (Technical Grade)	1937377	0.00E+00			
Direct Blue 6 (Technical Grade)	2602462	0.00E+00			
Direct Brown 95 (Technical Grade)	16071866	0.00E+00			
Epichlorohydrin	106898	0.00E+00			
Ethylbenzene	100414	0.00E+00			
Ethylene Glycol	107211	0.00E+00			
Ethylene Glycol Monobutyl Ether	111762	0.00E+00			
Ethylene Glycol Monoethyl Ether	110805	0.00E+00			
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00			
Ethylene Glycol Monomethyl Ether	109864	0.00E+00			
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00			
Ethylene Oxide	75218	0.00E+00			
Ethylene Thiourea	96457	0.00E+00			
Fluorides	1101	0.00E+00			
Formaldehyde (gas)	50000	5.45E-06	1.46E-04	1.14E-06	
Glutaraldehyde	111308	0.00E+00			
Hexachlorobenzene	118741	0.00E+00			
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00			
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00			
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00			
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00			
Hydrazine	302012	0.00E+00			
Hydrogen Chloride	7647010	0.00E+00			
Hydrogen Cyanide	74908	0.00E+00			
Hydrogen Fluoride	7664393	0.00E+00			
Hydrogen Selenide	7783075	0.00E+00			
Hydrogen Sulfide	7783064	0.00E+00			
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00			
Isophorone	78591	0.00E+00			
Isopropyl Alcohol	67630	0.00E+00			
Lead Acetate	301042	0.00E+00			
Lead and Lead Compounds	7439921	1.22E-07	1.53E-04		
Lead Phosphate	7446277	0.00E+00			
Lead Subacetate	1335326	0.00E+00			
m-CRESOL	108394	0.00E+00			
m-XYLENE	108383	0.00E+00			
Maleic Anhydride	108316	0.00E+00			
Manganese & Manganese Compounds	7439965	1.91E-07		4.01E-06	
Mercury (Inorganic)	7439976	4.06E-08		1.42E-05	
Mercuric chloride	7487947	0.00E+00			
Methanol	67561	0.00E+00			
Methyl Bromide	74839	0.00E+00			
Methyl Ethyl Ketone	78933	0.00E+00			
Methyl Isocyanate	624839	0.00E+00			
Methyl Tertiary Butyl Ether	1634044	0.00E+00			
Methylene Chloride (Dichloromethane)	75092	0.00E+00			
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00			
Michlers Ketone	90948	0.00E+00			
n-Hexane	110543	0.00E+00			
n-Nitroso-n-methylethylamine	10595956	0.00E+00			
n-Nitrosodi-n-Butylamine	924163	0.00E+00			
n-Nitrosodi-n-Propylamine	621647	0.00E+00			
n-Nitrosodiethylamine	55185	0.00E+00			
n-Nitrosodimethylamine	62759	0.00E+00			
n-Nitrosodiphenylamine	86306	0.00E+00			

n-Nitrosomorpholine	59892	0.00E+00		
n-Nitrosopiperidine	100754	0.00E+00		
n-Nitrosopyrrolidine	930552	0.00E+00		
Naphthalene	91203	0.00E+00		
Nickel and Nickel Compounds	7440020	2.32E-06	2.70E-03	3.13E-04
Nickel acetate	373024	0.00E+00		
Nickel carbonate	3333673	0.00E+00		
Nickel carbonyl	13463393	0.00E+00		
Nickel hydroxide	12054487	0.00E+00		
Nickelocene	1271289	0.00E+00		
Nickel Oxide	1313991	0.00E+00		
Nickel Refinery Dust	1146	0.00E+00		
Nickel Subsulfide	12035722	0.00E+00		
Nitric Acid	7697372	0.00E+00		
Nitrogen Dioxide	10102440	0.00E+00		
o-CRESOL	95487	0.00E+00		
o-XYLENE	95476	0.00E+00		
Oleum	8014957	0.00E+00		
Ozone	10028156	0.00E+00		
p-Chloro-o-toluidine	95692	0.00E+00		
p-Cresidine	120718	0.00E+00		
p-CRESOL	106445	0.00E+00		
p-Nitrosodiphenylamine	156105	0.00E+00		
p-XYLENE	106423	0.00E+00		
Pentachlorophenol	87865	0.00E+00		
Perchloroethylene	127184	0.00E+00		
Phenol	108952	0.00E+00		
Phosgene	75445	0.00E+00		
Phosphine	7803512	0.00E+00		
Phosphoric Acid	7664382	0.00E+00		
Phthalic Anhydride	85449	0.00E+00		
Polychlorinated Biphenyls	1336363	0.00E+00		
Potassium Bromate	7758012	0.00E+00		
Propylene	115071	0.00E+00		
Propylene Glycol Monomethyl Ether	107982	0.00E+00		
Propylene oxide	75569	0.00E+00		
Selenium	7782492	0.00E+00		
Selenium sulfide	7446346	0.00E+00		
Silica (crystalline, respirable)	7631869	0.00E+00		
Sodium hydroxide	1310732	0.00E+00		
Styrene	100425	0.00E+00		
Sulfates	9960	0.00E+00		
Sulfur Dioxide	7446095	2.15E-05		
Sulfuric Acid	7664939	0.00E+00		
Sulfur Trioxide	7446719	0.00E+00		
Tertiary-butyl acetate	540885	0.00E+00		
Tetrachloroethylene	127184	0.00E+00		
Thioacetamide	62555	0.00E+00		
Toluene	108883	0.00E+00		
Toluene Diisocyanates	26471625	0.00E+00		
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00		
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00		
Trichloroethylene	79016	0.00E+00		
Triethylamine	121448	0.00E+00		
Urethane	51796	0.00E+00		
Vanadium pentoxide	1314621	0.00E+00		
Vinyl acetate	108054	0.00E+00		
Vinyl chloride	75014	0.00E+00		
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00		
Vanadium	7440622	0.00E+00		
TOTAL UNADJUSTED Risk Values			**0.920**	**0.001**	**0.001**

Step 1:
Enter Facility Data

Plant Name	**Calliber Collision Center**
Plant No.	**22677**

Step 2:
Estimate Distance

What is the distance (m) from the facility boundary to the MEI?	**300**

Step 3:
Enter Emissions Data

Step 4:
Specify Source Type

Does facility have only diesel backup generators?	**no**
Is this analysis for a gas station?	**no**

Note: Default generic distance multiplier used if source is not a generator or gas station.

Step 5:
Read Estimates

Total Cancer Risk		**0.000**	per 1,000,000
Total Chronic Hazard		**0.000**	
Total PM2.5	**Concentration**	**0.000**	µg/m^3

Chemical Name	CAS No.	Rate	Risk	Hazard	Concentration
	(dashes removed)	(lb/day)	(# / 1,000,000)	(index)	(µg/m3)
Fine Particulate Matter (PM2.5)		0.00E+00			
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2',3,4,4',5-PeCB	65510443	0.00E+00			
2,3',4,4',5,5'-HxCB	52663726	0.00E+00			
2,3',4,4',5-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compou	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'5-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminoazobenzene	60117	0.00E+00			
4-Nitropyrene	57835924	0.00E+00			
5-Methylchrysene	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysene	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(c,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	0.00E+00			
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214	0.00E+00			

Benz(a)anthracene	56553	0.00E+00		
Benzene	71432	0.00E+00		
Benzidine	92875	0.00E+00		
Benzo(a)pyrene	50328	0.00E+00		
Benzo(b)fluoranthene	205992	0.00E+00		
Benzo(j)fluoranthene	205823	0.00E+00		
Benzo(k)fluoranthene	207089	0.00E+00		
Benzyl Chloride	100447	0.00E+00		
Beryllium	7440417	0.00E+00		
Bis(2-chloroethyl) Ether	111444	0.00E+00		
Bis(2-chloromethyl) Ether	542881	0.00E+00		
Cadmium	7440439	0.00E+00		
Caprolactam	105602	0.00E+00		
Carbon Disulfide	75150	0.00E+00		
Carbon Monoxide	630080	0.00E+00		
Carbon Tetrachloride	56235	0.00E+00		
Carbonyl Sulfide	463581	0.00E+00		
Chlorinated paraffins (Avg. chain length C12; approx. 60 p	108171262	0.00E+00		
Chlorine	7782505	0.00E+00		
Chlorine Dioxide	10049044	0.00E+00		
Chlorite	7758192	0.00E+00		
Chlorobenzene	108907	0.00E+00		
Chlorodibromomethane	124481	0.00E+00		
Chloroethane (Ethyl Chloride)	75003	0.00E+00		
Chloroform	67663	0.00E+00		
Chloropicrin	76062	0.00E+00		
Chromic Trioxide	1333820	0.00E+00		
Chromium-hexavalent	18540299	0.00E+00		
Barium chromate2	10294403	0.00E+00		
Calcium chromate2	13765190	0.00E+00		
Lead chromate2	7758976	0.00E+00		
Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1319773	0.00E+00		
Cupferron	135206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz(a-h)acridine	226368	0.00E+00		
Dibenz(a-h)anthracene	53703	0.00E+00		
Dibenz(a-j)acridine	224420	0.00E+00		
Dibenzo(a-e)pyrene	192654	0.00E+00		
Dibenzo(a-h)pyrene	189640	0.00E+00		
Dibenzo(a-i)pyrene	189559	0.00E+00		
Dibenzo(a-l)pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	0.00E+00		
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		
Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		
Ethylene Thiourea	96457	0.00E+00		
Fluorides	1101	0.00E+00		
Formaldehyde (gas)	50000	0.00E+00		
Glutaraldehyde	111308	0.00E+00		
Hexachlorobenzene	118741	0.00E+00		
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00		
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00		
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00		
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00		
Hydrazine	302012	0.00E+00		
Hydrogen Chloride	7647010	0.00E+00		
Hydrogen Cyanide	74908	0.00E+00		
Hydrogen Fluoride	7664393	0.00E+00		
Hydrogen Selenide	7783075	0.00E+00		
Hydrogen Sulfide	7783064	0.00E+00		
Indeno(1-2-3-c-d)pyrene	193395	0.00E+00		
Isophorone	78591	0.00E+00		
Isopropyl Alcohol	67630	2.83E-01	7.64E-05	
Lead Acetate	301042	0.00E+00		
Lead and Lead Compounds	7439921	0.00E+00		
Lead Phosphate	7446277	0.00E+00		
Lead Subacetate	1335326	0.00E+00		
m-CRESOL	108394	0.00E+00		
m-XYLENE	108383	0.00E+00		
Maleic Anhydride	108316	0.00E+00		
Manganese & Manganese Compounds	7439965	0.00E+00		
Mercury (Inorganic)	7439976	0.00E+00		
Mercuric chloride	7487947	0.00E+00		
Methanol	67561	0.00E+00		
Methyl Bromide	74839	0.00E+00		

Methyl Ethyl Ketone	78933	0.00E+00		
Methyl Isocyanate	624839	0.00E+00		
Methyl Tertiary Butyl Ether	1634044	0.00E+00		
Methylene Chloride (Dichloromethane)	75092	0.00E+00		
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00		
Michlers Ketone	90948	0.00E+00		
n-Hexane	110543	0.00E+00		
n-Nitroso-n-methylethylamine	10595956	0.00E+00		
n-Nitrosodi-n-Butylamine	924163	0.00E+00		
n-Nitrosodi-n-Propylamine	621647	0.00E+00		
n-Nitrosodiethylamine	55185	0.00E+00		
n-Nitrosodimethylamine	62759	0.00E+00		
n-Nitrosodiphenylamine	86306	0.00E+00		
n-Nitrosomorpholine	59892	0.00E+00		
n-Nitrosopiperidine	100754	0.00E+00		
n-Nitrosopyrrolidine	930552	0.00E+00		
Naphthalene	91203	0.00E+00		
Nickel and Nickel Compounds	7440020	0.00E+00		
Nickel acetate	373024	0.00E+00		
Nickel carbonate	3333673	0.00E+00		
Nickel carbonyl	13463393	0.00E+00		
Nickel hydroxide	12054487	0.00E+00		
Nickelocene	1271289	0.00E+00		
Nickel Oxide	1313991	0.00E+00		
Nickel Refinery Dust	1146	0.00E+00		
Nickel Subsulfide	12035722	0.00E+00		
Nitric Acid	7697372	0.00E+00		
Nitrogen Dioxide	10102440	0.00E+00		
o-CRESOL	95487	0.00E+00		
o-XYLENE	95476	0.00E+00		
Oleum	8014957	0.00E+00		
Ozone	10028156	0.00E+00		
p-Chloro-o-toluidine	95692	0.00E+00		
p-Cresidine	120718	0.00E+00		
p-CRESOL	106445	0.00E+00		
p-Nitrosodiphenylamine	156105	0.00E+00		
p-XYLENE	106423	0.00E+00		
Pentachlorophenol	87865	0.00E+00		
Perchloroethylene	127184	0.00E+00		
Phenol	108952	0.00E+00		
Phosgene	75445	0.00E+00		
Phosphine	7803512	0.00E+00		
Phosphoric Acid	7664382	0.00E+00		
Phthalic Anhydride	85449	0.00E+00		
Polychlorinated Biphenyls	1336363	0.00E+00		
Potassium Bromate	7758012	0.00E+00		
Propylene	115071	0.00E+00		
Propylene Glycol Monomethyl Ether	107982	0.00E+00		
Propylene oxide	75569	0.00E+00		
Selenium	7782492	0.00E+00		
Selenium sulfide	7446346	0.00E+00		
Silica (crystalline, respirable)	7631869	0.00E+00		
Sodium hydroxide	1310732	0.00E+00		
Styrene	100425	0.00E+00		
Sulfates	9960	0.00E+00		
Sulfur Dioxide	7446095	0.00E+00		
Sulfuric Acid	7664939	0.00E+00		
Sulfur Trioxide	7446719	0.00E+00		
Tertiary-butyl acetate	540885	0.00E+00		
Tetrachloroethylene	127184	0.00E+00		
Thioacetamide	62555	0.00E+00		
Toluene	108883	4.04E-01	2.55E-03	
Toluene Diisocyanates	26471625	0.00E+00		
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00		
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00		
Trichloroethylene	79016	0.00E+00		
Triethylamine	121448	0.00E+00		
Urethane	51796	0.00E+00		
Vanadium pentoxide	1314621	0.00E+00		
Vinyl acetate	108054	0.00E+00		
Vinyl chloride	75014	0.00E+00		
Xylenes (technical mixture of m, o, p-isomers)	1330207	2.83E-01	7.64E-04	
Vanadium	7440622	0.00E+00		
TOTAL UNADJUSTED Risk Values		**0.000**	**0.003**	**0.000**

LSAP Update Net Energy and Fuel Use

	Value	Unit
2016 LSAP EIR - Remodel		
Electricity	27,913	MWh/year
Natural Gas	312,983	therm/year
Gasoline	1,018,345	gal/year
Diesel	81,769	gal/year
LSAP Update		
Electricity	40,768	MWh/year
Natural Gas	520,048	therm/year
Gasoline	2,444,031	gal/year
Diesel	196,246	gal/year
Net		
Electricity	12,855	MWh/year
Natural Gas	207,065	therm/year
Gasoline	1,425,686	gal/year
Diesel	114,477	gal/year

LSAP Update Operational Energy Use

Land Use	Natural Gas kBTU/year	Natural Gas therm/year	Electricity kWh/year	Electricity MWh/year	Diesel gallons/year
Apartments Mid Rise	34,023,500	340,235	21,122,700	21,123	
Manufacturing	184,203	1,842	62,028	62	
Office Park	17,769,600	177,696	19,446,000	19,446	
Strip Mall	27,539	275	137,564	138	
Total	**52,004,842**	**520,048**	**40,768,292**	**40,768**	**0**

therm/kbtu 100.000000

LSAP Update Operational Fuel Use

Operational Fuel Use Summary

Fuel Type	Fleet Mix (%)	Gallons per Mile	Annual VMT	Gallons
Gasoline	97.19%	0.03	91,189,218	2,444,031
Diesel	2.81%	0.08		196,246

Notes:

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from CalEEMod output file.

LSAP Update EMFAC
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Gasoline Fuel Consumption 1,000 gallons/day	Diesel Fuel Consumption 1,000 gallons/day
SANTA CL/	2035	All Other Buses	Aggregate	Aggregate	DSL	739.4253804	37522.30898	6211.173195	0	3.481960297
SANTA CL/	2035	LDA	Aggregate	Aggregate	GAS	944590.2126	29626878.96	4432600.393	702.6695044	
SANTA CL/	2035	LDA	Aggregate	Aggregate	DSL	11356.43447	363199.0057	53701.28373	0	5.579856858
SANTA CL/	2035	LDA	Aggregate	Aggregate	ELEC	56253.82444	1876124.899	268063.4805	0	0
SANTA CL/	2035	LDT1	Aggregate	Aggregate	GAS	97513.97275	2806702.07	451244.7228	78.32	
SANTA CL/	2035	LDT1	Aggregate	Aggregate	DSL	12.93768338	375.6291317	59.67404994	0	0.011072821
SANTA CL/	2035	LDT1	Aggregate	Aggregate	ELEC	3086.406605	105607.0382	14838.33264	0	0
SANTA CL/	2035	LDT2	Aggregate	Aggregate	GAS	300939.5467	8711864.336	1394583.386	244.90	
SANTA CL/	2035	LDT2	Aggregate	Aggregate	DSL	2935.351923	87565.38369	13830.02938	0	1.810778144
SANTA CL/	2035	LDT2	Aggregate	Aggregate	ELEC	11422.81603	269495.8505	54852.84765	0	0
SANTA CL/	2035	LHD1	Aggregate	Aggregate	GAS	18625.23873	584705.5475	277488.3054	58.79	
SANTA CL/	2035	LHD1	Aggregate	Aggregate	DSL	17190.56745	558045.9237	216235.7128	0	25.2094821
SANTA CL/	2035	LHD2	Aggregate	Aggregate	GAS	2758.335368	86431.8094	41095.08706	9.92	
SANTA CL/	2035	LHD2	Aggregate	Aggregate	DSL	7046.98479	219584.2125	88642.20356	0	11.23311676
SANTA CL/	2035	MCY	Aggregate	Aggregate	GAS	42571.89475	264772.2067	85143.78949	7.04	
SANTA CL/	2035	MDV	Aggregate	Aggregate	GAS	189058.0048	5359782.676	873372.2613	182.81	
SANTA CL/	2035	MDV	Aggregate	Aggregate	DSL	6519.797711	190479.7959	30591.66665	0	5.141187296
SANTA CL/	2035	MDV	Aggregate	Aggregate	ELEC	7917.423825	189946.5619	38245.27658	0	0.00
SANTA CL/	2035	MH	Aggregate	Aggregate	GAS	2938.595492	27116.20943	293.977093	4.60	
SANTA CL/	2035	MH	Aggregate	Aggregate	DSL	1419.885853	11756.81117	141.9885853	0	1.007773168
SANTA CL/	2035	Motor Coach	Aggregate	Aggregate	DSL	127.2953358	15209.70953	1858.511903	0	1.974773644
SANTA CL/	2035	OBUS	Aggregate	Aggregate	GAS	550.0394682	22707.68189	11005.18968	3.90	
SANTA CL/	2035	PTO	Aggregate	Aggregate	DSL	0	11423.74601	0	0	2.011963804
SANTA CL/	2035	SBUS	Aggregate	Aggregate	GAS	426.596535	17300.3682	1706.38614	1.68	
SANTA CL/	2035	SBUS	Aggregate	Aggregate	DSL	922.3413503	29097.13094	10643.6913	0	3.068724665
SANTA CL/	2035	T6 Ag	Aggregate	Aggregate	DSL	0.229665996	1.298945352	1.010530382	0	0.000150239
SANTA CL/	2035	T6 CAIRP heavy	Aggregate	Aggregate	DSL	52.04695012	8915.386872	759.8854718	0	0.609603909
SANTA CL/	2035	T6 CAIRP small	Aggregate	Aggregate	DSL	26.48787101	1171.848794	386.7229168	0	0.08971242
SANTA CL/	2035	T6 instate construction he	Aggregate	Aggregate	DSL	419.236727	26482.30629	1895.352943	0	2.849672903
SANTA CL/	2035	T6 instate construction sm	Aggregate	Aggregate	DSL	1215.20432	60411.56768	5493.891481	0	5.918901248
SANTA CL/	2035	T6 instate heavy	Aggregate	Aggregate	DSL	2116.850748	214249.8198	24428.16415	0	17.26893099
SANTA CL/	2035	T6 instate small	Aggregate	Aggregate	DSL	6702.142483	292345.781	77341.79503	0	24.75670497
SANTA CL/	2035	T6 OOS heavy	Aggregate	Aggregate	DSL	28.97450299	4993.819148	423.0277437	0	0.341093461
SANTA CL/	2035	T6 OOS small	Aggregate	Aggregate	DSL	14.92406879	656.0732061	217.8914043	0	0.050294329
SANTA CL/	2035	T6 Public	Aggregate	Aggregate	DSL	1009.264446	15690.55008	3061.435482	0	1.722179773
SANTA CL/	2035	T6 utility	Aggregate	Aggregate	DSL	155.2570145	2590.067881	1785.455667	0	0.226272477
SANTA CL/	2035	T6TS	Aggregate	Aggregate	GAS	2242.016953	105720.9394	44858.27519	18.00878186	
SANTA CL/	2035	T7 CAIRP	Aggregate	Aggregate	DSL	918.4992254	194410.0633	13410.08869	0	20.53682462
SANTA CL/	2035	T7 CAIRP construction	Aggregate	Aggregate	DSL	103.9229793	19022.47065	469.8317491	0	2.491211634
SANTA CL/	2035	T7 NNOOS	Aggregate	Aggregate	DSL	1378.083919	236991.0171	20120.02521	0	25.8299191
SANTA CL/	2035	T7 NOOS	Aggregate	Aggregate	DSL	365.4376208	76382.01388	5335.389264	0	8.270937012
SANTA CL/	2035	T7 other port	Aggregate	Aggregate	DSL	140.2462021	23204.95618	1065.871136	0	2.802454244
SANTA CL/	2035	T7 POAK	Aggregate	Aggregate	DSL	1102.305883	174250.6662	8377.524707	0	21.62273655
SANTA CL/	2035	T7 Public	Aggregate	Aggregate	DSL	490.3394801	9939.265239	1487.363088	0	1.583451034
SANTA CL/	2035	T7 Single	Aggregate	Aggregate	DSL	822.4699963	57532.26831	9491.189726	0	7.924603
SANTA CL/	2035	T7 single construction	Aggregate	Aggregate	DSL	633.6359851	47191.25088	2864.643653	0	7.105145983
SANTA CL/	2035	T7 SWCV	Aggregate	Aggregate	DSL	93.85513383	3834.7687	366.0350219	0	1.688139595
SANTA CL/	2035	T7 SWCV	Aggregate	Aggregate	NG	403.4689127	16452.65277	1573.52876	0	0
SANTA CL/	2035	T7 tractor	Aggregate	Aggregate	DSL	2996.465115	364569.7865	38055.10696		37.2917585
SANTA CL/	2035	T7 tractor construction	Aggregate	Aggregate	DSL	526.0895724	38928.62722	2378.430503	0	5.795269627
SANTA CL/	2035	T7 utility	Aggregate	Aggregate	DSL	70.47575432	1428.502612	810.4711747	0	0.192091842
SANTA CL/	2035	T7IS	Aggregate	Aggregate	GAS	8.36045567	971.4170444	167.275997	0.179949193	
SANTA CL/	2035	UBUS	Aggregate	Aggregate	GAS	8.469144159	1066.111669	33.87657664	0.240333397	
SANTA CL/	2035	UBUS	Aggregate	Aggregate	DSL	377.7477568	42131.81085	1510.991027	0	6.304918301
SANTA CL/	2035	UBUS	Aggregate	Aggregate	NG	152.6323962	17023.73907	610.5295848	0	0

TOTAL	53,532,257		1313.06	263.80	33.9	0.03
Total (Gas)	47,616,020				36.3	0.03
Total (Diesel)	3,441,586				13.0	0.08

Annual VMT
91,189,218

	Mix (%)	Miles	Gallons
Gas	97.2%	88,628,898	2,444,031
Diesel	2.8%	2,560,228	196,246

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
All Project Land Uses	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

Gas	97.2%
Diesel	2.8%

2016 LSAP EIR - Remodel - Operational Energy Use

Land Use	Natural Gas kBTU/year	Natural Gas therm/year	Electricity kWh/year	Electricity MWh/year	Diesel gallons/year
Apartments Mid Rise	13,317,000	133,170	8,267,550	8,268	
Manufacturing	184,203	1,842	62,028	62	
Office Park	17,769,600	177,696	19,446,000	19,446	
Strip Mall	27,539	275	137,564	138	
Total	**31,298,342**	**312,983**	**27,913,142**	**27,913**	**0**

therm/kbtu 100.000000

2016 LSAP EIR - Remodel - Operational Fuel Use

Operational Fuel Use Summary

Fuel Type	Fleet Mix (%)	Gallons per Mile	Annual VMT	Gallons
Gasoline	97.19%	0.03	37,995,455	1,018,345
Diesel	2.81%	0.08		81,769

Notes:

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from CalEEMod output file.

2016 LSAP EIR - Remodel - EMFAC
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Gasoline Fuel Consumption 1,000 gallons/day	Diesel Fuel Consumption 1,000 gallons/day
SANTA CL/	2035	All Other Buses	Aggregate	Aggregate	DSL	739.4253804	37522.30898	6211.173195	0	3.481960297
SANTA CL/	2035	LDA	Aggregate	Aggregate	GAS	944590.2126	29626878.96	4432600.393	702.6695044	
SANTA CL/	2035	LDA	Aggregate	Aggregate	DSL	11356.43447	363199.0057	53701.28373	0	5.579856858
SANTA CL/	2035	LDA	Aggregate	Aggregate	ELEC	56253.82444	1876124.899	268063.4805	0	0
SANTA CL/	2035	LDT1	Aggregate	Aggregate	GAS	97513.97275	2806702.07	451244.7228	78.32	
SANTA CL/	2035	LDT1	Aggregate	Aggregate	DSL	12.93768338	375.6291317	59.67404994	0	0.011072821
SANTA CL/	2035	LDT1	Aggregate	Aggregate	ELEC	3086.406605	105607.0382	14838.33264	0	0
SANTA CL/	2035	LDT2	Aggregate	Aggregate	GAS	300939.5467	8711864.336	1394583.386	244.90	
SANTA CL/	2035	LDT2	Aggregate	Aggregate	DSL	2935.351923	87565.38369	13830.02938	0	1.810778144
SANTA CL/	2035	LDT2	Aggregate	Aggregate	ELEC	11422.81603	269495.8505	54852.84765	0	0
SANTA CL/	2035	LHD1	Aggregate	Aggregate	GAS	18625.23873	584705.5475	277488.3054	58.79	
SANTA CL/	2035	LHD1	Aggregate	Aggregate	DSL	17190.56745	558045.9237	216235.7128	0	25.2094821
SANTA CL/	2035	LHD2	Aggregate	Aggregate	GAS	2758.335368	86431.8094	41095.08706	9.92	
SANTA CL/	2035	LHD2	Aggregate	Aggregate	DSL	7046.98479	219584.2125	88642.20356	0	11.23311676
SANTA CL/	2035	MCY	Aggregate	Aggregate	GAS	42571.89475	264772.2067	85143.78949	7.04	
SANTA CL/	2035	MDV	Aggregate	Aggregate	GAS	189058.0048	5359782.676	873372.2613	182.81	
SANTA CL/	2035	MDV	Aggregate	Aggregate	DSL	6519.797711	190479.7959	30591.66665	0	5.141187296
SANTA CL/	2035	MDV	Aggregate	Aggregate	ELEC	7917.423825	189946.5619	38245.27658	0	0.00
SANTA CL/	2035	MH	Aggregate	Aggregate	GAS	2938.595492	27116.20943	293.977093	4.60	
SANTA CL/	2035	MH	Aggregate	Aggregate	DSL	1419.885853	11756.81117	141.9885853	0	1.007773168
SANTA CL/	2035	Motor Coach	Aggregate	Aggregate	DSL	127.2953358	15209.70953	1858.511903	0	1.974773644
SANTA CL/	2035	OBUS	Aggregate	Aggregate	GAS	550.0394682	22707.68189	11005.18968	3.90	
SANTA CL/	2035	PTO	Aggregate	Aggregate	DSL	0	11423.74601	0	0	2.011963804
SANTA CL/	2035	SBUS	Aggregate	Aggregate	GAS	426.596535	17300.3682	1706.38614	1.68	
SANTA CL/	2035	SBUS	Aggregate	Aggregate	DSL	922.3413503	29097.13094	10643.6913	0	3.068724665
SANTA CL/	2035	T6 Ag	Aggregate	Aggregate	DSL	0.229665996	1.298945352	1.010530382	0	0.000150239
SANTA CL/	2035	T6 CAIRP heavy	Aggregate	Aggregate	DSL	52.04695012	8915.386872	759.8854718	0	0.609603909
SANTA CL/	2035	T6 CAIRP small	Aggregate	Aggregate	DSL	26.48787101	1171.848794	386.7229168	0	0.08971242
SANTA CL/	2035	T6 instate construction he	Aggregate	Aggregate	DSL	419.236727	26482.30629	1895.352943	0	2.849672903
SANTA CL/	2035	T6 instate construction sm	Aggregate	Aggregate	DSL	1215.20432	60411.56768	5493.891481	0	5.918901248
SANTA CL/	2035	T6 instate heavy	Aggregate	Aggregate	DSL	2116.850748	214249.8198	24428.16415	0	17.26893099
SANTA CL/	2035	T6 instate small	Aggregate	Aggregate	DSL	6702.142483	292345.781	77341.79503	0	24.75670497
SANTA CL/	2035	T6 OOS heavy	Aggregate	Aggregate	DSL	28.97450299	4993.819148	423.0277437	0	0.341093461
SANTA CL/	2035	T6 OOS small	Aggregate	Aggregate	DSL	14.92406879	656.0732061	217.8914043	0	0.050294329
SANTA CL/	2035	T6 Public	Aggregate	Aggregate	DSL	1009.264446	15690.55008	3061.435482	0	1.722179773
SANTA CL/	2035	T6 utility	Aggregate	Aggregate	DSL	155.2570145	2590.067881	1785.455667	0	0.226272477
SANTA CL/	2035	T6TS	Aggregate	Aggregate	GAS	2242.016953	105720.9394	44858.27519	18.00878186	
SANTA CL/	2035	T7 CAIRP	Aggregate	Aggregate	DSL	918.4992254	194410.0633	13410.08869	0	20.53682462
SANTA CL/	2035	T7 CAIRP construction	Aggregate	Aggregate	DSL	103.9229793	19022.47065	469.8317491	0	2.491211634
SANTA CL/	2035	T7 NNOOS	Aggregate	Aggregate	DSL	1378.083919	236991.0171	20120.02521	0	25.8299191
SANTA CL/	2035	T7 NOOS	Aggregate	Aggregate	DSL	365.4376208	76382.01388	5335.389264	0	8.270937012
SANTA CL/	2035	T7 other port	Aggregate	Aggregate	DSL	140.2462021	23204.95618	1065.871136	0	2.802454244
SANTA CL/	2035	T7 POAK	Aggregate	Aggregate	DSL	1102.305883	174250.6662	8377.524707	0	21.62273655
SANTA CL/	2035	T7 Public	Aggregate	Aggregate	DSL	490.3394801	9939.265239	1487.363088	0	1.583451034
SANTA CL/	2035	T7 Single	Aggregate	Aggregate	DSL	822.4699963	57532.26831	9491.189726	0	7.924603
SANTA CL/	2035	T7 single construction	Aggregate	Aggregate	DSL	633.6359851	47191.25088	2864.643653	0	7.105145983
SANTA CL/	2035	T7 SWCV	Aggregate	Aggregate	DSL	93.85513383	3834.7687	366.0350219	0	1.688139595
SANTA CL/	2035	T7 SWCV	Aggregate	Aggregate	NG	403.4689127	16452.65277	1573.52876	0	0
SANTA CL/	2035	T7 tractor	Aggregate	Aggregate	DSL	2996.465115	364569.7865	38055.10696		37.2917585
SANTA CL/	2035	T7 tractor construction	Aggregate	Aggregate	DSL	526.0895724	38928.62722	2378.430503	0	5.795269627
SANTA CL/	2035	T7 utility	Aggregate	Aggregate	DSL	70.47575432	1428.502612	810.4711747	0	0.192091842
SANTA CL/	2035	T7IS	Aggregate	Aggregate	GAS	8.36045567	971.4170444	167.275997	0.179949193	
SANTA CL/	2035	UBUS	Aggregate	Aggregate	GAS	8.469144159	1066.111669	33.87657664	0.240333397	
SANTA CL/	2035	UBUS	Aggregate	Aggregate	DSL	377.7477568	42131.81085	1510.991027	0	6.304918301
SANTA CL/	2035	UBUS	Aggregate	Aggregate	NG	152.6323962	17023.73907	610.5295848	0	0

TOTAL	53,532,257		1313.06	263.80	33.9 0.03
Total (Gas)	47,616,020				36.3 0.03
Total (Diesel)	3,441,586				13.0 0.08

Annual VMT
37,995,455

	Mix (%)	Miles	Gallons
Gas	97.2%	36,928,657	1,018,345
Diesel	2.8%	1,066,760	81,769

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
All Project Land Uses	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

Gas	97.2%
Diesel	2.8%

ISI Project Net Energy and Fuel Use

	Value	Unit
Existing		
Electricity	2,160	MWh/year
Natural Gas	20,958	therm/year
Gasoline	79,434	gal/year
Diesel	5,446	gal/year
Proposed		
Electricity	21,805	MWh/year
Natural Gas	0	therm/year
Gasoline	765,382	gal/year
Diesel	54,423	gal/year
Net		
Electricity	19,645	MWh/year
Natural Gas	-20,958	therm/year
Gasoline	685,948	gal/year
Diesel	48,977	gal/year

ISI Project Operational Energy Use

Land Use	Natural Gas kBTU/year	Natural Gas to Electricity kWh/year	Electricity kWh/year	Electricity MWh/year	Diesel gallons/year
City Park	0	0	-230,571	-231	
Enclosed Parking with Elevator	0	0	1,619,610	1,620	
General Light Industry	245,604	71,982	-136,779	-65	
General Office Building	4,303,870	1,261,392	5,768,300	7,030	
High Turnover (Sit Down Restaurant)	2,466,840	722,989	175,016	898	
High Turnover (Sit Down Restaurant)	3,036,110	889,833	268,613	1,158	
Other Asphalt Surfaces	0	0	-230,571	-231	
Other Non- Asphalt Surfaces	0	0	-230,571	-231	
Parking Lot	0	0	-224,271	-224	
Parking Lot	17,335,500	5,080,744	-226,721	4,854	
Research & Development	0	0	6,389,580	6,390	
Unenclosed Parking with Elevator	0	0	836,429	836	
Total	**27,387,924**	**8,026,941**	**13,778,064**	**21,805**	**219,000**

therm/kBTU	100.000000
kBTU/KWh	3.412

Equipment Type	Number	Hours/Year	Hours/Year	Horse Power	Load Factor	Diesel Fuel Usage
Emergency Generator	2	50	50	1200	0.73	219,000

ISI Project Operational Fuel Use

Operational Fuel Use Summary

Fuel Type	Fleet Mix (%)	Gallons per Mile	Annual VMT	Gallons
Gasoline	97.40%	0.03	22,665,477	765,382
Diesel	2.61%	0.09		54,423

Notes:

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from CalEEMod output file.

ISI Project EMFAC
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Gasoline Fuel Consumption 1,000 gallons/day	Diesel Fuel Consumption 1,000 gallons/day
SANTA CL/	2024	All Other Buses	Aggregate	Aggregate	DSL	668.9820687	39789.29333	5619.449377	0	4.152587487
SANTA CL/	2024	LDA	Aggregate	Aggregate	GAS	768835.8786	26997720.33	3625781.847	791.6921024	
SANTA CL/	2024	LDA	Aggregate	Aggregate	DSL	8011.40793	291515.8709	38101.0904	0	5.443283588
SANTA CL/	2024	LDA	Aggregate	Aggregate	ELEC	30564.28211	1142136.7	148311.4314	0	0
SANTA CL/	2024	LDT1	Aggregate	Aggregate	GAS	77491.49192	2505904.5	359687.4033	85.72	
SANTA CL/	2024	LDT1	Aggregate	Aggregate	DSL	31.54052556	577.78032	104.3444755	0	0.022353168
SANTA CL/	2024	LDT1	Aggregate	Aggregate	ELEC	971.3075351	39285.06821	4827.401743	0	0
SANTA CL/	2024	LDT2	Aggregate	Aggregate	GAS	257922.0884	8298132.338	1201453.102	305.10	
SANTA CL/	2024	LDT2	Aggregate	Aggregate	DSL	1933.864311	68985.44168	9385.606998	0	1.768969216
SANTA CL/	2024	LDT2	Aggregate	Aggregate	ELEC	3976.56681	115838.712	19819.40381	0	0
SANTA CL/	2024	LHD1	Aggregate	Aggregate	GAS	16595.29454	558796.3061	247245.1616	64.57	
SANTA CL/	2024	LHD1	Aggregate	Aggregate	DSL	12077.33667	447738.4813	151917.702	0	23.34061532
SANTA CL/	2024	LHD2	Aggregate	Aggregate	GAS	2318.35111	78374.99134	34539.9772	10.31	
SANTA CL/	2024	LHD2	Aggregate	Aggregate	DSL	4877.312155	176304.8377	61350.45125	0	10.3836217
SANTA CL/	2024	MCY	Aggregate	Aggregate	GAS	34431.37068	243796.974	68862.74135	6.45	
SANTA CL/	2024	MDV	Aggregate	Aggregate	GAS	156824.5032	4915329.582	725874.2983	218.61	
SANTA CL/	2024	MDV	Aggregate	Aggregate	DSL	4279.343815	148384.3757	20665.80245	0	4.966674744
SANTA CL/	2024	MDV	Aggregate	Aggregate	ELEC	2041.892983	62655.18542	10349.9306	0	0.00
SANTA CL/	2024	MH	Aggregate	Aggregate	GAS	2827.424478	26048.95454	282.8555448	5.15	
SANTA CL/	2024	MH	Aggregate	Aggregate	DSL	1087.571664	10089.66545	108.7571664	0	0.983472439
SANTA CL/	2024	Motor Coach	Aggregate	Aggregate	DSL	94.96083367	13220.84712	1386.428172	0	2.005724507
SANTA CL/	2024	OBUS	Aggregate	Aggregate	GAS	504.7356294	23300.25921	10098.75047	4.70	
SANTA CL/	2024	PTO	Aggregate	Aggregate	DSL	0	13708.07162	0	0	2.682010619
SANTA CL/	2024	SBUS	Aggregate	Aggregate	GAS	277.2219086	12408.75559	1108.887634	1.32	
SANTA CL/	2024	SBUS	Aggregate	Aggregate	DSL	1011.342891	31782.10907	11670.75674	0	3.885194198
SANTA CL/	2024	T6 Ag	Aggregate	Aggregate	DSL	0.734242778	11.43339998	3.230668225	0	0.001239733
SANTA CL/	2024	T6 CAIRP heavy	Aggregate	Aggregate	DSL	40.15434203	7685.998548	586.2533936	0	0.642224
SANTA CL/	2024	T6 CAIRP small	Aggregate	Aggregate	DSL	20.14308126	1021.04335	294.0889865	0	0.092041648
SANTA CL/	2024	T6 instate construction he	Aggregate	Aggregate	DSL	294.3985016	19196.18712	1330.964179	0	2.223744671
SANTA CL/	2024	T6 instate construction sm	Aggregate	Aggregate	DSL	796.9109425	43790.43671	3602.803387	0	5.034190022
SANTA CL/	2024	T6 instate heavy	Aggregate	Aggregate	DSL	1381.477672	180556.0723	15942.0608	0	16.76957333
SANTA CL/	2024	T6 instate small	Aggregate	Aggregate	DSL	6009.42579	292609.0407	69347.94044	0	29.02301225
SANTA CL/	2024	T6 OOS heavy	Aggregate	Aggregate	DSL	22.653868	4325.342533	330.7464728	0	0.361665839
SANTA CL/	2024	T6 OOS small	Aggregate	Aggregate	DSL	11.42650124	575.0130269	166.826918	0	0.051910259
SANTA CL/	2024	T6 Public	Aggregate	Aggregate	DSL	905.120735	14241.07218	2745.532894	0	1.851200655
SANTA CL/	2024	T6 utility	Aggregate	Aggregate	DSL	142.4019989	2377.606663	1637.622987	0	0.249954307
SANTA CL/	2024	T6TS	Aggregate	Aggregate	GAS	1564.85717	81219.93946	31309.66227	15.95938704	
SANTA CL/	2024	T7 CAIRP	Aggregate	Aggregate	DSL	928.3492722	168973.5945	13553.89937	0	23.71568495
SANTA CL/	2024	T7 CAIRP construction	Aggregate	Aggregate	DSL	75.45381342	13788.78796	341.1237568	0	2.245950079
SANTA CL/	2024	T7 NNOOS	Aggregate	Aggregate	DSL	1062.949377	205993.1049	15519.0609	0	27.30423113
SANTA CL/	2024	T7 NOOS	Aggregate	Aggregate	DSL	368.9189153	66386.46822	5386.216163	0	9.556285753
SANTA CL/	2024	T7 other port	Aggregate	Aggregate	DSL	110.0790162	18888.42224	836.6005235	0	3.010347722
SANTA CL/	2024	T7 POAK	Aggregate	Aggregate	DSL	879.4272407	109228.0576	6683.647029	0	18.15264387
SANTA CL/	2024	T7 Public	Aggregate	Aggregate	DSL	572.532436	11612.48494	1736.681721	0	2.236390447
SANTA CL/	2024	T7 Single	Aggregate	Aggregate	DSL	1120.920175	69036.58869	12935.26341	0	10.63927849
SANTA CL/	2024	T7 single construction	Aggregate	Aggregate	DSL	489.3887938	34207.44675	2212.507709	0	5.916951355
SANTA CL/	2024	T7 SWCV	Aggregate	Aggregate	DSL	268.6851636	10978.04045	1047.872138	0	4.8390456
SANTA CL/	2024	T7 SWCV	Aggregate	Aggregate	NG	370.765086	15119.11443	1445.983835	0	0
SANTA CL/	2024	T7 tractor	Aggregate	Aggregate	DSL	2300.772614	306086.8829	29219.81219	0	38.49943094
SANTA CL/	2024	T7 tractor construction	Aggregate	Aggregate	DSL	414.4132815	28218.13192	1873.546333	0	4.91468822
SANTA CL/	2024	T7 utility	Aggregate	Aggregate	DSL	64.64993657	1311.573391	743.4742705	0	0.218167611
SANTA CL/	2024	T7IS	Aggregate	Aggregate	GAS	4.841477876	594.9439446	96.86828935	0.241835532	0.129584101
SANTA CL/	2024	UBUS	Aggregate	Aggregate	GAS	8.427049347	1060.812695	33.70819739	6.818532441	
SANTA CL/	2024	UBUS	Aggregate	Aggregate	DSL	430.6993814	46893.42079	1722.797525	0	0
SANTA CL/	2024	UBUS	Aggregate	Aggregate	NG	97.04458398	11968.10394	388.1783359	0	0

TOTAL	48,029,781		1516.64	267.31	26.9	0.04
Total (Gas)	43,742,689				28.8	0.03
Total (Diesel)	2,900,089				10.8	0.09

Annual VMT
22,665,477

	Mix (%)	Miles	Gallons
Gas	97.4%	22,075,087	765,382
Diesel	2.6%	590,436	54,423

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
All Project Land Uses	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

Gas	97.4%
Diesel	2.6%

ISI Project - Existing Operational Energy Use

Land Use	Natural Gas kBTU/year	Natural Gas therm/year	Electricity kWh/year	Electricity MWh/year	Diesel gallons/year
General Office Building	2,095,800	20,958	2,159,850	2,160	
Total	**2,095,800**	**20,958**	**2,159,850**	**2,160**	**0**

therm/kbtu 100.000000

ISI Project - Existing Operational Fuel Use

Operational Fuel Use Summary

Fuel Type	Fleet Mix (%)	Gallons per Mile	Annual VMT	Gallons
Gasoline	97.56%	0.04	2,102,744	79,434
Diesel	2.44%	0.11		5,446

Notes:

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from CalEEMod output file.

ISI Project - Existing EMFAC
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Gasoline Fuel Consumption 1,000 gallons/day	Diesel Fuel Consumption 1,000 gallons/day
SANTA CL/	2020	All Other Buses	Aggregate	Aggregate	DSL	673.1402758	42685.03688	5654.378317	0	4.697430806
SANTA CL/	2020	LDA	Aggregate	Aggregate	GAS	698042.6898	25845511.06	3282091.337	844.7330666	
SANTA CL/	2020	LDA	Aggregate	Aggregate	DSL	6184.557076	240044.1448	29354.99131	0	4.966790265
SANTA CL/	2020	LDA	Aggregate	Aggregate	ELEC	22473.4189	810004.1048	110915.4083	0	0
SANTA CL/	2020	LDT1	Aggregate	Aggregate	GAS	69721.48828	2375892.314	321741.6692	89.83016876	
SANTA CL/	2020	LDT1	Aggregate	Aggregate	DSL	43.66329359	798.9465423	144.0472504	0	0.032878366
SANTA CL/	2020	LDT1	Aggregate	Aggregate	ELEC	369.4974592	13183.41188	1815.270944	0	0
SANTA CL/	2020	LDT2	Aggregate	Aggregate	GAS	243220.5879	8316072.595	1134014.288	348.3105991	
SANTA CL/	2020	LDT2	Aggregate	Aggregate	DSL	1369.793117	54854.29138	6755.454469	0	1.564571726
SANTA CL/	2020	LDT2	Aggregate	Aggregate	ELEC	1730.3609	55312.35056	8710.738866	0	0
SANTA CL/	2020	LHD1	Aggregate	Aggregate	GAS	16555.40683	577439.481	246650.8943	69.75541584	
SANTA CL/	2020	LHD1	Aggregate	Aggregate	DSL	10110.84569	393973.1344	127181.7193	0	21.82314499
SANTA CL/	2020	LHD2	Aggregate	Aggregate	GAS	2187.182973	76423.2148	32585.76739	10.53593478	
SANTA CL/	2020	LHD2	Aggregate	Aggregate	DSL	3993.610585	154520.5488	50234.5972	0	9.652180087
SANTA CL/	2020	MCY	Aggregate	Aggregate	GAS	31290.02278	237504.4461	62580.04556	6.27026239	
SANTA CL/	2020	MDV	Aggregate	Aggregate	GAS	147007.2562	4842885.039	678227.2246	245.4686684	
SANTA CL/	2020	MDV	Aggregate	Aggregate	DSL	3125.669726	120041.6601	15311.37807	0	4.487631939
SANTA CL/	2020	MDV	Aggregate	Aggregate	ELEC	370.1585559	12282.83418	1882.383207	0	0.00
SANTA CL/	2020	MH	Aggregate	Aggregate	GAS	2976.086059	26488.39028	297.7276493	5.582515664	
SANTA CL/	2020	MH	Aggregate	Aggregate	DSL	949.5742805	9283.955894	94.95742805	0	0.951855486
SANTA CL/	2020	Motor Coach	Aggregate	Aggregate	DSL	96.37021236	12304.58467	1407.0051	0	2.000551103
SANTA CL/	2020	OBUS	Aggregate	Aggregate	GAS	501.5158614	25277.35166	10034.32935	5.396176517	
SANTA CL/	2020	PTO	Aggregate	Aggregate	DSL	0	14657.50692	0	0	3.12024089
SANTA CL/	2020	SBUS	Aggregate	Aggregate	GAS	221.4189893	10559.16258	885.6759573	1.154890838	
SANTA CL/	2020	SBUS	Aggregate	Aggregate	DSL	1010.158338	31993.49668	11657.08717	0	4.018547327
SANTA CL/	2020	T6 Ag	Aggregate	Aggregate	DSL	0.839298572	19.73586481	3.692913715	0	0.002128508
SANTA CL/	2020	T6 CAIRP heavy	Aggregate	Aggregate	DSL	35.39312556	7055.986222	516.7396332	0	0.653152678
SANTA CL/	2020	T6 CAIRP small	Aggregate	Aggregate	DSL	18.08632825	953.7580733	264.0603925	0	0.093738556
SANTA CL/	2020	T6 instate construction he	Aggregate	Aggregate	DSL	200.5079989	13632.1697	906.4888674	0	1.720676886
SANTA CL/	2020	T6 instate construction sm	Aggregate	Aggregate	DSL	609.1650491	31097.77272	2754.011503	0	3.904429676
SANTA CL/	2020	T6 instate heavy	Aggregate	Aggregate	DSL	1239.640208	164172.4503	14305.27613	0	17.1140312
SANTA CL/	2020	T6 instate small	Aggregate	Aggregate	DSL	6263.574393	300791.8158	72280.78009	0	33.10222153
SANTA CL/	2020	T6 OOS heavy	Aggregate	Aggregate	DSL	20.04721504	4001.689113	292.6893396	0	0.370506051
SANTA CL/	2020	T6 OOS small	Aggregate	Aggregate	DSL	10.38303987	541.8821592	151.5923821	0	0.05335911
SANTA CL/	2020	T6 Public	Aggregate	Aggregate	DSL	868.911321	13513.01479	2635.697671	0	1.883569996
SANTA CL/	2020	T6 utility	Aggregate	Aggregate	DSL	137.6076915	2296.882373	1582.488452	0	0.265675044
SANTA CL/	2020	T6TS	Aggregate	Aggregate	GAS	1370.703046	69099.33289	27425.02654	14.56386105	
SANTA CL/	2020	T7 CAIRP	Aggregate	Aggregate	DSL	868.6111942	157246.8572	12681.72344	0	23.91957109
SANTA CL/	2020	T7 CAIRP construction	Aggregate	Aggregate	DSL	53.23897613	9792.105911	240.6913411	0	1.731548193
SANTA CL/	2020	T7 NNOOS	Aggregate	Aggregate	DSL	949.7699991	191702.7699	13866.64199	0	28.32595182
SANTA CL/	2020	T7 NOOS	Aggregate	Aggregate	DSL	341.409547	61778.16593	4984.579386	0	9.61526194
SANTA CL/	2020	T7 other port	Aggregate	Aggregate	DSL	100.9985648	16245.06256	767.5890925	0	3.020045174
SANTA CL/	2020	T7 POAK	Aggregate	Aggregate	DSL	782.4877886	87402.69953	5946.907194	0	16.93723797
SANTA CL/	2020	T7 Public	Aggregate	Aggregate	DSL	598.9695665	12149.63356	1816.87435	0	2.438104925
SANTA CL/	2020	T7 Single	Aggregate	Aggregate	DSL	1113.574671	73818.13466	12850.49731	0	12.59805033
SANTA CL/	2020	T7 single construction	Aggregate	Aggregate	DSL	344.434764	24292.4137	1557.176177	0	4.64622174
SANTA CL/	2020	T7 SWCV	Aggregate	Aggregate	DSL	362.4242634	14808.06819	1413.454627	0	6.551703422
SANTA CL/	2020	T7 SWCV	Aggregate	Aggregate	NG	321.0495428	13089.68947	1252.093217	0	0
SANTA CL/	2020	T7 tractor	Aggregate	Aggregate	DSL	2014.044239	279154.6452	25578.36183	0	39.55314055
SANTA CL/	2020	T7 tractor construction	Aggregate	Aggregate	DSL	285.151002	20039.10258	1289.156594	0	3.850062723
SANTA CL/	2020	T7 utility	Aggregate	Aggregate	DSL	62.46740729	1267.753573	718.3751838	0	0.225978944
SANTA CL/	2020	T7IS	Aggregate	Aggregate	GAS	5.454157267	461.7243588	109.1267786	0.113380863	
SANTA CL/	2020	UBUS	Aggregate	Aggregate	GAS	8.411742142	1058.885796	33.64696857	0.290198568	
SANTA CL/	2020	UBUS	Aggregate	Aggregate	DSL	422.8944292	46444.08119	1691.577717		6.75805395
SANTA CL/	2020	UBUS	Aggregate	Aggregate	NG	103.8909225	12310.52528	415.5636899	0	0

TOTAL	45,930,232		1642.01	276.65	23.9	0.04
Total (Gas)	42,404,673				25.8	0.04
Total (Diesel)	2,609,376				9.4	0.11

Annual VMT
2,102,744

	Mix (%)	Miles	Gallons
Gas	97.6%	2,051,376	79,434
Diesel	2.4%	51,370	5,446

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
All Project Land Uses	0.60481	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.00062	0.000785

Gas	97.6%
Diesel	2.4%

ISI Project Construction Fuel Use

Construction Fuel Usage Summary

Construction Year	Diesel Off-road Equipment (gallons)	Gasoline On-road (gallons)	Diesel On-road (gallons)	Diesel Combined
2020	3,306	213	3,251	6,557
2021	28,650	217,013	4,505	33,155
2022	26,404	241,973	265,248	291,653
2023	107,990	172,702	252,256	360,245
TOTAL	**166,350**	**631,901**	**525,260**	691,610

Total Gasoline	**631,901**	**gallons**
Total Diesel	**691,610**	**gallons**

ISI Project

2020-2023 Construction Offroad Equipment

2020

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73	13	0.6	184
Demolition	Excavators	3	8.00	158	0.38	13	0.6	562
Demolition	Rubber Tired Dozers	2	8.00	247	0.40	13	0.6	617
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40	13	0.6	925
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37	13	0.6	448
Trenching	Excavators	2	8.00	158	0.38	12	0.6	346
Trenching	Trenchers	2	8.00	78	0.50	12	0.6	225
							TOTAL	**3,306**

2021

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73	19	0.6	270
Demolition	Excavators	3	8.00	158	0.38	19	0.6	821
Demolition	Rubber Tired Dozers	2	8.00	247	0.40	19	0.6	901
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40	19	0.6	1,352
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37	19	0.6	655
Trenching	Excavators	2	8.00	158	0.38	231	0.6	6,657
Trenching	Trenchers	2	8.00	78	0.50	231	0.6	4,324
Building Construction	Cranes	1	7.00	231	0.29	251	0.6	3,531
Building Construction	Forklifts	3	8.00	89	0.20	251	0.6	3,217
Building Construction	Generator Sets	1	8.00	84	0.74	251		
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	251	0.6	5,675
Building Construction	Welders	1	8.00	46	0.45	251	0.6	1,247
							TOTAL	**28,650**

2022

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Building Construction	Cranes	1	7.00	231	0.29	260	0.6	3,658
Building Construction	Forklifts	3	8.00	89	0.20	260	0.6	3,332
Building Construction	Generator Sets	1	8.00	84	0.74	260	0.6	3,879
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	260	0.6	5,879
Building Construction	Welders	1	8.00	46	0.45	260	0.6	1,292
Architectural Coating	Air Compressors	1	6.00	78	0.48	142	0.6	957
Grading	Excavators	2	8.00	158	0.38	142	0.6	4,092
Grading	Graders	1	8.00	187	0.41	81		
Grading	Rubber Tired Dozers	1	8.00	247	0.40	81	0.6	1,921
Grading	Scrapers	2	8.00	367	0.48	81		
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	81	0.6	1,395
							TOTAL	**26,404**

	Year	Start Date	End Date	Network Days
Demolition	2020	12/15/2020	12/31/2020	13
	2021	1/1/2021	1/27/2021	19
Site Preparation	2020	12/15/2020	12/31/2020	13
	2021	1/1/2021	1/27/2021	19
Trenching	2020	12/16/2020	12/31/2020	12
	2021	1/1/2021	11/20/2021	231
Building Construction	2021	1/15/2021	12/31/2021	251
	2022	1/1/2022	12/31/2022	260
	2023	1/1/2023	9/1/2023	175
Architectural Coating	2022	6/16/2022	12/31/2022	142
	2023	1/1/2023	9/7/2023	179
Grading	2022	9/9/2022	12/31/2022	81
	2023	1/1/2023	2/27/2023	41
Paving	2023	3/16/2023	11/1/2023	165

2023

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Building Construction	Cranes	1	7.00	231	0.29	175	0.6	2,462
Building Construction	Forklifts	3	8.00	89	0.20	175	0.6	2,243
Building Construction	Generator Sets	1	8.00	84	0.74	175	0.6	2,611
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	175	0.6	3,957
Building Construction	Welders	1	8.00	46	0.45	175	0.6	869
Architectural Coating	Air Compressors	1	6.00	78	0.48	179	0.6	1,206
Grading	Excavators	2	8.00	158	0.38	142	0.6	4,092
Grading	Graders	1	8.00	187	0.41	41		
Grading	Rubber Tired Dozers	1	8.00	247	0.40	41	0.6	972
Grading	Scrapers	2	8.00	367	0.48	41	1.6	9,245
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	41	2.6	3,061
Paving	Pavers	2	8.00	130	0.42	165	3.6	25,946
Paving	Paving Equipment	2	8.00	132	0.36	165	4.6	28,854
Paving	Rollers	2	8.00	80	0.38	165	5.6	22,472
							TOTAL	**107,990**

Trips and VMT

2020

Phase Name	Daily Worker Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Hauling Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Demolition	15	13	195	0	846	10.80	7.30	20.00	2106	0	16920	**76**	**3,251**
Site Preparation	18	13	234	0	0	10.80	7.30	20.00	2527.2	0	0	**91**	**0**
Trenching	10	12	120	0	0	10.80	7.30	20.00	1296	0	0	**46**	**0**
											TOTAL	**213**	**3,251**

2021

Phase Name	Daily Worker Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Hauling Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Demolition	15	19	285	0	846	10.80	7.30	20.00	3078	0	16920	**107**	**3,207**
Site Preparation	18	19	342	0	0	10.80	7.30	20.00	3693.6	0	0	**129**	**0**
Trenching	10	231	2310	0	0	10.80	7.30	20.00	24948	0	0	**871**	**0**
Building Construction	2281	251	572531	938	0	10.80	7.30	21.00	6183334.8	6847.4	0	**215,905**	**1,298**
											TOTAL	**217,013**	**4,505**

2022

Phase Name	Daily Worker Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Hauling Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Building Construction	2281	260	593060	938	0	10.80	7.30	20.00	6405048	6847.4	0	**217,619**	**1,268**
Architectural Coating	456	142	64752	0	0	10.80	7.30	20.00	699,321.60	0.00	0	**23,760**	**0**
Grading	20	81	1,620	0	71,250	10.80	7.30	20.00	17,496.00	0.00	1425000	**594**	**263,980**
											TOTAL	**241,973**	**265,248**

2023

Phase Name	Daily Worker Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Hauling Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Building Construction	2281	175	399175	938	0	10.80	7.30	20.00	4311090	6847.4	0	**142,407**	**1,206**
Architectural Coating	456	179	81624	0	0	10.80	7.30	20.00	881,539.20	0.00	0	**29,120**	**0**
Grading	20	41	820	0	71,250	10.80	7.30	20.00	8,856.00	0.00	1425000	**293**	**251,049**
Paving	15	165	2,475	0	0	10.80	7.30	20.00	26,730.00	0.00	0	**883**	**0**
											TOTAL	**172,702**	**252,256**

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

ISI EMFAC Construction
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SANTA CLA	2020	LDA	Aggregated	Aggregated	GAS	698042.6898	25845511.06	3282091.337	844.7330666	0.00	30.60	27.88	5.20
SANTA CLA	2020	LDT1	Aggregated	Aggregated	GAS	69721.48828	2375892.314	321741.6692	89.83016876	0.00	26.45		
SANTA CLA	2020	LDT2	Aggregated	Aggregated	GAS	243220.5879	8316072.595	1134014.288	348.3105991	0.00	23.88		
SANTA CLA	2020	T7 tractor construction	Aggregated	Aggregated	DSL	285.151002	20039.10258	1289.156594	0.00	3.850062723	5.20		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

ISI EMFAC Construction
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SANTA CLA	2021	LDA	Aggregated	Aggregated	GAS	715693.333	26189161.18	3369391.829	833.8376965	0.00	31.41	28.64	5.28
SANTA CLA	2021	LDT1	Aggregated	Aggregated	GAS	71628.15157	2413667.723	331256.0399	89.08338957	0.00	27.09		
SANTA CLA	2021	LDT2	Aggregated	Aggregated	GAS	246759.8802	8311704.136	1150424.758	337.2427347	0.00	24.65		
SANTA CLA	2021	T7 tractor construction	Aggregated	Aggregated	DSL	316.1708184	21960.83797	1429.395978	0.00	4.162544075	5.28		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

ISI EMFAC Construction
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SANTA CL	2022	LDA	Aggregated	Aggregated	GAS	733557.6946	26455303.53	3456648.544	820.1713145	0.00	32.26	29.43	5.40
SANTA CL	2022	LDT1	Aggregated	Aggregated	GAS	73556.9159	2443329.481	340743.7941	87.99301909	0.00	27.77		
SANTA CL	2022	LDT2	Aggregated	Aggregated	GAS	250455.3736	8295824.493	1167439.23	325.9545085	0.00	25.45		
SANTA CL	2022	T7 tractor construction	Aggregated	Aggregated	DSL	347.4008548	23964.58799	1570.585758	0.00	4.439413381	5.40		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

ISI EMFAC Construction
EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SANTA CL	2023	LDA	Aggregated	Aggregated	GAS	751359.6462	26739811.21	3542534.481	806.5221241	0.00	33.15	30.27	5.68
SANTA CL	2023	LDT1	Aggregated	Aggregated	GAS	75517.84	2475366.781	350250.9794	86.9130372	0.00	28.48		
SANTA CL	2023	LDT2	Aggregated	Aggregated	GAS	254167.4585	8294772.476	1184411.857	315.3635556	0.00	26.30		
SANTA CL	2023	T7 tractor construction	Aggregated	Aggregated	DSL	382.4168443	26050.35264	1728.891685	0.00	4.589419538	5.68		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Appendix E

Transportation Impact Analyses

Intuitive Surgical Campus Expansion Transportation Impact Analysis

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Intuitive Surgical Campus Expansion

Transportation Impact Analysis

Prepared for:

City of Sunnyvale

August 13, 2020

Hexagon Transportation Consultants, Inc.
Hexagon Office: 4 North Second Street, Suite 400
San Jose, CA 95113
Hexagon Job Number: 17OZ12
Phone: 408.971.6100
Client Name: Ms. Lillian Tsang

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AUTO TRIP REDUCTION STATEMENT

UPDATED: October 2014

SANTA CLARA Valley Transportation Authority

PROJECT INFORMATION	*Relevant TIA Section:*	1. Introduction
Project Name: Intuitive Surgical Engineering Campus Expansion Traffic Impact Analysis		
Location: 932, 950, 945-955 Kifer Road, Sunnyvale, CA		
Description:		

Size (net new):	*D.U. Residential*	1,280,000 *Sq. Ft. Comm.*		*Acres (Gr.)*
Density:	*D.U. / Acre*			*Floor Area Ratio (FAR)*

Located within 2000 feet walking distance of an LRT, BRT, BART or Caltrain station or major bus stop? No

PROJECT AUTO TRIP GENERATION	*Relevant TIA Section:*	4. Project Conditions	
Auto Trips Generated:	637 *AM Pk Hr*	685 *PM Pk Hr*	11,528 *Total Weekday*
Methodology (check one)	☐ **ITE**	☐ **Other** *(Please describe below)*	

AUTO TRIP REDUCTION APPROACH	*Relevant TIA Section:*	4. Project Conditions	
☒ **Standard** *Complete Table A below*	☐ **Peer/Study-Based** *Complete Table B below*	☐ **Target-Based** *Complete Table C below*	☒ **None Taken**

TRIP REDUCTION REQUIREMENTS	*Relevant TIA Section:*	N/A
Is the project required to meet any trip reduction requirements or targets? No		**If so, specify percent:**
Reference code or requirement:		

TRIP REDUCTION APPROACHES

A. STANDARD APPROACH	*Relevant TIA Section:*	Project Conditions		
Type of Reduction *Specify reduction. See Table 2 in TIA Guidelines*		**% Reduction from ITE Rates**	**Total Trips Reduced (AM/PM/Daily)**	**TOTAL REDUCTION CLAIMED**
				% / **Trips**
Transit				8% / 65/70/1,107
Mixed-Use				
Financial Incentives	Standard Reduction	5%	41/44/692	
Shuttle	Standard Reduction	3%	24/26/415	

B. PEER/STUDY-BASED APPROACH	*Relevant TIA Section:*		
Basis of Reduction		**TOTAL REDUCTION CLAIMED**	
		%	**Trips**

Last updated 11/4/2014

C. TARGET-BASED APPROACH			Relevant TIA Section:			
Type of Reduction (check all that apply)					TOTAL REDUCTION CLAIMED	
❒ % Trip Reduction	❒ % SOV mode share		❒ Trip Cap		%	Trips
Description						
Time period for reduction	Peak Hour		Peak Period	Full Day		
	❒ AM/PM		❒ AM/PM	❒		

OTHER TDM/REDUCTION MEASURES			
Bicycle/Pedestrian	No	Relevant TIA Section:	
Parking Management	No	Relevant TIA Section:	
Transit	No	Relevant TIA Section:	
Site Planning and Design	No	Relevant TIA Section:	
TDM Program	Yes	Relevant TIA Section:	Appendix E - Intuitive Campus TDM Plan
The project's baseline TDM programs include an on-site TDM coordinator, membership in Transportation Management Association (TMA), priority parking for carpool/vanpool/clean-fuel vehicles, bicycle parking/sharing/facilities, rideshare matching services, pre-tax commuter benefits, and marketing information.			

IMPLEMENTATION	Relevant TIA Section:	
Have the project sponsor and Lead Agency agreed to any of the following measures?		
❒Monitoring		
❒Enforcement		
❒Data Sharing		

Executive Summary

This report presents the results of the transportation impact analysis (TIA) conducted for the proposed Intuitive Surgical Engineering Campus Expansion at 932, 950, and 945-955 Kifer Road in Sunnyvale, California. The project comprises a 15.6-acre site located on the north side of Kifer Road and a 16.8-acre site located on the south side of Kifer Road between Lawrence Expressway and Wolfe Road. The project proposes 380,000 square feet of office space on the north site and 900,000 square feet of research and development space on the south site[1]. The two sites would be connected by a private pedestrian bridge across Kifer Road and would be integrated with the existing nearby Intuitive Surgical facilities. The project proposes to construct the office building on the north site to replace an existing surface parking lot. The research and development building on the south site would replace an existing office building and vacant industrial building. Access to the north site would be primarily provided via a proposed signalized driveway at the east property line, as well as a visitor driveway to the west. Access to the south site would be primarily provided via a proposed driveway on the south leg of the Commercial Street and Kifer Road intersection, as well as a visitor driveway to the east.

This study was conducted for the purpose of identifying the potential near-term traffic impacts related to the proposed development. The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project, and the potential long-term traffic impacts are presented in the traffic study conducted for the LSAP-Update.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. This research is compiled in the *Trip Generation Manual, 10th Edition (2017)* published by the Institute of Transportation Engineers' (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trip generation rates for the proposed office building are based on the average rates published for "General Office Building" (Land Use Code 710). Trip generation rates for the proposed research and development building are based on the average rates published for "Research and Development Center" (Land Use Code 760).

[1] The project size has since been reduced to 364,000 square feet of office space (including 13,000 square feet of cafeteria space) on the north site and 847,000 square feet of research and development space (including 16,000 square feet of cafeteria space) and an 11,000 square-foot detached amenity building on the south site. This analysis reflects a slightly conservative project description.

Trip Reductions

Transportation Demand Management (TDM) is a combination of services, incentives, facilities, and actions that reduce single-occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems. The project plans to implement a TDM Plan that will provide financial incentives to promote alternative travel modes, including free transit passes, dedicated carpool/vanpool parking spaces, bike facilities and services, and marketing campaigns and on-site services to reduce daily trips. The project also plans to provide fully funded daily shuttles from the Intuitive Surgical campus to the Lawrence Caltrain Station, Great America Station, Fremont Civic Center Park & Ride, Fremont BART Station, and other Intuitive Surgical campus sites in the area. The VTA's *Congestion Management Program Transportation Impact Analysis Guidelines* (October 2014) indicates a trip reduction of up to 5% can be applied for TDM programs that include financial incentives that are offered to all employees on an ongoing basis and is greater than or equal to the monthly maximum pre-tax commuter benefit. The guidelines also indicate that a 3% trip reduction can be applied for TDM programs that provide a fully funded shuttle service to light rail, Caltrain, or BART facilities. Thus, a total trip reduction of 8% was applied to the project trip generation.

In addition, the proposed project would receive trip credits for the trips generated by the existing on-site use. AM and PM peak hour counts were collected at the existing site driveways on May 23, 2019.

Net Project Trips

After applying the ITE trip generation rates and the applicable trip reductions, the proposed project is estimated to generate a net increase of 637 vehicle trips during the AM peak hour (539 inbound and 98 outbound) and 685 vehicle trips during the PM peak hour (62 inbound and 623 outbound).

The trip generation for the proposed project is summarized in Table ES-1.

Table ES- 1
Trip Generation Summary

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour In %	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Rate	PM Peak Hour In %	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Proposed Use [5]														
Office [1]	380.0	ksf	9.74	3,701	1.16	86%	379	62	441	1.15	16%	70	367	437
R & D [2]	900.0	ksf	11.26	10,134	0.42	75%	284	94	378	0.49	15%	66	375	441
Gross Project Trips	**1,280**	**ksf**		**13,835**			**663**	**156**	**819**			**136**	**742**	**878**
Trip Reductions														
Standard TDM Reduction [4]				(1,107)			(53)	(12)	(65)			(11)	(59)	(70)
Total Project Trips				**12,728**			**610**	**144**	**754**			**125**	**683**	**808**
Other Trip Adjustments														
Existing Uses [3]				(1,200)			(71)	(46)	(117)			(63)	(60)	(123)
Net Project Trips				**11,528**			**539**	**98**	**637**			**62**	**623**	**685**

Notes:
KSF = 1,000 square feet
d.u. = dwelling unit

[1] General Office Building (Land Use 710) average rates published in ITE's Trip Generation Manual, 10th Edition, 2017.

[2] Research and Development Center (Land Use 760) average rates published in ITE's Trip Generation Manual, 10th Edition, 2017.

[3] Trip generation of existing buildings occupying the project site was based on driveway counts conducted May 23, 2019. Daily Trips were estimated based on the average AM and PM peak hour trips multiplied by 10.

[4] As prescribed by the *VTA Transportation Impact Analysis Guidelines, 2014* , an 8% standard TDM reduction was applied to the project's trip generation. A maximum trip reduction of 5% was applied for TDM programs which include financial incentives and a 3% reduction was applied for TDM programs which commit to fully funding a dedicated shuttle to light rail, Caltrain, or BART facilities.

[5] The project size has been reduced to 364,000 square feet of office space, 847,000 square feet of research and development space, and an 11,000 square-foot detached amenity building which would result in minimal reduction in trips generated.

Intersection Levels of Service Results

The intersection level of service analysis (see Tables ES-2 and ES-3) showed that based on City of Sunnyvale intersection impact criteria, the project would generate an adverse intersection impact at five signalized intersections and two unsignalized intersections during at least one peak period.

Potential Improvement Strategies for Intersection Impacts

Improvement options were studied for the five impacted signalized intersections and two impacted unsignalized intersections. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to its LOS standard *or* to an average delay equal to without-project conditions or better.

TDM Plan

The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project. Non-residential developments within the LSAP area would be required to implement a Transportation Demand Management (TDM) Plan with a 30% peak hour trip reduction requirement or pay a penalty. For informational purposes, Hexagon examined whether the implementation of such a TDM Plan could eliminate any project impacts under background plus project conditions. If the project implements a TDM Plan with a 30% peak hour trip reduction, the project could generate a lesser impact at all six study intersections under background plus project conditions. However, the proposed TDM Plan would not restore intersection conditions to the LOS standard or to an average delay equal to without-project conditions or better for any intersection under background plus project conditions.

Wolfe Road and Central Expressway Ramps (#16)

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening both the eastbound and westbound Central Expressway off-ramps to include one left-turn, one shared through-left lane and one right-turn lane. There appears to be sufficient right-of-way to accommodate the potential improvements. The improvements would lengthen the respective crosswalks by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS D- under background plus project conditions during the PM peak hour. However, the improvement requires widening the Central Expressway off-ramps, which are in the County's jurisdiction, so the City cannot ensure the implementation of the potential improvement. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement.

Lawrence Expressway and Kifer Road (#25)

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Lawrence Expressway and Monroe Street/Reed Avenue (#26) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the AM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impact.

The LSAP requires projects within the plan area to contribute to their fair share towards the cost of the grade separation at Lawrence Expressway and Monroe Street/Reed Avenue. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Oakmead Parkway and Central Expressway (#27) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** As documented in the *Valley Transportation Plan 2040,* Central Expressway is planned to be widened to six lanes between Lawrence Expressway and San Tomas Expressway without HOV lane operations. This would improve the east-west flow of traffic and potentially address the project's impact.

With the additional lanes, the intersection would operate at an acceptable LOS D- during the AM peak hour and LOS D during the PM peak hour under background plus project conditions. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Bowers Avenue and Central Expressway (#29) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio to meet the County of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** According to the *City Place Santa Clara Project Draft Environmental Impact Report*, dated October 2015, the Bowers Avenue/Central Expressway intersection is recommended for lane additions to improve vehicle operations. The City Place Project is responsible for constructing third southbound left-turn and third eastbound left-turn lanes at this intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS E- under background plus project conditions during the PM peak hour. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Commercial Street and Kifer Road (#20)

Under background conditions, the LOS would be an acceptable LOS C during the AM peak hour and an unacceptable LOS F during the PM peak hour. During the AM peak hour, the addition of project traffic would deteriorate traffic operations to an unacceptable LOS F, which meets the City of Sunnyvale's adverse intersection impact criteria. During the PM peak hour, the addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria. In addition, the intersection would meet the peak-hour signal warrant under background plus project conditions during both the AM and PM peak hours.

> **Potential Improvement:** Improvement would require installation of a signal at the intersection of Commercial Street and Kifer Road. Installation of a signal would greatly reduce the delay for southbound vehicles while maintaining minimal delay for westbound and eastbound traffic. The improvement would include one left-turn lane and one shared through-right lane on the southbound approach.

With the proposed improvement, the intersection would operate at an acceptable LOS C+ during the AM peak hour and LOS C during the PM peak hour under background plus project conditions. As discussed in the *Fortinet Traffic Operations Analysis (TOA)*, prepared by Hexagon Transportation Consultants, dated December 5, 2018, a traffic signal would be required to address the potential project impacts generated by the Fortinet project at this intersection. Since the Intuitive Surgical project would also require a traffic signal to address the intersection impact, it should contribute its fair share towards the signal installation costs. As discussed in the Fortinet TOA report, the Fortinet project would generate 76 trips at this intersection during the PM peak hour. The Intuitive Surgical project would generate 538 trips during the PM peak hour at this intersection. Therefore, the Intuitive Surgical project should contribute 88% of the signal installation cost.

Wolfe Road and Maude Avenue (#13)

Under existing conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The intersection would meet the peak-hour signal warrant under existing plus project conditions during the PM peak hour and would therefore meet the City of Sunnyvale's adverse intersection impact criteria.

The currently unsignalized intersection at Wolfe Road and Maude Avenue is being signalized by Intuitive Surgical as a part of the 1050 Kifer Road project. With signalization, the intersection would operate at an acceptable LOS C under existing plus project conditions during the PM peak hour.

Freeway Impact Analysis

VTA CMP guidelines define that a project would cause a freeway impact if the project deteriorates freeway levels of service from an acceptable level to an unacceptable level, or if the freeway already operates at an unacceptable level under existing conditions, the project would add traffic exceeding 1% of the freeway capacity. The results of the CMP freeway analysis show that the project would have an adverse impact on the following freeway segments:

- SR 237 Eastbound between Lawrence Expressway and Great America Parkway – PM Peak Hour
- SR 237 Westbound between Great America Parkway and Lawrence Expressway – AM Peak Hour

To address the project impact, a trip reduction of 27% would be required for the AM peak hour and 37% would be required for the PM peak hour. As discussed above, the projects within the proposed LSAP plan area would be required to implement TDM measures achieving a 30% peak hour trip reduction. It is unclear whether higher trip reductions are attainable.

The VTA's Valley Transportation Plan (VTP) 2040 identifies freeway express lane projects along SR 237 between N. First Street and SR 85. On the identified freeway segments, the existing HOV lanes are proposed to be converted to express lanes. According to the latest VTA CMP Monitoring Report, the HOV lanes on the impacted segments currently are operating at acceptable levels of service. Therefore, converting the HOV lanes to express lanes could potentially add capacity to the freeway segment. Projects within the proposed LSAP plan area shall participate in VTA's Voluntary Freeway Contribution Program to fund improvements along SR 237.

Freeways are under Caltrans jurisdiction. Therefore, capacity improvements on freeways are beyond the capabilities of the City of Sunnyvale.

Freeway Ramp Capacity Analysis

For the purpose of this study, the project is said to create an adverse impact on a freeway ramp if its implementation:

- Would cause the volume-to-capacity (V/C) ratio of the freeway ramp to exceed 1.0; or
- Would increase the amount of traffic on a freeway ramp that is already exceeding its capacity by more than one percent (1%) of the ramp's capacity.

The results of the ramp analysis show that the study freeway ramps currently have sufficient capacity to service the existing traffic volumes and the ramps would continue to operate below capacity under project conditions.

Other Transportation Issues

Hexagon conducted a site plan review, queuing analysis, pedestrian, bicycle and transit facility analysis and parking analysis for the proposed project. Our recommendation is listed below.

Recommendation

- The project applicant shall ensure that there would not be tall vegetation or objects that could block a driver's view 360 feet down the road as they exit the project driveways on Kifer Road.

Table ES- 2
Signalized Intersection Level of Service Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Existing + Project Conditions Avg. Delay (sec)	Existing + Project Conditions LOS	Existing + Project Conditions In Crit. Delay (sec)	Existing + Project Conditions Incr. In Crit. V/C	Background Conditions Avg. Delay (sec)	Background Conditions LOS	Background + Project Conditions Avg. Delay (sec)	Background + Project Conditions LOS	Background + Project Conditions In Crit. Delay (sec)	Background + Project Conditions Incr. In Crit. V/C
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-	51.5	D-	0.1	0.002	73.3	E	73.3	E	0.0	0.002
		PM	12/13/18		60.1	E	59.9	E+	0.1	0.001	78.0	E-	78.3	E-	0.5	0.001
2	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+	21.4	C+	0.1	0.004	26.5	C	26.8	C	0.5	0.004
		PM	05/08/18		22.8	C+	23.8	C	1.8	0.030	32.7	C-	36.4	D+	7.5	0.029
3	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+	20.6	C+	0.0	0.002	21.5	C+	21.4	C+	0.1	0.002
		PM	05/08/18		13.8	B	13.7	B	0.0	0.001	14.7	B	14.7	B	0.0	0.001
4	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-	31.8	C	-0.1	0.003	33.6	C-	33.4	C-	0.1	0.003
		PM	05/08/18		30.2	C	30.3	C	0.0	0.001	35.2	D+	35.3	D+	0.7	0.019
5	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+	23.0	C+	0.2	0.003	23.8	C	23.9	C	0.1	0.003
		PM	05/08/18		19.8	B-	19.6	B-	0.0	0.002	22.2	C+	22.1	C+	0.0	0.002
6	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-	34.9	C-	0.1	0.003	36.2	D+	36.2	D+	0.1	0.003
		PM	05/08/18		44.5	D	45.7	D	1.8	0.020	47.1	D	48.8	D	2.5	0.019
7	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+	10.7	B+	0.0	0.001	10.2	B+	10.2	B+	0.0	0.002
		PM	12/06/17		15.7	B	15.6	B	0.0	0.000	15.7	B	15.6	B	0.0	0.000
8	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B	16.1	B	0.6	0.023	15.8	B	16.4	B	0.7	0.023
		PM	05/08/18		25.9	C	28.7	C	3.6	0.040	31.6	C	36.4	D+	5.2	0.041
9	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+	36.1	D+	0.4	0.017	39.7	D	40.3	D	1.1	0.017
		PM	05/08/18		29.8	C	29.8	C	0.1	0.021	34.0	C-	34.4	C-	0.6	0.020
10	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-	34.2	C-	1.4	0.023	35.2	D+	36.1	D+	1.5	0.024
		PM	05/08/18		33.7	C-	33.5	C-	-0.3	0.016	34.9	C-	34.9	C-	0.0	0.018
11	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D	41.1	D	0.2	0.007	42.1	D	42.3	D	0.2	0.006
		PM	10/30/18		41.8	D	42.0	D	0.0	0.001	46.2	D	46.5	D	0.7	0.008
12	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D	43.0	D	0.1	0.004	56.8	E+	57.6	E+	1.0	0.004
		PM	10/30/18		43.6	D	44.1	D	0.7	0.008	46.6	D	47.2	D	1.1	0.009
13	Wolfe Road & Maude Avenue (1)	AM	12/06/17	D	-	-	-	-	-	-	20.1	C+	20.3	C+	0.0	0.008
		PM	12/06/17		-	-	-	-	-	-	24.7	C	24.3	C	0.1	0.002
14	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+	22.4	C+	-0.1	0.002	24.2	C	23.9	C	-0.1	0.002
		PM	11/15/17		30.8	C	30.8	C	-0.1	0.001	30.4	C	30.3	C	0.0	0.001
15	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+	35.5	D+	-0.1	0.002	34.9	C-	34.6	C-	-0.1	0.002
		PM	11/14/17		40.8	D	40.7	D	0.0	0.001	39.9	D	39.7	D	0.0	0.000
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	37.2	D+	37.4	D+	0.0	0.000	41.2	D	41.5	D	0.0	0.000
		PM	12/06/17		**71.0**	**E**	**74.3**	**E**	**5.5**	**0.020**	**93.5**	**F**	**98.4**	**F**	**7.9**	**0.020**

Notes:

** = CMP, County = County of Santa Clara*

">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.

(1) The intersection of Wolfe Road and Maude Avenue will be converted from side-street stop control under existing conditions to signal control under background conditions.

BOLD indicates an unacceptable level of service

BOLD and boxed indicates an adverse intersection impact

Table ES- 2 (Continued)
Signalized Intersection Level of Service Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Existing + Project Conditions Avg. Delay (sec)	Existing + Project Conditions LOS	Existing + Project Conditions In Crit. Delay (sec)	Existing + Project Conditions Incr. In Crit. V/C	Background Conditions Avg. Delay (sec)	Background Conditions LOS	Background + Project Conditions Avg. Delay (sec)	Background + Project Conditions LOS	Background + Project Conditions In Crit. Delay (sec)	Background + Project Conditions Incr. In Crit. V/C
17	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C	32.8	C-	4.0	0.040	39.8	D	43.8	D	4.0	0.040
		PM	11/14/17		43.1	D	45.5	D	2.8	0.024	49.5	D	52.8	D-	4.1	0.024
18	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+	38.5	D+	-0.1	0.006	41.0	D	41.0	D	0.0	0.006
		PM	11/15/17		36.5	D+	36.4	D+	0.0	0.007	37.7	D+	37.7	D+	0.0	0.007
19	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+	37.2	D+	0.4	0.009	36.8	D+	37.1	D+	0.4	0.009
		PM	11/14/17		38.9	D+	39.0	D	-0.1	0.004	40.3	D	40.5	D	0.0	0.004
21	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	11.9	B+	12.3	B	0.3	0.013	12.8	B	13.1	B	0.4	0.011
		PM	05/23/19		14.0	B	14.1	B	0.0	0.010	15.6	B	15.7	B	0.1	0.002
22	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	7.9	A	8.3	A	0.6	0.016	11.2	B+	12.8	B	2.7	0.016
		PM	05/23/19		22.3	C+	22.0	C+	0.0	0.003	28.5	C	28.5	C	0.5	0.003
23	Lawrence Expressway & Oakmead Parkway (County)	AM	05/23/19	E	40.4	D	40.3	D	0.1	0.004	70.3	E	70.0	E	0.2	0.003
		PM	05/23/19		52.3	D-	52.4	D-	0.1	0.002	**80.8**	**F**	**81.4**	**F**	**1.6**	**0.002**
24	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	48.2	D	48.1	D	0.4	0.004	68.4	E	69.2	E	2.3	0.004
		PM	11/13/18		71.6	E	71.1	E	0.2	0.002	**113.8**	**F**	**113.7**	**F**	**1.4**	**0.003**
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-	56.9	E+	5.8	0.023	**106.4**	**F**	**111.0**	**F**	**8.7**	**0.023**
		PM	03/07/18		**101.6**	**F**	**>120**	**F**	**52.2**	**0.065**	**>120**	**F**	**>120**	**F**	**32.5**	**0.068**
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**	**>120**	**F**	**11.1**	**0.016**	**>120**	**F**	**>120**	**F**	**11.6**	**0.016**
		PM	11/13/18		61.8	E	62.1	E	0.4	0.015	70.2	E	73.0	E	4.9	0.015
27	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	46.1	D	47.8	D	2.9	0.015	**116.3**	**F**	**>120**	**F**	**8.6**	**0.015**
		PM	11/13/18		49.7	D	51.0	D-	2.6	0.017	**109.7**	**F**	**114.9**	**F**	**9.2**	**0.017**
28	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A	7.9	A	-0.2	0.018	9.3	A	9.2	A	-0.2	0.018
		PM	11/15/17		9.0	A	9.1	A	0.0	0.002	9.2	A	9.4	A	0.0	0.002
29	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D	46.6	D	0.2	0.011	70.2	E	71.8	E	2.6	0.010
		PM	11/13/18		53.8	D-	54.2	D-	0.7	0.012	**83.4**	**F**	**85.8**	**F**	**5.0**	**0.012**
30	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C	29.7	C	0.8	0.016	31.8	C	33.1	C-	1.8	0.017
		PM	03/07/18		28.6	C	29.3	C	4.6	-0.035	36.7	D+	37.1	D+	0.0	0.000
31	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B	14.2	B	1.0	0.108	17.6	B	17.6	B	0.6	0.109
		PM	09/11/18		9.4	A	8.7	A	-0.3	0.101	20.7	C+	21.2	C+	0.8	0.101
32	1020 Kifer Rd Driveway & Kifer Road	AM	-	D	Future Intersection		11.0	B+	-	-	12.3	B	20.1	C+	0.0	0.083
		PM	-				15.4	B	-	-	18.3	B-	30.7	C	10.3	0.164

Notes:
** = CMP, SC = Santa Clara, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Table ES- 3
Unsignalized Intersection Level of Service Summary

					Existing			Existing plus Project					Background			Background plus Project				
#	Intersection	Control [1]	Peak Hour	Count Date	Delay (sec)	LOS	Signal Warrant Met	Delay (sec)	LOS	Incr. in Delay	Incr. in V/C	Signal Warrant Met	Delay (sec)	LOS	Signal Warrant Met	Delay (sec)	LOS	Incr. in Delay	Incr. in V/C	Signal Warrant Met
13	Wolfe Road & Maude Avenue (2)	side-street	AM	12/06/17	25.7	D	No	27.6	D	1.9	0.005	No	-	-	-	-	-	-	-	-
		stop	PM	12/06/17	**67.4**	**F**	**Yes**	**73.6**	**F**	**6.2**	**0.001**	**Yes**	-	-	-	-	-	-	-	-
20	Commercial Street & Kifer Road	side-street	AM	12/06/17	12.3	B	No	29.6	D	17.3	0.245	No	16.2	C	No	**89.0**	**F**	**72.8**	**0.459**	**Yes**
		stop	PM	12/06/17	24.1	C	Yes	**114.0**	**F**	**89.9**	**0.415**	**Yes**	**95.9**	**F**	**Yes**	**>120**	**F**	**341.3**	**0.754**	**Yes**

Notes:

">120" indicates this unsignalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.

(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.

(2) The intersection of Wolfe Road and Maude Avenue will be converted from side-street stop control under existing conditions to signal control under background conditions.

BOLD indicates an unacceptable level of service

BOLD and boxed indicates an adverse intersection impact

1. Introduction

This report presents the results of the transportation impact analysis (TIA) conducted for the proposed Intuitive Surgical Engineering Campus Expansion at 932, 950, and 945-955 Kifer Road in Sunnyvale, California. The project comprises a 15.6-acre site located on the north side of Kifer Road and a 16.8-acre site located on the south side of Kifer Road between Lawrence Expressway and Wolfe Road (see Figure 1). The project proposes 380,000 square feet of office space on the north site and 900,000 square feet of research and development space on the south site[1]. The two sites would be connected by a private pedestrian bridge across Kifer Road and would be integrated with the existing nearby Intuitive Surgical facilities. The project proposes to construct the office building on the north site to replace an existing surface parking lot. The research and development building on the south site would replace an existing office building and vacant industrial building. Access to the north site would be primarily provided via a proposed signalized driveway at the east property line, as well as a visitor driveway to the west. Access to the south site would be primarily provided via a proposed driveway on the south leg of the Commercial Street and Kifer Road intersection, as well as a visitor driveway to the east (see Figure 2).

Scope of Study

This study was conducted for the purpose of identifying the potential near-term traffic impacts related to the proposed development. The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project, and the potential long-term traffic impacts are presented in the traffic study conducted for the LSAP-Update.

Since the project is estimated to generate more than 100 peak hour trips, the potential impacts of the project were evaluated in accordance with the standards set forth by the City of Sunnyvale and the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP). The traffic study includes an analysis of AM and PM peak hour traffic conditions for 32 intersections in the vicinity of the project site. Seven of the study intersections are CMP intersections. Two of the study intersections are unsignalized intersections under existing conditions. Under background plus project conditions, the unsignalized Wolfe Road and Maude Avenue intersection would be converted to a signalized intersection and the signalized 1020 Kifer Road Driveway/Kifer Road intersection would be added to the network. The study intersections were selected to include locations where the proposed project is expected to generate 10 or more peak-hour trips per lane.

[1] The project size has since been reduced to 364,000 square feet of office space (including 13,000 square feet of cafeteria space) on the north site and 847,000 square feet of research and development space (including 16,000 square feet of cafeteria space) and an 11,000 square-foot detached amenity building on the south site. This analysis reflects a slightly conservative project description.

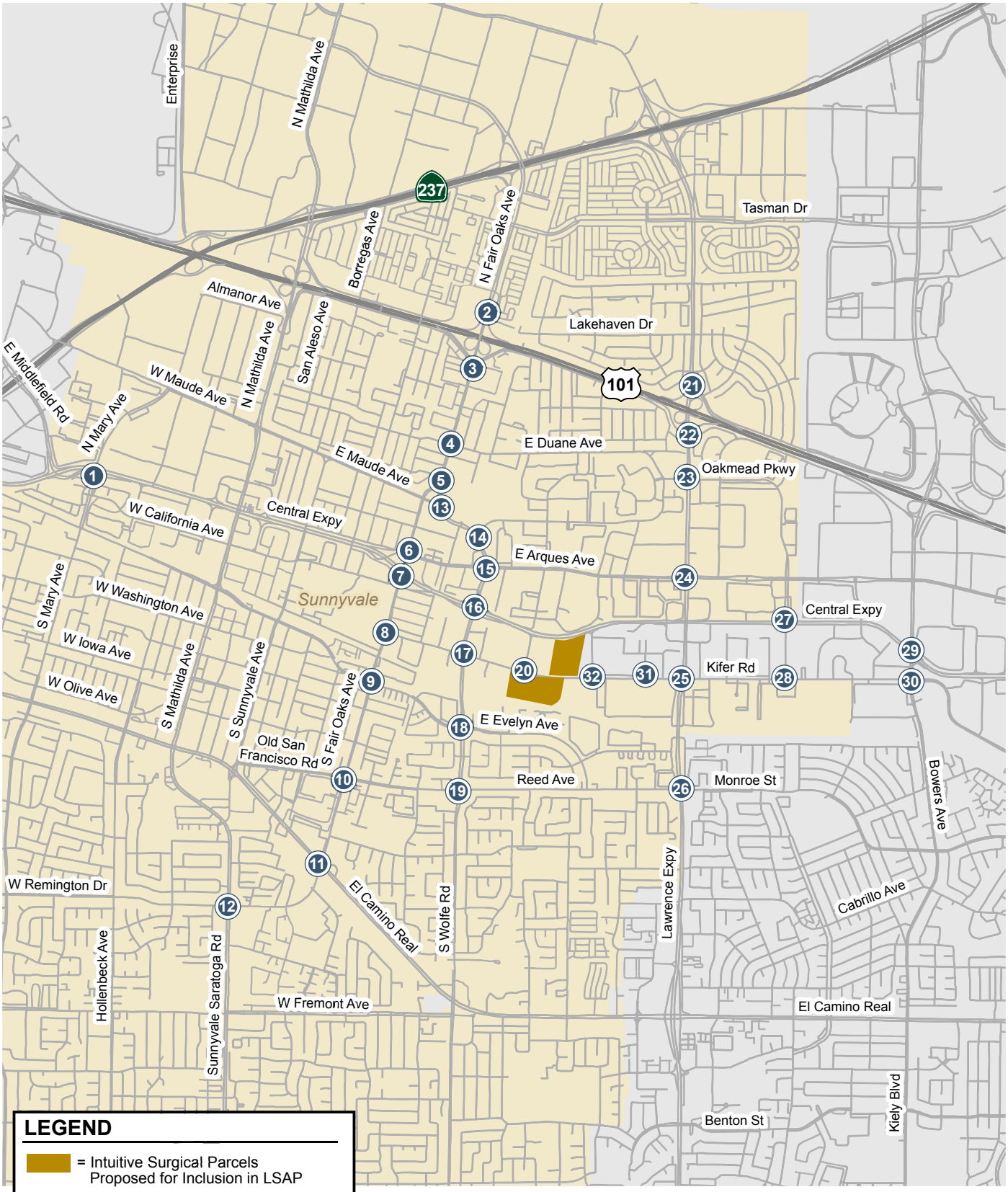


Figure 1
Site Location and Study Intersections



Figure 2
Proposed Project Site Plan

NORTH
Not to Scale

The Santa Clara County VTA CMP guidelines require that the CMP freeway segments be evaluated to determine the impact of added traffic for projects that generate trips equal to or greater than one percent of the freeway segment's capacity. The proposed project is expected to generate added traffic volume on four freeway segments along US 101 and SR 237. The traffic analysis also includes a capacity analysis for six freeway ramps.

The study intersections, freeway segments, and freeway ramps are listed below.

Study Intersections

1. Mary Avenue & Central Expressway *
2. Fair Oaks Avenue & US 101 Northbound Ramps
3. Fair Oaks Avenue & Ahwanee Avenue
4. Fair Oaks Avenue & Duane Avenue
5. Fair Oaks Avenue & Wolfe Road
6. Fair Oaks Avenue & Arques Avenue
7. Fair Oaks Avenue & California Avenue
8. Fair Oaks Avenue & Kifer Road
9. Fair Oaks Avenue & Evelyn Avenue
10. Fair Oaks Avenue & Old San Francisco Road
11. Fair Oaks Avenue & El Camino Real *
12. Sunnyvale Saratoga Road & Remington Drive *
13. Wolfe Road & Maude Avenue (unsignalized)
14. Wolfe Road & Stewart Drive
15. Wolfe Road & Arques Avenue
16. Wolfe Road & Central Expressway Ramps
17. Wolfe Road & Kifer Road
18. Wolfe Road & Evelyn Avenue
19. Wolfe Road & Reed Avenue
20. Commercial Street & Kifer Road (unsignalized)
21. Lawrence Expressway & US 101 Northbound Ramps
22. Lawrence Expressway & US 101 Southbound Ramps
23. Lawrence Expressway & Oakmead Parkway
24. Lawrence Expressway & Arques Avenue*
25. Lawrence Expressway & Kifer Road
26. Lawrence Expressway & Reed Avenue/Monroe Road*
27. Oakmead Parkway & Central Expressway *
28. Corvin Drive & Kifer Road [City of Santa Clara]
29. Bowers Avenue & Central Expressway *
30. Bowers Avenue & Kifer Road [City of Santa Clara]
31. Semiconductor Drive & Kifer Road
32. Project Driveway & Kifer Road (future intersection)

* Denotes CMP intersections

Freeway Segments

US 101

1. Between Mathilda Avenue and Fair Oaks Avenue
2. Between Fair Oaks Avenue and Lawrence Expressway
3. Between Lawrence Expressway and Bowers Avenue/Great America Parkway

SR 237

4. Between Lawrence Expressway and Great America Parkway

Study Freeway Ramps

US 101 and Fair Oaks Avenue Interchange

1. Northbound On-Ramp from Fair Oaks Avenue
2. Southbound Off-Ramp to Southbound Fair Oaks Avenue

US 101 and Lawrence Expressway Interchange

3. Southbound On-Ramp from Northbound Lawrence Expressway
4. Northbound Off-Ramp to Lawrence Expressway
5. Northbound On-Ramp from Northbound Lawrence Expressway
6. Southbound Off-Ramp to Lawrence Expressway

Traffic conditions at the study intersections were analyzed for both the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour is expected to occur between 7:00 AM and 10:00 AM, and the PM peak hour is expected to occur between 4:00 PM and 7:00 PM on a regular weekday. These are the peak commute hours during which most traffic congestion occurs on the roadways.

Traffic conditions were evaluated for the scenarios described below.

Scenario 1: *Existing Conditions.* Existing traffic volumes at study intersections were based on traffic counts conducted in 2017 through 2019, as well as the 2018 CMP TRAFFIX database. Existing traffic count data is provided in Appendix A.

Scenario 2: *Background Conditions.* Background conditions were estimated by adding to existing traffic volumes the project traffic from approved but not yet completed and occupied developments in the study area. Approved project trips and approved project trip information were obtained from the City of Sunnyvale and the City of Santa Clara. In addition, roadway improvements associated with the approved developments were assumed as directed by City Staff.

Scenario 3: *Existing Plus Project Conditions.* Existing plus project conditions were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.

Scenario 4: *Background Plus Project Conditions.* Background traffic volumes with the project were estimated by adding to background traffic volumes the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts.

According to VTA's CMP TIA guidelines, a scenario analyzing project impacts under cumulative conditions is also required. Because the project is consistent with the proposed update of the Lawrence Station Area Plan (LSAP), the cumulative project impacts are included in the *Lawrence Station Area Plan Update Transportation Impact Analysis* that is concurrently prepared.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from the City of Sunnyvale, the City of Santa Clara, the VTA CMP TRAFFIX database, county records for freeways and expressways, Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition (2017)*, field observations, and previous traffic studies. The following data were collected from these sources:

- Existing traffic volumes,
- Existing lane configurations,
- Signal timing and phasing,
- Applicable trip generation rates, and
- Approved projects information.

Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The level of service analysis was supplemented with a queuing analysis for selected movements at the study intersections and an analysis of freeway segments and freeway ramps in the study area. In addition, the unsignalized intersection of Commercial Street and Kifer Road was evaluated to determine if the intersection would meet the peak hour signal warrant. The various analysis methods are described in further detail below.

Signalized Study Intersections

The City of Sunnyvale and City of Santa Clara level of service analysis methodologies for signalized intersections are the *Highway Capacity Manual* (HCM) 2000 operations method. This method is applied using the TRAFFIX software. The HCM 2000 operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated traffic impact analysis tool, the City of Sunnyvale and City of Santa Clara employ the CMP default values for the analysis parameters within the software.

The Cities of Sunnyvale and Santa Clara level of service standards for signalized intersections are all LOS D or better. Within the City of Sunnyvale, intersections on roadways considered to be "regionally significant" have a standard of LOS E. In the study area, signalized intersections within Sunnyvale along El Camino Real, Sunnyvale-Saratoga Road, Central Expressway and Lawrence Expressway are considered regionally significant. The correlation between average control delay and level of service is shown in Table 1.

CMP Intersections

The designated level of service analysis methodology for the CMP is also the HCM 2000 operations method for signalized intersections, using TRAFFIX. The CMP level of service standard for signalized intersections within the City of Sunnyvale and the City of Santa Clara is LOS E or better.

Table 1
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec/veh)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0
Source:	Transportation Research Board, 2000 Highway Capacity Manual (Washington, D.C., 2000) p10-16. VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.	

Unsignalized Study Intersections

The level of service for the unsignalized intersections was evaluated using the 2000 HCM methodology. Level of service for unsignalized (stop-controlled and yield controlled) intersections is evaluated based on the delay experienced by vehicles on the controlled approaches. For two-way or T-intersections, operations are defined by the average control delay experienced by the worst approach. For all-way stop controlled intersections, the level of service is reported based on the average delay for all approaches. The City of Sunnyvale General Plan level of service standard for unsignalized intersections is LOS D or better.

The correlation between delay and level of service for unsignalized intersections is shown in Table 2.

Table 2
Unsignalized Intersection Level of Service Based on Delay

Level of Service	Description	Average Delay Per Vehicle (sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Traffic Signal Warrant Analysis

An assessment of the need for signalization was conducted for unsignalized study intersections. For this study, the need for signalization was assessed on the basis of the peak hour volume signal warrant (Warrant #3) described in the 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD). This method provides an indication of whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify the installation of a traffic signal. It should be noted that it is just one of the factors/warrants used to indicate whether installation of a traffic control signal is justified.

Freeway Segments

Within Santa Clara County, freeway segments are analyzed as prescribed in the Santa Clara County CMP technical guideline. The level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

Where:

D = density, in vehicles per mile per lane (vpmpl)

V = peak hour volume, in vehicle per hour (vph)

N = number of travel lanes

S = average travel speed, in miles per hour (mph)

The vehicle density on a segment is correlated to level of service as shown in Table 3. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from high-occupancy vehicle (HOV) lanes (otherwise known as carpool lanes). The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments three lanes or wider in one direction, and a capacity of 2,200 vphpl be used for segments two lanes wide in one direction. HOV lanes are specified as having a capacity of 1,650 vphpl. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 3
Freeway Segment Level of Service Definition

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	11.0 or less
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	11.0 to 18.0
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	18.0 to 26.0
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	26.0 to 46.0
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	46.0 to 58.0
F	Vehicular flow breakdowns occurs. Large queues form behind breakdown points.	greater than 58.0
Source:	Santa Clara County Valley Transportation Authority, Transportation Impact Analysis Guidelines, Updated March 2009 (Based on the Highway Capacity Manual (2000), Washington, D.C.)	

Freeway Ramps

A freeway ramp analysis was performed in order to verify that the freeway ramps would have sufficient capacity to serve the expected traffic volumes with and without the project. This analysis consisted of a volume-to-capacity ratio evaluation of the freeway ramps at the study interchanges. The ramp capacities were obtained from the *Highway Capacity Manual 2000*, and considered the free-flow speed, number of lanes on the ramp, and ramp metering.

Vehicle Queuing

For selected high-demand movements at the study intersections, the estimated maximum vehicle queues were compared to the existing or planned storage capacity. The queuing analysis is presented for informational purposes only. The City of Sunnyvale does not have impact criteria for intersection queuing. However, in the City of Sunnyvale, a project is said to create an operational deficiency if the background plus project conditions increases the 95th percentile queue by one vehicle for a movement that is already over capacity compared to the background conditions.

Vehicle queues were calculated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x = n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

$P(x = n)$ = probability of "n" vehicles in queue per lane

n = number of vehicles in the queue per lane

λ = Average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. The 95th percentile queue length is also known as the "design queue length."

Adverse Impact Criteria

Criteria are used to establish what constitutes an adverse impact. For this analysis, the criteria used to determine impacts on signalized and unsignalized intersections as well as freeway facilities are based on the City of Sunnyvale, the City of Santa Clara, and VTA's CMP level of service standards.

The effects of the project on other transportation facilities, such as bicycle facilities and transit service, were determined on the basis of engineering judgment.

Definition of Intersection Impacts at Signalized Intersections

The project is said to create an adverse impact on traffic conditions at a signalized intersection in the City of Sunnyvale and the City of Santa Clara if for the study peak hour:

1. The level of service at the intersection drops below its respective level of service standard when project traffic is added; or
2. An intersection that operates below its level of service standard under no project conditions experiences an increase in critical-movement delay of four (4) or more seconds, *and* the critical volume-to-capacity ratio (v/c) is increased by 0.01 or more when project traffic is added.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the threshold is when the project increases the critical V/C value by 0.01 or more.

An impact by the City of Sunnyvale, City of Santa Clara and CMP standards is said to be satisfactorily addressed when measures are implemented that would restore intersection conditions to its LOS standard *or* to an average delay equal to without-project conditions or better.

Definition of Intersection Impacts at Unsignalized Intersections

City of Sunnyvale

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in type of intersection control (i.e. all-way stop or signalization). As part of this evaluation, traffic volumes, delays, and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

Per City of Sunnyvale guidelines, for determining the level of service for unsignalized intersections, the average intersection delay is used for all-way stop controlled intersections, and the worst movement delay is used for side-street stop-controlled intersections. Project impacts at the City's unsignalized intersections would be considered if one of the following criteria is met:

1. If an intersection operates at an acceptable LOS (i.e. D or better) without the project and degrades to an unacceptable LOS (i.e. LOS E or F) with the addition of project traffic.
2. If an unsignalized intersection operates at an unacceptable LOS (i.e. LOS E or F) without the project and the addition of project traffic increases:
    a. The average intersection delay by four (4) seconds or more, and the volume-to-capacity value by 0.01 or more for all-way stop controlled intersections; or
    b. The worst movement delay by four (4) seconds or more, and the volume-to-capacity value by 0.01 or more for side-street stop controlled.

3. Intersection meets the warrant(s) for installation of a traffic signal as per the latest edition of California Manual on Uniform Traffic Control Devices.

Definition of Freeway Impacts

For this analysis, the criteria used to determine impacts on freeway segments are based on CMP standards. Per CMP requirements, freeway impacts are measured relative to existing conditions (i.e. there is no evaluation of freeways under background conditions). The project is said to create an adverse impact on traffic conditions on a freeway segment if for either peak hour:

1. The level of service of the freeway segment drops below the LOS E standard when project traffic is added; or
2. The level of service of the freeway segment is LOS F under existing conditions and the number of new trips added by the project is more than one percent of the freeway capacity.

Definition of Freeway Ramp Impacts

A freeway ramp analysis was performed in order to verify that the freeway ramps would have sufficient capacity to serve the expected traffic volumes with and without the project. For the purpose of this study, the project is said to create an adverse impact on a freeway ramp if its implementation:

1. Causes the volume-to-capacity (v/c) ratio of the freeway ramp to exceed 1.0; or
2. Increases the amount of traffic on a freeway ramp that is already exceeding its capacity by more than one percent (1%) of the ramp's capacity.

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes the existing roadway network, transit services, and pedestrian and bicycle facilities. Chapter 3 presents the traffic conditions in the study area under background conditions. Chapter 4 describes the methods used to estimate the project traffic on the roadway network and presents the intersection operations under existing plus project and background plus project conditions. Also included in Chapter 4 are the freeway segment and freeway ramp analyses. Chapter 5 provides an evaluation of other transportation related issues for the proposed project, such as vehicle queuing, potential project impacts on transit, pedestrian, and bicycle facilities, site access and circulation, and parking. Chapter 6 presents the traffic study conclusions, including a summary of any recommended improvement measures.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit services, and pedestrian and bicycle facilities.

Existing Roadway Network

Regional access to the study area is provided by US 101.

US 101 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction) in the vicinity of the site. US 101 extends northward through San Francisco and southward through Gilroy. Access to and from the project area is provided via full interchanges at Fair Oaks Avenue and Lawrence Expressway.

Major roadways within or near the project area include: Kifer Road, Lawrence Expressway, Wolfe Road, Fair Oaks Avenue, Central Expressway, Reed Avenue/Monroe Street, Arques Avenue, Evelyn Avenue, and Commercial Street. These roads are described below.

Kifer Road is a four-lane roadway within the project vicinity with a posted speed limit of 40 miles per hour (mph). Kifer Road begins west at Fair Oaks Avenue and extends east towards Bowers Avenue, where it transitions into Walsh Avenue. Kifer Road has a center two-way left-turn median along the entirety of the roadway. On-street parking is prohibited on both sides of Kifer Road within the project vicinity. In the study area, Kifer Road includes sidewalks along some segments of the roadway and crosswalks at the nearby signalized intersections. There are no sidewalks on the south side of Kifer Road fronting the project site. Bike lanes are provided on both sides of Kifer Road between Fair Oaks Avenue and Lawrence Expressway and between Corvin Drive and Uranium Drive. Bike lanes are present on the south side of Kifer Road between the Costco Driveway and Corvin Drive, mainly due to construction on the north side. Kifer Road provides direct access to the project site.

Lawrence Expressway is a north-south, eight-lane expressway with a raised median and a posted speed limit of 50 mph in the project vicinity. It begins at Saratoga Avenue in the south, crosses through Sunnyvale, extends northward and transitions into Caribbean Drive. Lawrence Expressway connects with US 101 via a full-access freeway interchange. Lawrence Expressway includes sidewalks along both sides on most segments and crosswalks at signalized intersections. There are no bike lanes on Lawrence Expressway, but bikes are allowed to ride on the shoulders. On-street parking is not permitted on this roadway. Lawrence Expressway provides regional access to the project site via its interchanges with SR 237, US 101, Central Expressway and I-280.

Wolfe Road is a four-lane to six-lane, north-south arterial that begins at N. Fair Oaks Avenue, and extends south into the City of Cupertino, ending at Stevens Creek Boulevard (its transition point into Miller Avenue). Wolfe Road has a posted speed limit of 35 mph in the project vicinity. Wolfe Road includes sidewalks along most segments in both directions of travel and crosswalks at signalized intersections. Bike routes or lanes are provided along Wolfe Road for its entirety. On-street parking is permitted along only certain segments of the roadway. Wolfe Road provides regional access to the project site via its interchanges with Central Expressway and I-280.

Fair Oaks Avenue is a four-lane to six-lane, north-south roadway with a posted speed limit of 30 mph in the project vicinity. Fair Oaks Avenue begins at Java Drive north of SR 237 and extends southward, and transitions into Remington Drive at its junction with El Camino Real. Sidewalks exist on both sides for most of the segments along with crosswalks, pedestrian push buttons, and signal heads at all major intersections. Bike lanes are present along Fair Oaks Avenue between Evelyn Avenue and Kifer Road, as well as south of Old San Francisco Road. On-street parking is generally permitted north of Old San Francisco Road. Fair Oaks Avenue provides regional access to the project site via its interchanges with SR 237, US 101 and Central Expressway.

Central Expressway is an east-west, four-lane to six-lane expressway. It begins at Trimble Road in the east, crosses Sunnyvale, extends westward and transitions into Alma Street. In the study area, Central Expressway has two eastbound lanes and two westbound lanes and a posted speed limit of 50 mph. Central Expressway is mostly grade-separated within Sunnyvale except at Mary Avenue. The Mary Avenue intersection has crosswalks with pedestrian push buttons and signal heads across all legs. On-street parking is prohibited on Central Expressway and no sidewalks are provided. There are no bike lanes along Central Expressway, but bikes are allowed to ride on the shoulders. Central Expressway connects to Wolfe Road, Commercial Street and Lawrence Expressway in the project vicinity.

Reed Avenue/Monroe Street is a two-lane to four-lane roadway with a posted speed limit of 35 mph in the project vicinity. Reed Avenue/Monroe Street begins west at Wolfe Road as Reed Avenue and extends southeast towards its terminus at Tisch Way in the City of San Jose. Reed Avenue is within the City of Sunnyvale, and transitions to Monroe Street in the City of Santa Clara at its intersection with Lawrence Expressway (Sunnyvale-Santa Clara city boundary). Reed Avenue/Monroe Street has a center two-way left-turn lane that runs along the entirety of the roadway. In the study area, on-street parking is permitted on the north side of Reed Avenue between Wolfe Road and Sitka Terrace, along portions of both sides between Evelyn Avenue and Timberpine Avenue, and along the south side between Timberpine Avenue and Willow Avenue. On Monroe Street, on-street parking is permitted on both sides east of Nobili Avenue. Sidewalks are present along both sides of the street. Bike lanes are provided on both sides of Reed Avenue between Sunnyvale Avenue and Lawrence Expressway and on the north side of Monroe Street between Lawrence Expressway and Nobili Avenue.

Arques Avenue is a two-lane to four-lane roadway with a posted speed limit of 35 mph in the project vicinity. Arques Avenue begins at Stowell Avenue in the west and extends east past San Tomas Expressway and transitions into Scott Boulevard. Arques Avenue connects with Central Expressway via a westbound on-ramp and an eastbound off-ramp. Arques Avenue connects with Lawrence Expressway via a traffic signal. Sidewalks are present along both sides of the street between Wolfe Road and Lawrence Expressway and along the north side between Fair Oaks Avenue and Wolfe Road. Bike lanes are provided east of Fair Oaks Avenue.

Evelyn Avenue is a two-lane to four-lane roadway that begins west at Castro Street in the City of Mountain View and extends east to its terminal at Reed Avenue in the City of Sunnyvale. Within Sunnyvale, Evelyn Avenue generally includes two travel lanes and a center two-way left-turn lane and has a posted speed limit of 30 mph in the study area. Evelyn Avenue includes sidewalks and bicycle lanes on both directions of travel and crosswalks at signalized intersections. On-street parking is permitted along most segments of this roadway.

Commercial Street is a two-lane roadway that is broken into two segments. The northern segment extends north from Central Expressway to Arques Avenue, and the southern segment extends south from Central Expressway to Kifer Road. The southern segment of Commercial Street has a posted speed limit of 25 mph and provides access to the project site via Kifer Road. There are no bike lanes, sidewalks, or on-street parking along the southern segment of Commercial Street.

Existing Transit Service

Existing transit services in the vicinity of the project site are provided by Caltrain, VTA, and ACE. Transit services are described below and shown on Figure 3.

ACE Shuttle Service

The nearest bus stop to the project site is located at the Commercial Street and Kifer Road intersection, within the project area. This bus stop is serviced by the Altamont Commuter Express (ACE) Gray Shuttle (Route 822). ACE provides commuter rail service between Stockton, Tracy, Pleasanton, and San Jose during commute hours. This free shuttle, funded by the Bay Area Air Quality Management District, transports Sunnyvale passengers to and from the ACE Great America Station in Santa Clara. The Gray Shuttle runs on Arques Avenue, Wolfe Road, and Kifer Road, with three southbound trips in the morning (between 6:15 AM and 9:10 AM) and four northbound trips in the afternoon/evening (between 3:10 PM and 6:40 PM) with headways averaging 60 minutes.

Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The project site is located between the Sunnyvale Caltrain Station and the Lawrence Caltrain Station. Caltrain service to both stations is described below.

Sunnyvale Caltrain Station

The Sunnyvale Caltrain Station, located near the intersection of Frances Street and Evelyn Avenue, provides Caltrain service with approximately 15- to 30-minute headways during the weekday AM and PM commute hours and 60-minute headways during weekday midday and night hours as well as on weekends. The Sunnyvale Caltrain Station provides service for all Local, Limited-Stop, and Baby-Bullet trains. The Sunnyvale Caltrain Station is located approximately 7,800 feet from the project site, which is approximately an 8- to 11-minute bike ride. There are continuous pedestrian facilities between the Sunnyvale Caltrain station and the project site. Bicycle lanes are present on Kifer Road, but the ends of Hendy Avenue between Kifer Road and the Sunnyvale Caltrain station do not provide bicycle facilities.

Lawrence Caltrain Station

The Lawrence Caltrain Station, located beneath the Lawrence Expressway overcrossing between Reed Avenue and Kifer Road, provides Caltrain service with approximately 20- to 30-minute headways during the weekday AM and PM commute hours and 60-minute headways during weekday midday and night hours as well as on weekends. The Lawrence Caltrain Station provides service for only Local and Limited-Stop trains. Services are provided between 4:30 AM and 1:45 AM (next day). The Baby-Bullet train does not stop at the Lawrence Caltrain Station. The project site is located about 3,700 feet from the Lawrence Caltrain Station, which is approximately a 14-minute walk or 3-minute bike ride. Continuous pedestrian facilities are not present between the project site and the Lawrence Caltrain Station. The sidewalk fronting the Greystar project site is currently under construction. Crosswalks are lacking at the Osram driveways on Kifer Road and at all intersections and driveways on San Zeno Way. Between the project site and the Lawrence Caltrain station, bicycle lanes are present along Kifer Road, but San Zeno Way does not provide bicycle facilities.

Two free public Caltrain shuttles provide service at the Lawrence Caltrain Station: the Bowers/Walsh shuttle and the Mission shuttle. The shuttle routes are shown on Figure 4. These shuttles are funded jointly by the Bay Area Air Quality Management District, the Peninsula Corridor Joint Powers Board, and private employers.

Existing Pedestrian Facilities

Within the project vicinity, sidewalks and crosswalks are present along most sections of roadways. As shown on Figure 4, sidewalks and crosswalks are missing along only selected sections of the roadways. Along Kifer Road, which is the roadway fronting the project site, sidewalk is mostly missing on both sides of the street west of the project site and on the north side near Corvin Drive. Sidewalk is also missing along certain segments of Corvin Drive, Oakmead Parkway, Arques Avenue, north side on Aster Avenue, and fronting the Greystar (1120 Kifer Road) construction site, the Lawrence Station Development construction site, and the Nuevo construction site. Pedestrian crosswalks and signal heads are present at the nearby signalized intersections. Currently, sidewalks along Kifer Road are generally six feet wide. According to the City's current General Plan Land Use and Transportation Element, Kifer Road, which is a Commercial/Industrial Corridor, should have sidewalks with a width of 11 feet. The current sidewalk widths along Kifer Road do not comply with General Plan standards.

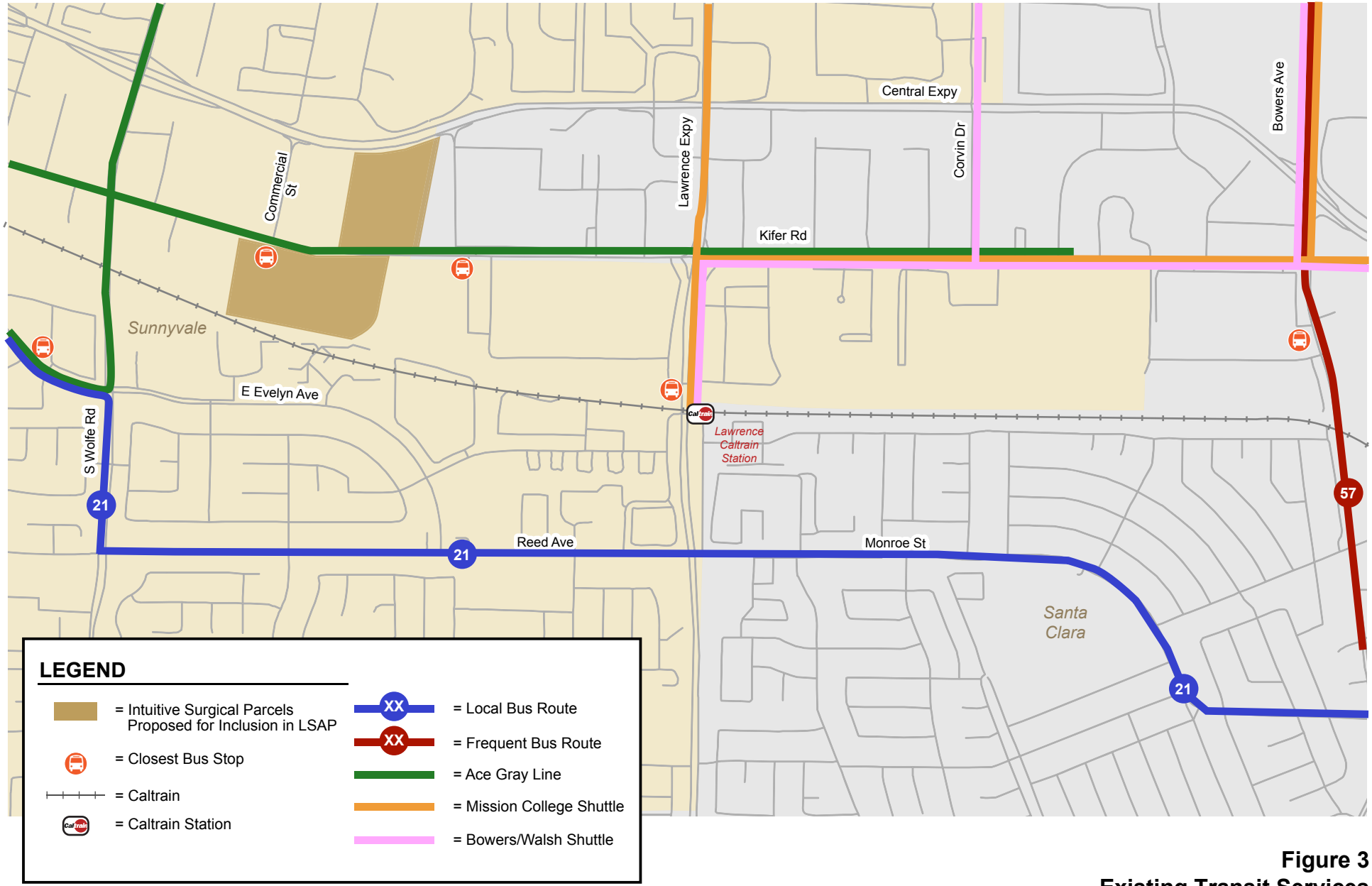


Figure 3
Existing Transit Services

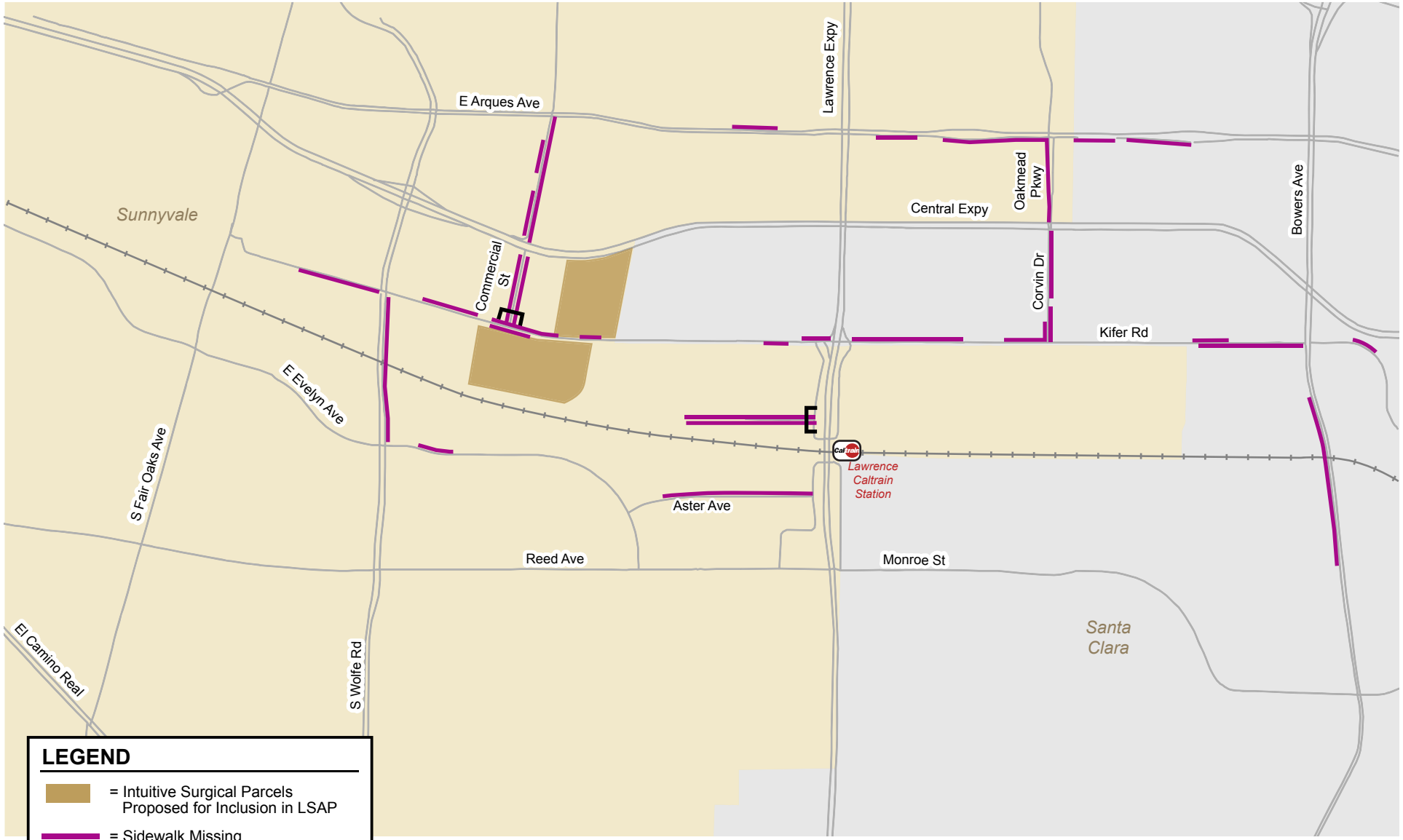


Figure 4
Existing Pedestrian Facilities

NORTH
Not to Scale

Existing Bicycle Facilities

Bicycle facilities in the project vicinity include bike lanes and bike routes. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are streets that accommodate bicycles with pavement markings and signage but are not separate from the travel lanes.

The existing bicycle facilities in the study area are shown on Figure 5. The following bicycle facilities exist within the immediate project vicinity:

Bike Lanes:

- Kifer Road between Fair Oaks Avenue and Lawrence Expressway, and between the Costco Driveway and Uranium Drive
- Fair Oaks Avenue between Evelyn Avenue and Kifer Road
- Evelyn Avenue, along its entire length
- Reed Avenue/Old San Francisco Road between Sunnyvale Avenue and Lawrence Expressway
- Wolfe Road between Reed Avenue and Fair Oaks Avenue
- Arques Avenue/Scott Boulevard between Central Expressway and Fair Oaks Avenue
- Oakmead Parkway between Lawrence Expressway and Central Expressway
- Stewart Drive between Duane Avenue and Wolfe Road
- Duane Avenue between Fair Oaks Boulevard and AMD Place
- DeGuigne Drive/Commercial Street between Duane Avenue and Central Expressway
- Bowers Avenue between Great America Parkway and Chromite Drive
- Aster Avenue between E. Evelyn Avenue and Willow Avenue

Bike routes are present along Wolfe Road between Fremont Avenue and Reed Avenue, on Fair Oaks Avenue between Tasman Drive and Weddell Drive, between Ahwanee Avenue to Kifer Road, and between Evelyn Avenue to Old San Francisco Road, and on Bowers Avenue between El Camino Real and Chromite Drive. According to the *City of Sunnyvale Bike Map, 2018 Edition*, there are three guided bike routes within the City. Each guided route is briefly described below and shown on Figure 5:

- Bike Route 352: This is a generally north-south bike route that extends north from the southern City limits into the Moffett Park area. North of El Camino Real, this route travels along Sunnyvale Avenue until Evelyn Avenue and transitions into Bike Route 353 (described below). South of El Camino Real, this bike route zigzags along local roadways west of Sunnyvale-Saratoga Road, providing access to Fremont High School and Nimitz Elementary School.

- Bike Route 353: This is a generally north-south bike route that extends north from the southern City limits into the Moffett Park area. South of Evelyn Avenue, this route transitions into Bike Route 352 (described above). North of Evelyn Avenue, this route travels mostly along Morse Avenue south of US 101 and along Borregas Avenue north of US 101. Bike Route 353 provides access to Bishop Elementary School and Columbia Middle School.

- Bike Route 600: This is a generally east-west bike route that extends east from the intersection at Bernardo Avenue and El Camino Real and ending east at Poinciana Drive. This route travels parallel and north of El Camino Real along residential roadways (mainly Olive Avenue, Gail Avenue, Iris Avenue and Lily Avenue). This route provides access to the Civic Center, Ellis Elementary School, Braly Elementary School and Ponderosa Elementary School.

A Class I multi-use path has recently been constructed/in the process of construction along the west and south edges of the Intuitive Surgical campus expansion project at 1050 Kifer Road/1127 Sonora Court. This multi-use path would provide pedestrians and bicyclists an alternate path to access the Caltrain station via Sonora Court.

Overall, the existing bicycle facilities in the study area provide adequate connections for bicycles. However, certain segments of Kifer Road east Lawrence Expressway are missing bicycle facilities. Additionally, San Zeno Way, Lawrence Station Road, and Willow Avenue do not provide bicycle facilities, which would otherwise connect the Lawrence Caltrain Station to the surrounding areas.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 6.

Existing Traffic Volumes

The existing traffic volumes were obtained from peak hour traffic counts collected in 2017 through 2019. The existing PM traffic counts for the CMP intersections were collected in 2018. The existing AM and PM peak hour traffic volumes are shown graphically on Figure 7. Traffic count data are included in Appendix A. Traffic volumes at the study intersections for all scenarios of the traffic study are tabulated in Appendix B.

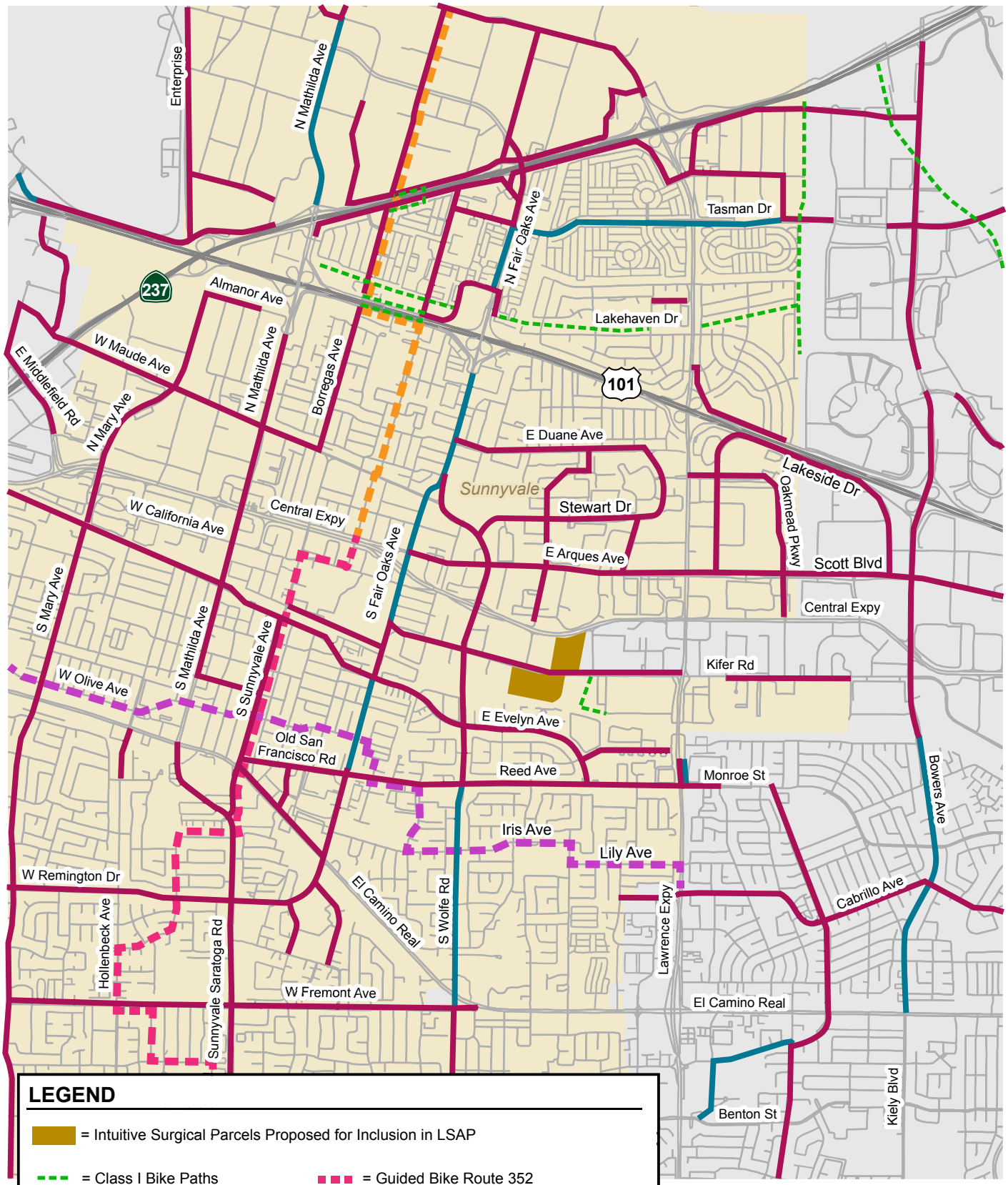


Figure 5
Existing Bicycle Facilities

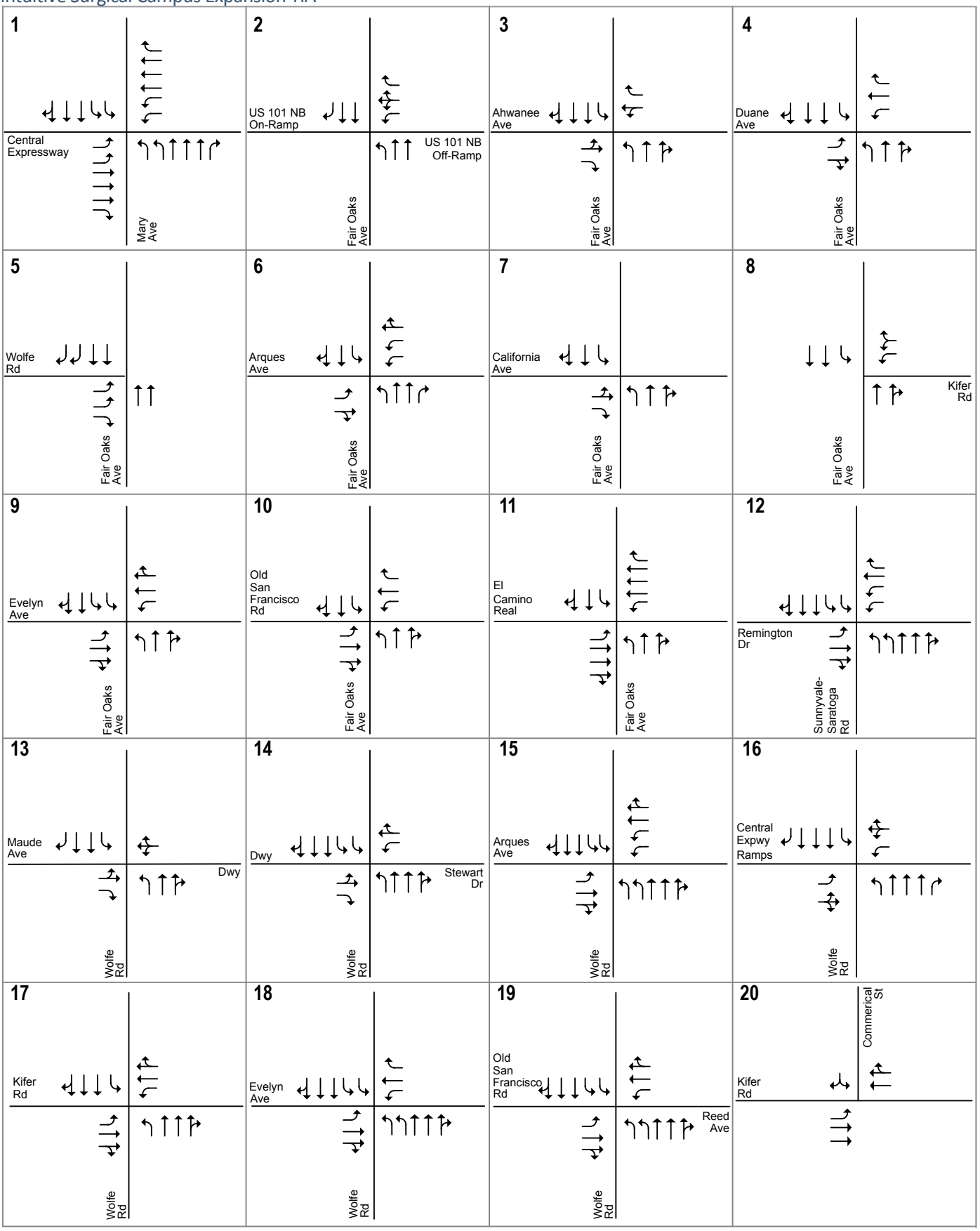
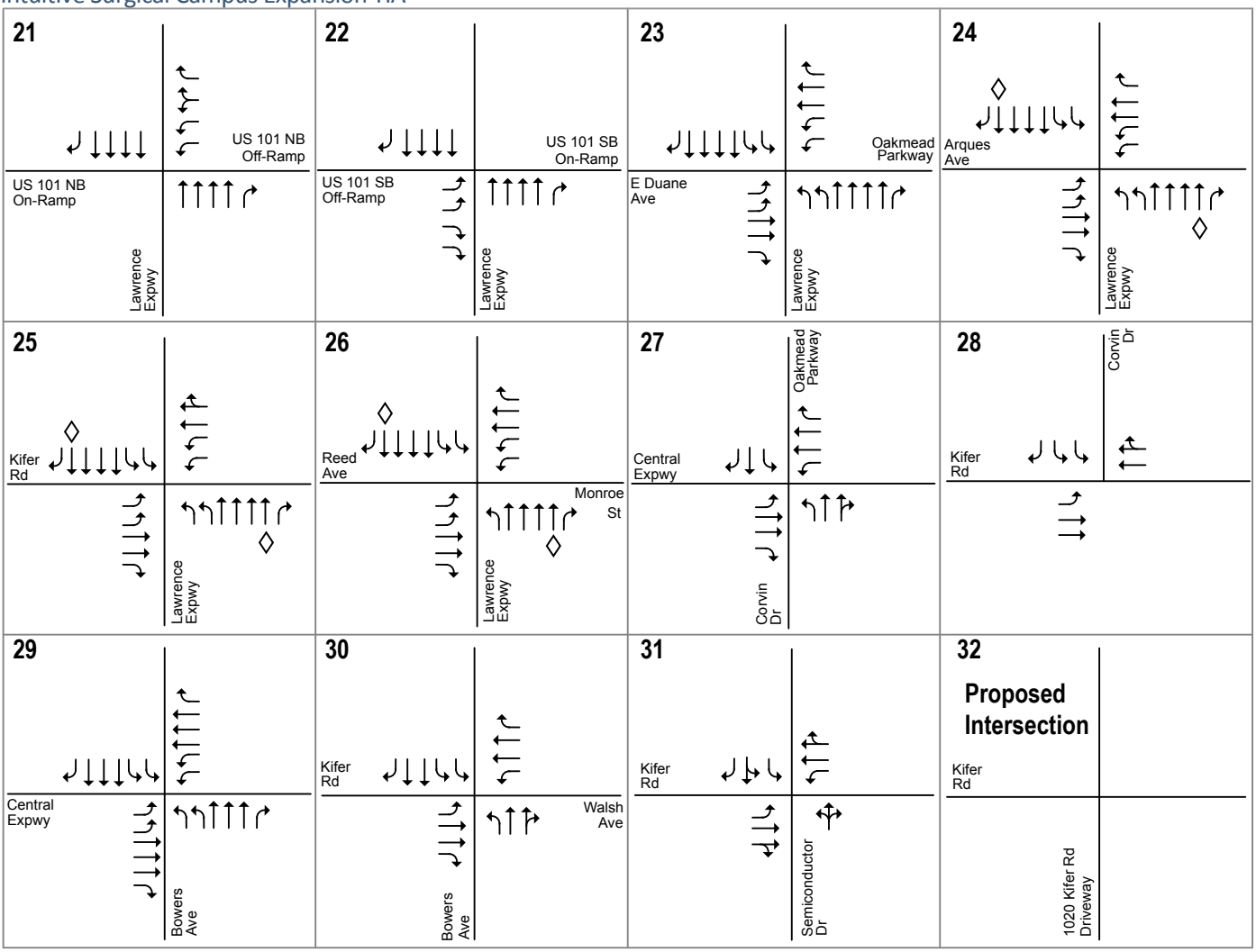


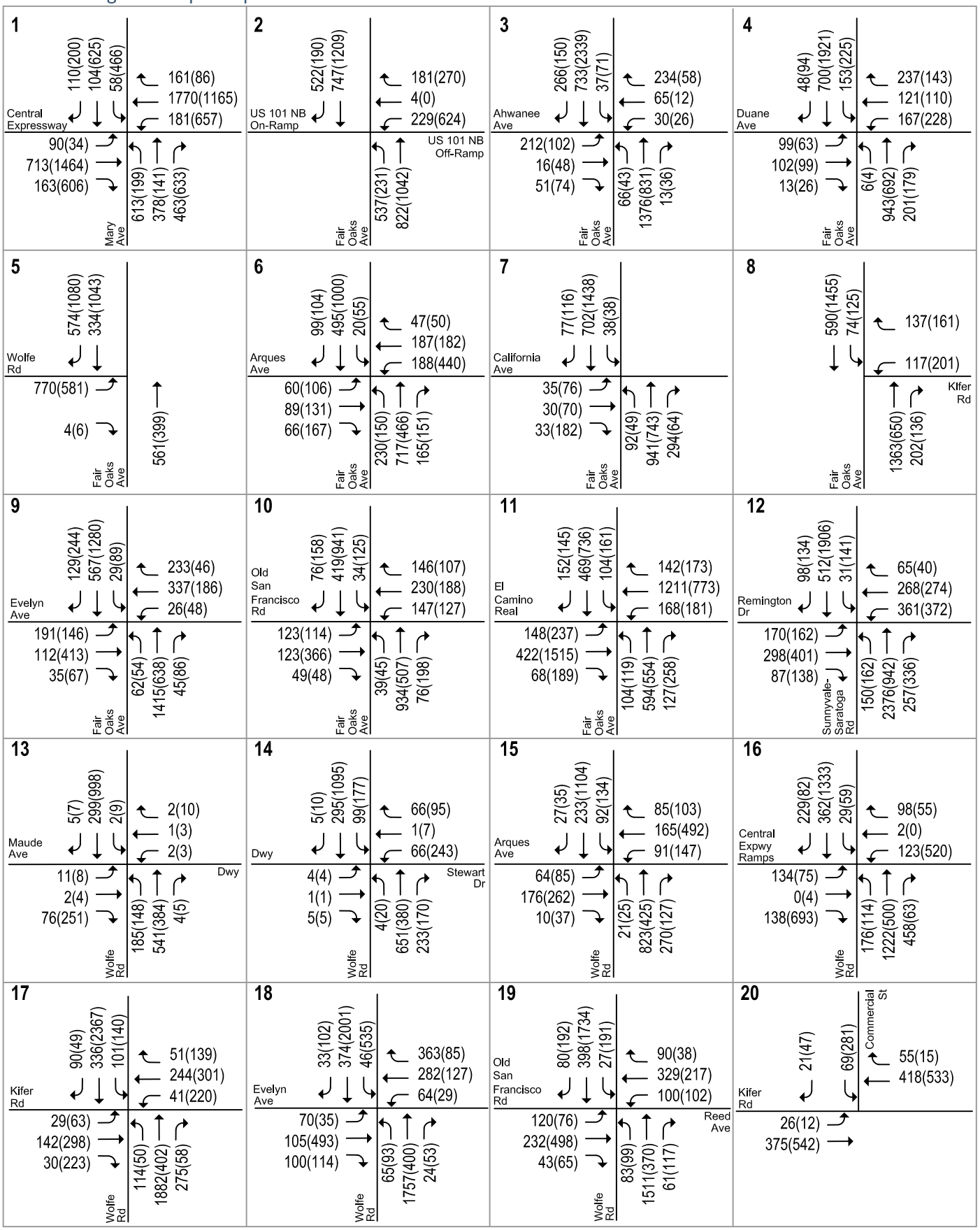
Figure 6
Existing Lane Configurations



LEGEND

◊ = HOV Lane

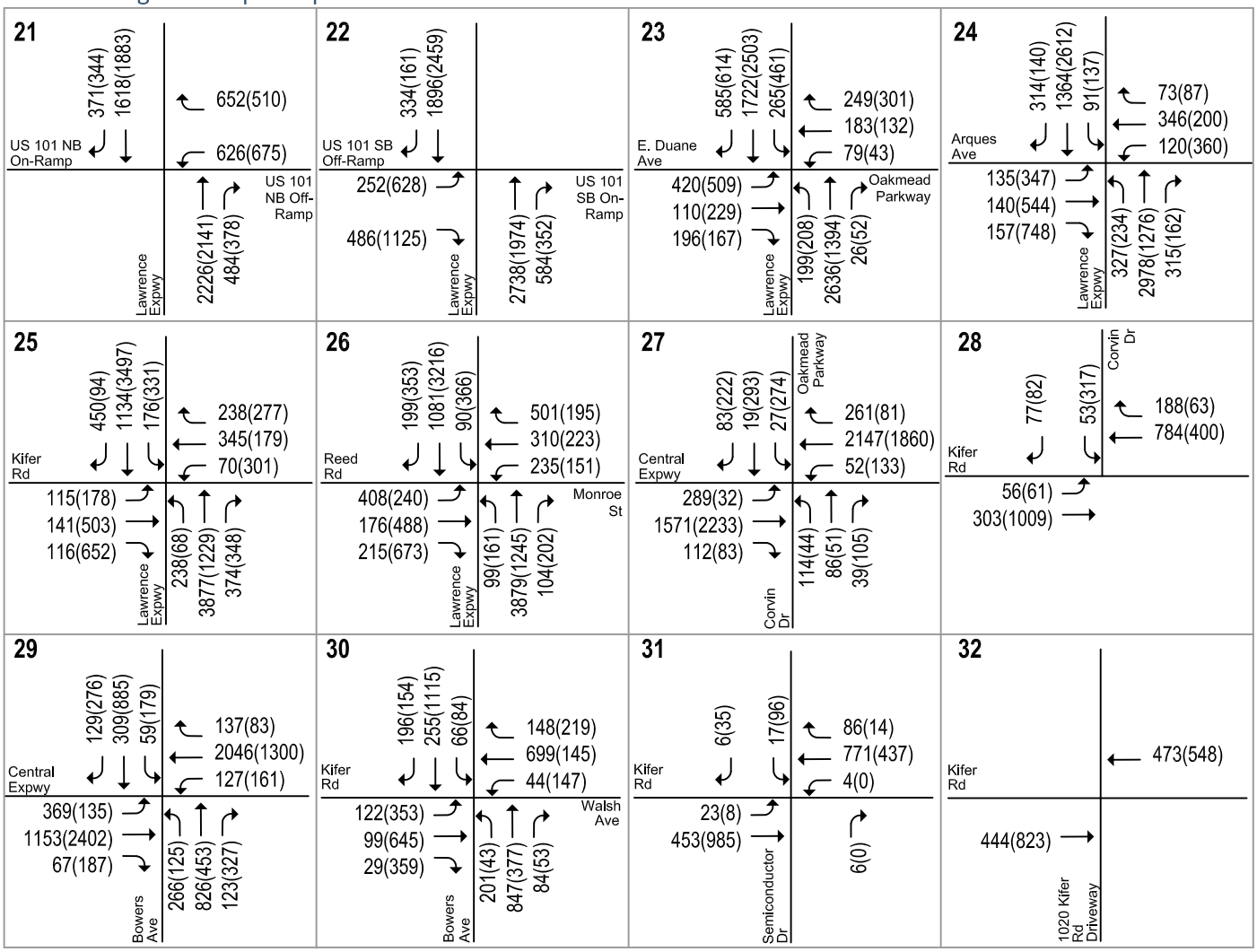
Figure 6
Existing Lane Configurations



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Existing Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Existing Traffic Volumes

Existing Intersection Levels of Service

Intersection levels of service were evaluated against the respective city and CMP standards. The results of the intersection level of service analysis under existing conditions are summarized in Table 4 for the signalized study intersections and Table 5 for the unsignalized study intersections. The results of the analysis show that the following intersections currently operate at unacceptable levels.

City of Sunnyvale Intersection:

- Wolfe Road and Central Expressway Ramps (#16) – PM peak hour (LOS E)

County of Santa Clara Intersections:

- Lawrence Expressway and Kifer Road (#25) – PM peak hour (LOS F)
- Lawrence Expressway and Monroe Street/Reed Avenue (#26) – AM peak hour (LOS F)

As shown on Table 5, the unsignalized intersection at Wolfe Road and Maude Avenue is currently operating at an unacceptable LOS F during the PM peak hour for the worst approach (the eastbound movement). This eastbound movement currently experiences lengthy delays because the eastbound left-turn movement must wait for a gap in both directions of travel on Wolfe Road before turning. The currently unsignalized intersection at Wolfe Road and Maude Avenue is being signalized by Intuitive Surgical as a part of the 1050 Kifer Road project.

The other unsignalized study intersection, Commercial Street and Kifer Road, currently operates at LOS C or better under existing conditions. However, the peak-hour signal warrant was checked for this intersection due to the anticipated project impacts. The results show that this intersection meets the peak-hour signal warrant during the PM peak hour under existing conditions. The intersection level of service sheets are included in Appendix C. The peak-hour signal warrant worksheets are included in Appendix D.

Table 4
Existing Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-
		PM	12/13/18		60.1	E
2	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+
		PM	05/08/18		22.8	C+
3	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+
		PM	05/08/18		13.8	B
4	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-
		PM	05/08/18		30.2	C
5	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+
		PM	05/08/18		19.8	B-
6	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-
		PM	05/08/18		44.5	D
7	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+
		PM	12/06/17		15.7	B
8	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B
		PM	05/08/18		25.9	C
9	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+
		PM	05/08/18		29.8	C
10	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-
		PM	05/08/18		33.7	C-
11	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D
		PM	10/30/18		41.8	D
12	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D
		PM	10/30/18		43.6	D
13	Wolfe Road & Maude Avenue (1)	AM	12/06/17	D	-	-
		PM	12/06/17		-	-
14	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+
		PM	11/15/17		30.8	C
15	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+
		PM	11/14/17		40.8	D
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	37.2	D+
		PM	12/06/17		**71.0**	**E**

Notes:

** = CMP, County = County of Santa Clara*

(1) The Wolfe Road & Maude Avenue intersection is signalized under background conditions.

BOLD indicates unacceptable level of service

Table 4 (Continued)
Existing Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS
17	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C
		PM	11/14/17		43.1	D
18	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+
		PM	11/15/17		36.5	D+
19	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+
		PM	11/14/17		38.9	D+
21	Lawrence Expressway & US 101 NB Ramps	AM	05/23/19	E	11.9	B+
		PM	05/23/19		14.0	B
22	Lawrence Expressway & US 101 SB Ramps	AM	05/23/19	E	7.9	A
		PM	05/23/19		22.3	C+
23	Lawrence Expressway & Oakmead Parkway	AM	05/23/19	E	40.4	D
		PM	05/23/19		52.3	D-
24	Lawrence Expressway & Arques Avenue	AM	04/04/17	E	48.2	D
		PM	11/13/18		71.6	E
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-
		PM	03/07/18		**101.6**	**F**
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**
		PM	11/13/18		61.8	E
27	Oakmead Parkway & Central Expressway	AM	11/15/17	E	46.1	D
		PM	11/13/18		49.7	D
28	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A
		PM	11/15/17		9.0	A
29	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D
		PM	11/13/18		53.8	D-
30	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C
		PM	03/07/18		28.6	C
31	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B
		PM	09/11/18		9.4	A
32	1020 Kifer Rd Driveway & Kifer Road	AM	-		Future Intersection	
		PM	-			

Notes:

* = *CMP, SC = Santa Clara, County = County of Santa Clara*

BOLD indicates unacceptable level of service

Table 5
Existing Level of Service Summary - Unsignalized Intersections

#	Intersection	Control [(1)]	LOS Standard	Peak Hour	Count Date	Existing Delay (sec)	Existing LOS	Existing Signal Warrant Met
13	Wolfe Road & Maude Avenue	side-street stop	D	AM	12/06/17	25.7	D	No
				PM	12/06/17	**67.4**	**F**	**Yes**
20	Commercial Street & Kifer Road	side-street stop	D	AM	12/06/17	12.3	B	No
				PM	12/06/17	24.1	C	Yes

Notes:
(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.
BOLD indicates unacceptable level of service

Existing Freeway Levels of Service

Existing weekday AM and PM peak-hour traffic volumes on the study freeway segments were obtained from the *2018 CMP Monitoring & Conformance Report* published by VTA (see Table 6). All three study freeway segments on US 101 are operating at LOS F in the northbound direction in the morning and LOS F in the southbound direction in the evening. The study freeway segment on SR 237 operates at LOS F in the westbound directions in the morning and LOS F in the eastbound direction in the evening.

Table 6
Existing Freeway Level of Service Summary

Freeway	Dir.	Segment	Peak Hour	Existing Conditions - Mixed Flow Lanes[1] Avg. Speed (mph)	# of Lanes	Capacity	Density (pc/mi/ln)	Volume	LOS[2]
US 101	SB	Mathilda Avenue to Fair Oaks Avenue	AM	63.0	3	6,900	24.0	4,611	C
			PM	**20.6**	**3**	**6,900**	**67.0**	**4,149**	**F**
US 101	SB	Fair Oaks Avenue to Lawrence Expressway	AM	60.0	3	6900	30.0	5346	D
			PM	**12.4**	**3**	**6900**	**79.0**	**2949**	**F**
US 101	SB	Lawrence Expressway to Great America Parkway	AM	55.0	3	6,900	35.0	5,850	D
			PM	**6.4**	**3**	**6,900**	**91.0**	**1,746**	**F**
US 101	NB	Great America Parkway to Lawrence Expressway	AM	**17.2**	**3**	**6900**	**72.0**	**3702**	**F**
			PM	47.6	3	6900	42.0	5964	D
US 101	NB	Lawrence Expressway to Fair Oaks Avenue	AM	**18.2**	**3**	**6,900**	**70.0**	**3,840**	**F**
			PM	47.2	3	6,900	42.0	5,958	D
US 101	NB	Fair Oaks Avenue to Mathilda Avenue	AM	**26.0**	**3**	**6,900**	**61.0**	**4,740**	**F**
			PM	54.8	3	6,900	36.0	5,859	D
SR 237	EB	Lawrence Expressway to Great America Parkway	AM	58.0	2	4,400	32.0	3,746	D
			PM	**9.8**	**2**	**4,400**	**84.0**	**1,644**	**F**
SR 237	WB	Great America Parkway to Lawrence Expressway	AM	**24.6**	**2**	**4,400**	**62.0**	**3,066**	**F**
			PM	57.8	2	4,400	33.0	3,760	D

Notes
Dir. = direction, NB = northbound, SB = southbound, mph = miles per hour, pc/mi/ln = passenger cars per mile per lane
[1] Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2018.
BOLD indicates substandard level of service.

Existing Freeway Ramp Capacity Analysis

This analysis consists of a volume-to-capacity ratio evaluation of six freeway ramps at the interchanges of US 101 and Fair Oaks Avenue and US 101 and Lawrence Expressway. The ramp capacities were obtained from the *Highway Capacity Manual 2000* (Chapter 25), which considers the free-flow speed, the number of lanes on the study ramp, and ramp metering.

Hexagon conducted field observations at the study freeway ramps in May 2018 and 2019. The field observations showed that the US 101 southbound on-ramp from northbound Lawrence Expressway was metered during the PM peak hour. The field observations showed minimal ramp queuing at this location, typically one to two vehicles. Due to the short observed queue length, a queuing analysis was omitted from the traffic study. The US 101 northbound on-ramp from Fair Oaks Avenue has ramp meter equipment, and Caltrans could turn on the ramp metering in the future. To be conservative, it was assumed that the US 101 on-ramp from Fair Oaks Avenue is metered during the AM peak hour.

It is assumed that the metered ramps would each have a capacity of 900 vehicles per hour for the mixed-flow lanes. A capacity of 900 vehicles per hour is assumed for the HOV lanes. The peak-hour freeway ramp volumes were obtained through recent traffic counts and Caltrans. As shown on Table 7, all freeway ramps currently have sufficient capacity to serve the existing traffic volumes. The study ramps have volume-to-capacity (V/C) ratios that are well below 1.0, which means that the existing traffic demand is lower than the ramp capacity.

Table 7
Existing Freeway Ramp Capacity Analysis

Interchange	Ramp	Type	Peak Hour	Lanes			Existing Conditions		
				Mixed-Flow	HOV	Meter[1]	Capacity[2]	Peak Volume[3]	v/c
US101/Fair Oaks Avenue	NB On-Ramp from Fair Oaks Avenue	Diagonal	AM	1	1	Equipment Present	1,800	1,061	0.59
			PM				1,800	416	0.23
	SB Off-Ramp to SB Fair Oaks Avenue	Diagonal	AM	1	-	-	2,000	363	0.18
			PM				2,000	893	0.45
US 101/Lawrence Expressway	NB Off-Ramp to Lawrence Expressway	Diagonal	AM	2	-	-	3,800	1,278	0.34
			PM				3,800	1,185	0.31
	SB On-Ramp from NB Lawrence Expressway	Diagonal	AM	2	1	Equipment Present	1,800	584	0.32
			PM				1,800	352	0.20
	NB On-Ramp from NB Lawrence Expressway	Loop	AM	1	1	Equipment Present	1,800	484	0.27
			PM				1,800	378	0.21
	SB Off-Ramp to Lawrence Expressway	Diagonal	AM	2	-	-	3,800	738	0.19
			PM				3,800	1,753	0.46

Notes:
NB=northbound, SB=southbound, v/c = volume-to-capacity ratio

[1] As a conservative approach, if an on-ramp has meter equipment present, the ramp is analyzed assuming it is metered.
[2] Ramp capacities were obtained from the Highway Capacity Manual, 2000 (pg 25-4), and considered the free-flow speed, the number of lanes on the ramp, and ramp metering.
[3] Peak-hour volumes are obtained through intersection counts and Caltrans.

Observed Existing Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions. Hexagon conducted field observations in 2017, 2018, and 2019 during the AM peak commute period (7:00 AM to 10:00 AM) and during the PM peak commute period (4:00 PM to 7:00 PM). During the peak commute periods, most of the study intersections had no noticeable operational issues, and vehicular queues on all approaches were mostly able to clear in one cycle. The observed operational issues at the study intersections are identified below.

Note that the discussion below indicates occasional instances when specific movements could not make it through the intersection in one cycle. Intersection level of service calculations for signalized intersections are based on the average delay of all movements within the peak hour. Therefore, if one movement is failing to clear within one signal cycle but other movements receive minimal delays, the intersection could still operate at an acceptable level of service.

Mary Avenue and Central Expressway

During the AM peak hour, there was heavy congestion for the westbound through movement that often required two signal cycles to clear.

During the PM peak hour, southbound left-turn and westbound left-turn vehicles often filled the turn pockets and required two signal cycles to clear.

Fair Oaks Avenue and US 101 Northbound Ramps

During the AM peak commute period, the northbound left-turn queues were observed to occasionally extend beyond the existing turn pocket storage space and required two signal cycles to clear the intersection.

During the PM peak commute period, the westbound left-turn movement received heavy traffic volumes and occasionally required two signal cycles to clear the intersection.

Fair Oaks Avenue and Duane Avenue

During the AM peak commute period, southbound and westbound left-turn movements received heavy traffic volumes and required two signal cycles to clear the intersection. This congestion was observed to occur only during the peak 15-minute drop-off operations of the nearby King's Academy school.

Fair Oaks Avenue and Wolfe Road

During the PM commute peak hour, southbound through traffic continuing onto southbound Wolfe Road often queued towards the Duane Avenue intersection while waiting for the green phase, but all cleared within one signal cycle. The eastbound left-turn movement often queued towards Maude Avenue, but all cleared within one signal cycle.

Fair Oaks Avenue and Old San Francisco Road

During the AM peak hour, westbound left turning vehicles occasionally required two cycles to clear the intersection. During the PM peak hour, eastbound left turning vehicles occasionally required two signals to clear the intersection.

Fair Oaks Avenue and El Camino Real

During the PM peak hour, there was heavy demand for the eastbound through and westbound left-turn movements. Vehicles at the back of the queues often required two signal cycles to clear.

Sunnyvale-Saratoga Road and Remington Drive

During the PM peak hour, the westbound left-turn movement frequently queued towards Manet Drive and required multiple signal cycles to clear.

Fair Oaks Avenue and El Camino Real

During the PM peak hour, there was heavy demand for the eastbound through and westbound left-turn movements. Vehicles at the back of the queues often required two signal cycles to clear.

Wolfe Road and Arques Avenue

During the PM peak hour, westbound left-turn traffic was heavy and consistently required two signal cycles to clear.

Wolfe Road and Central Expressway Ramps

The intersections on Wolfe Road at the Central Expressway eastbound and westbound ramps were observed to operate as one intersection during the AM and PM peak commute periods. Due to the signal operations, the northbound left-turning vehicles and southbound left-turning vehicles were observed to experience long delays. During the AM peak commute period, the northbound left-turn queues were observed to occasionally extend beyond the storage space.

During the PM peak commute period, the southbound through queues were observed to occasionally spillback to the upstream intersection at Wolfe Road/Arques Avenue and required two signal cycles to clear the intersection.

Wolfe Road and Kifer Road

During the PM peak commute period, westbound left-turn traffic was heavy and consistently required two signal cycles to clear.

Wolfe Road and Evelyn Avenue

During the PM peak commute period, the southbound through queues were observed to extend beyond the entrance to the left-turn pocket which would prevent southbound left-turn vehicles from entering the storage space.

Commercial Street and Kifer Road

At one point during the PM peak hour, the southbound left turning queue was very long. There was a maximum of 15 to 20 vehicles observed in the queue. It took 2 to 3 minutes for each vehicle to turn left onto Kifer Street from Commercial Street. However, this happened for a short period of time (about ten minutes), and the south bound left turning queue was subsequently reduced to five vehicles. The south bound right turning vehicles were able to turn right without any problem.

Lawrence Expressway between Arques Avenue and US 101 Northbound Ramps

During the AM peak period, the northbound through movement on Lawrence Expressway is the peak commute direction. There are temporarily queue spillbacks in the northbound direction, but most vehicles clear each intersection within a cycle. At the Oakmead Parkway intersection, there are lengthy queues at the northbound left-turn movement that fill the turn pocket, but most vehicles clear within one cycle. The eastbound left-turn movement on Oakmead Parkway queues to the Duane Avenue/Stewart Drive intersection, and vehicles at the back of the queue cannot clear the Lawrence Expressway intersection within one signal cycle.

During the PM peak period, the southbound through movement on Lawrence Expressway is the peak commute direction. During the peak 15 minutes or so, progression along southbound Lawrence Expressway is slow because of downstream queue spillbacks, and vehicles often require multiple cycles to clear each intersection. At the Arques Avenue intersection, there is heavy demand for the eastbound right-turn movement, and vehicles queue past upstream intersections and require multiple cycles to clear. At the Oakmead Parkway intersection, there is heavy demand for the southbound left-turn movement, but vehicles clear the intersection within one signal cycle. The US 101 southbound off-ramp experiences heavy demand for the eastbound right-turn movement and vehicles often require multiple signal cycles to clear.

Lawrence Expressway and Kifer Road

During the PM peak hour, westbound left turn vehicles occasionally needed two signal cycles to clear the intersection. Southbound vehicles along Lawrence Expressway blocked the intersection such that westbound left turn vehicles from Kifer Road were not able to turn left into Lawrence Expressway. Also, southbound left turn vehicles occasionally needed two signal cycles to clear the intersection.

Lawrence Expressway and Reed Avenue

During the AM peak hour, eastbound left turn vehicles occasionally needed two signal cycles to clear the intersection and the queue extended past the Willow Avenue intersection. Northbound through vehicles experienced stop and go conditions. The queue extended to Cabrillo Avenue and required two signal cycles to clear the intersection.

Oakmead Parkway and Central Expressway

During the AM peak hour, westbound traffic was heavy on Central Expressway and required multiple signal cycles to clear. The eastbound left-turn movement received heavy demand and frequently queued out of the turn pocket, requiring two cycles to clear.

During the PM peak hour, eastbound traffic was heavy on Central Expressway and required multiple signal cycles to clear. The westbound left-turn movement sometimes required two cycles to clear the intersection. The southbound left-turn queue extended to Arques Avenue and required multiple cycles to clear. The queue did not seem to affect traffic operations at the Oakmead Parkway and Arques Avenue intersection. At the Oakmead Parkway and Central Expressway intersection, the southbound traffic was heavy, but was usually able to clear within one signal cycle. However, the northbound permitted left-turns were affected by the heavy southbound traffic and required multiple cycles to clear.

Bowers Avenue and Central Expressway

During the AM peak hour, westbound traffic was heavy on Central Expressway and required multiple signal cycles to clear. The eastbound left-turn movement received heavy demand and sometimes required two cycles to clear the intersection.

During the PM peak hour, southbound spillback queues from the Bowers Avenue and Kifer Road intersection affected traffic operations at this intersection. These spillback queues would occasionally prevent eastbound through vehicles from progressing through the Bowers Avenue and Central Expressway intersection. The southbound and eastbound queues often required multiple cycles to clear. The westbound left-turn movement sometimes required two cycles to clear.

Bowers Avenue and Kifer Road

During the PM peak hour, the eastbound left turn movement often required more than one cycle to clear the intersection and the queue almost extended to Oakmead Village Court.

3. Background Conditions

This chapter describes background traffic conditions, which are defined as conditions with the addition of traffic from approved but not yet constructed and occupied projects in the study area. Traffic volumes for background conditions comprise volumes from the existing traffic counts plus traffic generated by approved projects in the vicinity of the site. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions.

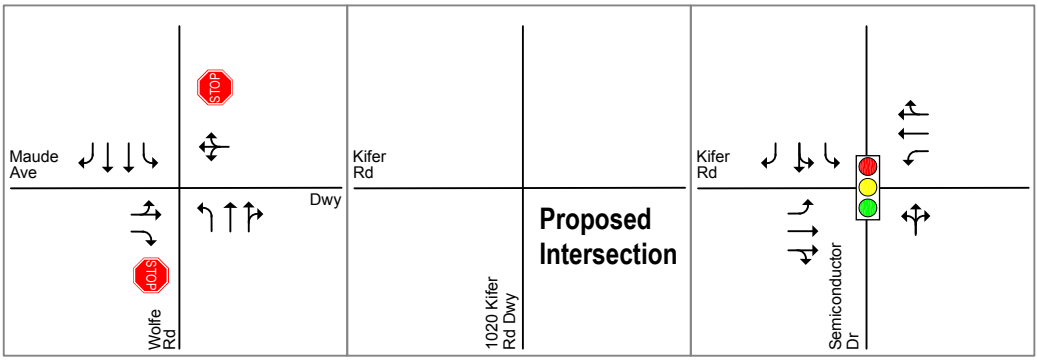
Background Transportation Network

It is assumed in this analysis that the transportation network under background conditions, including roadway and intersection lane configurations, would be mostly the same as that described under the existing conditions. It is assumed that the Wolfe Road and Maude Avenue intersection is signalized under background conditions. It is also assumed that the signalized 1020 Kifer Road Driveway and Kifer Road intersection would exist under background conditions. The north approach of the 1020 Kifer Road Driveway/Kifer Road intersection would be added under project conditions. The lane configurations under background conditions are shown on Figure 8.

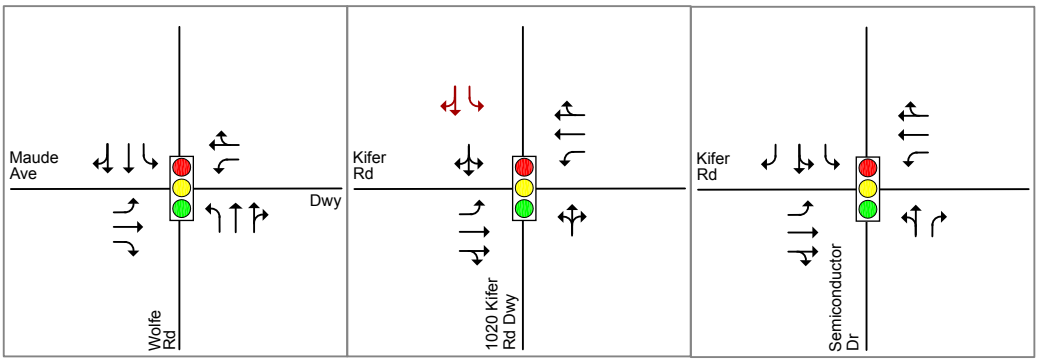
Background Traffic Volumes

Background traffic volumes were estimated by adding traffic from approved but not yet completed developments in the study area. Approved developments are those developments that have been approved by local agencies, are under construction, or are built but not yet occupied. Approved project lists were obtained from the City of Sunnyvale and the City of Santa Clara. Based on a review of traffic studies prepared for these projects, the types and sizes of these developments, and their distances from the project site, a total of 79 approved projects were selected for inclusion in the background scenario. Trip generation for all background projects was based on their respective traffic reports provided by City staff, where available. The approved but not yet completed development locations included in this study are shown on Figure 9. The approved project volumes are included in Appendix B. The AM and PM peak-hour traffic volumes at the study intersections under background conditions are shown on Figure 10.

Existing Conditions



Background Conditions



LEGEND

= Traffic Signal

= Stop Sign

= Lane Configuration under Project Conditions

Figure 8
Background Lane Configurations

NORTH
Not to Scale

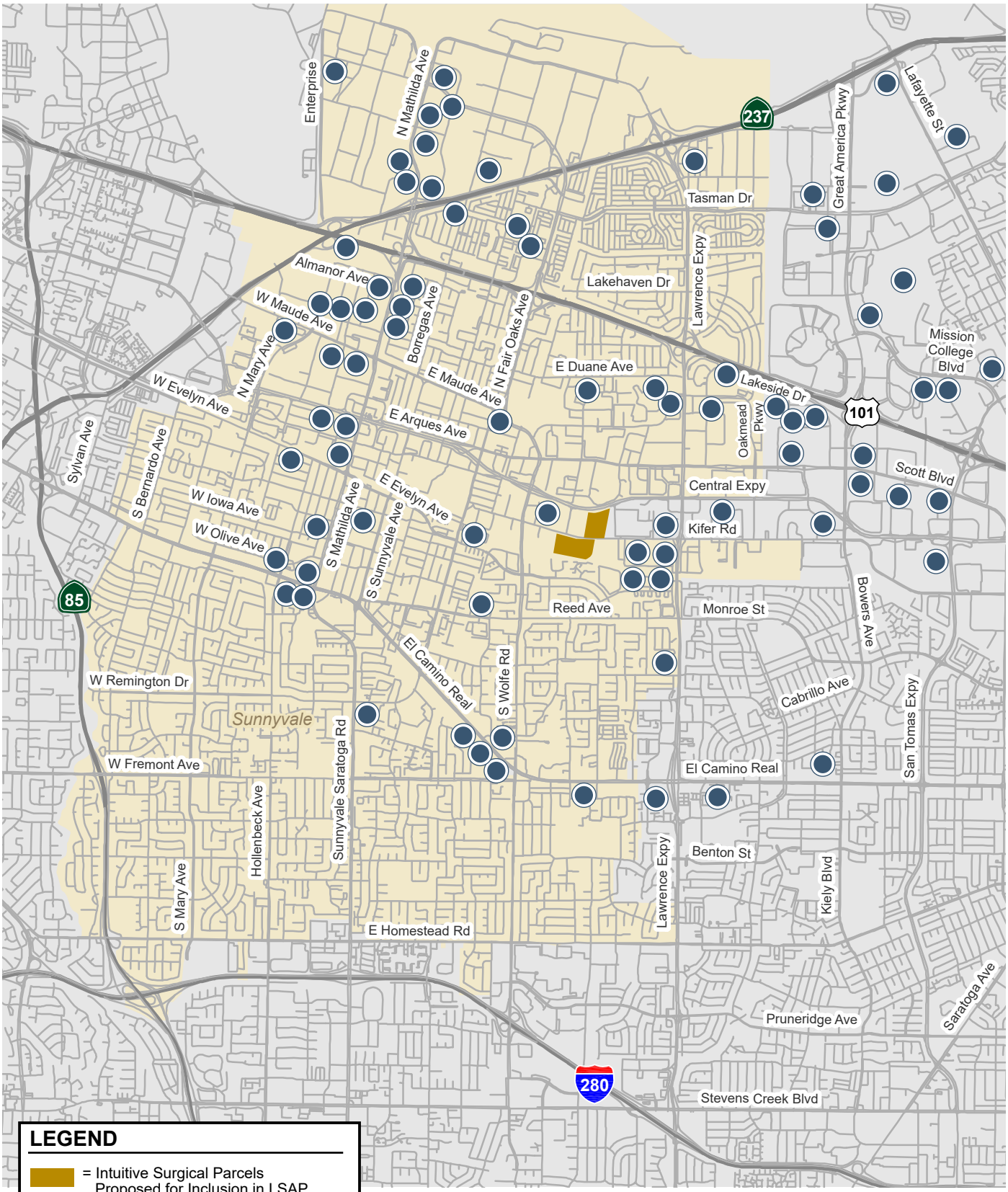
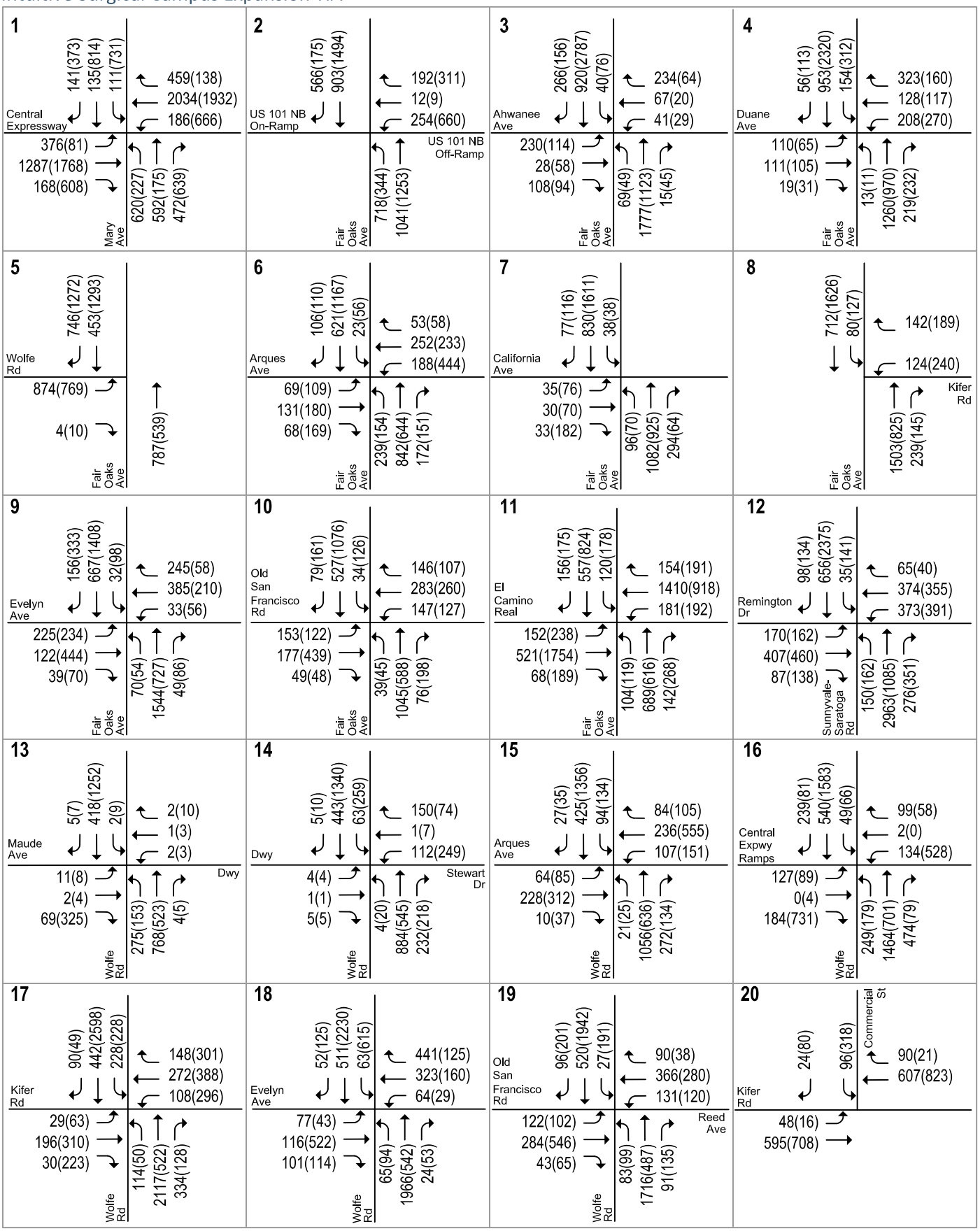


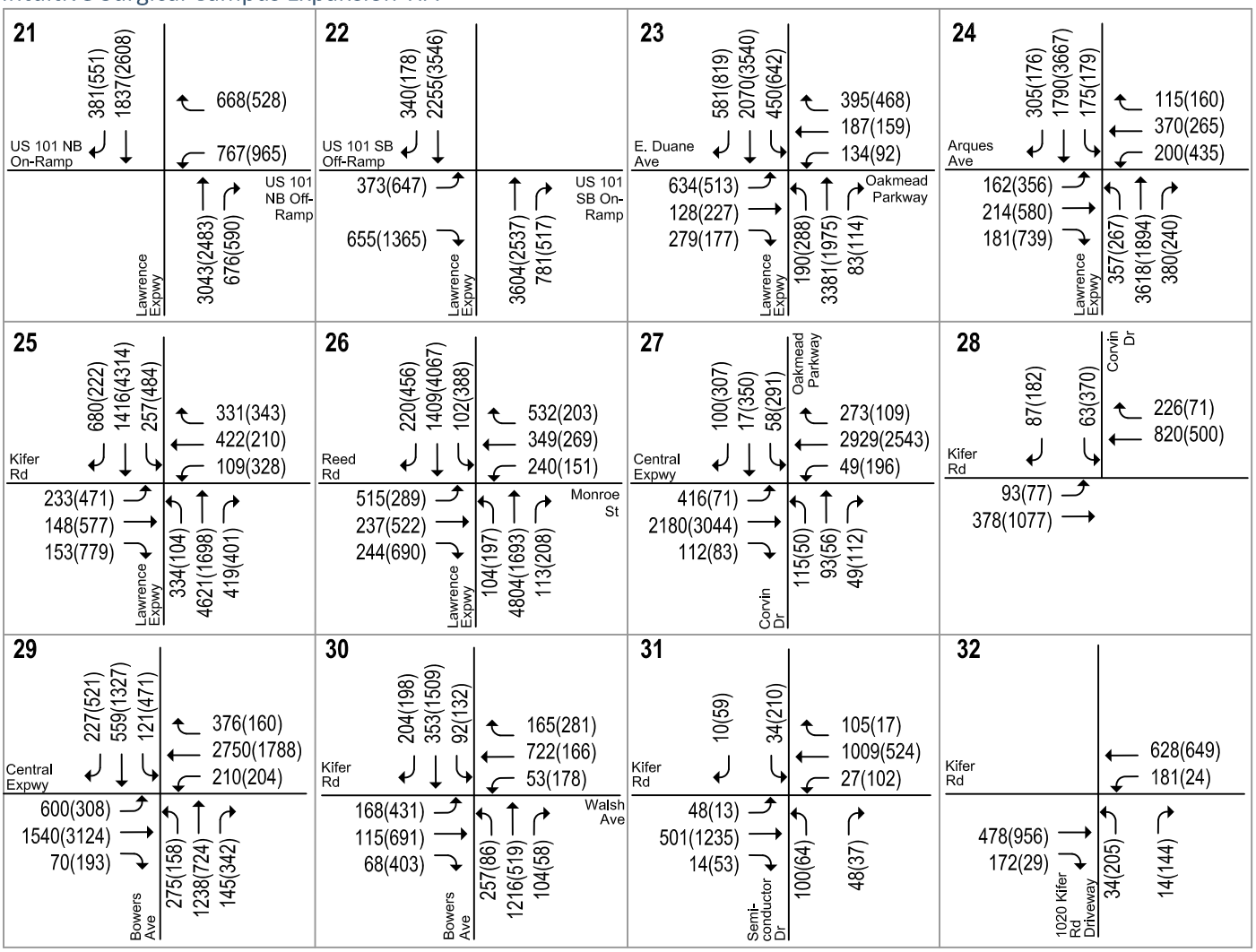
Figure 9
Approved Developments



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Background Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Background Traffic Volumes

Background Intersection Levels of Service

Intersection levels of service were evaluated against the respective city and CMP standards. The results of the intersection level of service analysis under background conditions are summarized in Table 8 for the signalized study intersections and Table 9 for the unsignalized study intersection. The results of the analysis show that the following study intersections would operate at unacceptable levels.

City of Sunnyvale Intersection:

- Wolfe Road and Central Expressway Ramps (#16) – PM peak hour (LOS F)

County of Santa Clara Intersections:

- Lawrence Expressway and Oakmead Parkway/Duane Avenue (#23) – PM peak hour (LOS F)
- Lawrence Expressway and Arques Avenue (#24) – PM peak hour (LOS F)
- Lawrence Expressway and Kifer Road (#25) – AM and PM peak hour (LOS F)
- Lawrence Expressway and Monroe Street/Reed Avenue (#26) – AM peak hour (LOS F)
- Oakmead Parkway and Central Expressway (#27) – AM and PM peak hour (LOS F)
- Bowers Avenue and Central Expressway (#29) – PM peak hour (LOS F)

As shown in Table 9, the unsignalized intersection at Commercial Street and Kifer Road would operate at an unacceptable LOS F during the PM peak hour for the worst approach (the southbound movement) under background conditions. This southbound movement would experience lengthy delays because the southbound left-turn movement must wait for a gap in both directions of travel on Kifer Road before turning. The peak-hour signal warrant was checked for this intersection, and the results show that this intersection would meet the peak-hour signal warrant during the PM peak hour under background conditions. The intersection level of service sheets are included in Appendix C. The peak-hour signal warrant worksheets are included in Appendix D.

Table 8
Background Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS	Background Avg. Delay (sec)	Background LOS
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-	73.3	E
		PM	12/13/18		60.1	E	78.0	E-
2	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+	26.5	C
		PM	05/08/18		22.8	C+	32.7	C-
3	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+	21.5	C+
		PM	05/08/18		13.8	B	14.7	B
4	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-	33.6	C-
		PM	05/08/18		30.2	C	35.2	D+
5	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+	23.8	C
		PM	05/08/18		19.8	B-	22.2	C+
6	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-	36.2	D+
		PM	05/08/18		44.5	D	47.1	D
7	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+	10.2	B+
		PM	12/06/17		15.7	B	15.7	B
8	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B	15.8	B
		PM	05/08/18		25.9	C	31.6	C
9	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+	39.7	D
		PM	05/08/18		29.8	C	34.0	C-
10	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-	35.2	D+
		PM	05/08/18		33.7	C-	34.9	C-
11	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D	42.1	D
		PM	10/30/18		41.8	D	46.2	D
12	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D	56.8	E+
		PM	10/30/18		43.6	D	46.6	D
13	Wolfe Road & Maude Avenue (1)	AM	12/06/17	D	-	-	20.1	C+
		PM	12/06/17		-	-	24.7	C
14	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+	24.2	C
		PM	11/15/17		30.8	C	30.4	C
15	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+	34.9	C-
		PM	11/14/17		40.8	D	39.9	D
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	37.2	D+	41.2	D
		PM	12/06/17		**71.0**	**E**	**93.5**	**F**

Notes:
* = *CMP, County = County of Santa Clara*
(1) The Wolfe Road & Maude Avenue intersection is signalized under background conditions.
BOLD indicates unacceptable level of service

Table 8 (Continued)
Background Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS	Background Avg. Delay (sec)	Background LOS
17	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C	39.8	D
		PM	11/14/17		43.1	D	49.5	D
18	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+	41.0	D
		PM	11/15/17		36.5	D+	37.7	D+
19	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+	36.8	D+
		PM	11/14/17		38.9	D+	40.3	D
21	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	11.9	B+	12.8	B
		PM	05/23/19		14.0	B	15.6	B
22	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	7.9	A	11.2	B+
		PM	05/23/19		22.3	C+	28.5	C
23	Lawrence Expressway & Oakmead Parkway (County)	AM	05/23/19	E	40.4	D	70.3	E
		PM	05/23/19		52.3	D-	**80.8**	**F**
24	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	48.2	D	68.4	E
		PM	11/13/18		71.6	E	**113.8**	**F**
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-	**106.4**	**F**
		PM	03/07/18		**101.6**	**F**	**>120**	**F**
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**	**>120**	**F**
		PM	11/13/18		61.8	E	70.2	E
27	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	46.1	D	**116.3**	**F**
		PM	11/13/18		49.7	D	**109.7**	**F**
28	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A	9.3	A
		PM	11/15/17		9.0	A	9.2	A
29	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D	70.2	E
		PM	11/13/18		53.8	D-	**83.4**	**F**
30	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C	31.8	C
		PM	03/07/18		28.6	C	36.7	D+
31	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B	17.6	B
		PM	09/11/18		9.4	A	20.7	C+
32	1020 Kifer Rd Driveway & Kifer Road	AM	-		Future Intersection		12.3	B
		PM	-				18.3	B-

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service

Table 9
Background Level of Service Summary - Unsignalized Intersection

#	Intersection	Control [(1)]	Peak Hour	Count Date	Existing Delay (sec)	Existing LOS	Existing Signal Warrant Met	Background Delay (sec)	Background LOS	Background Signal Warrant Met
20	Commercial Street & Kifer Road	side-street stop	AM	12/06/17	12.3	B	No	16.2	C	No
			PM	12/06/17	24.1	C	Yes	**95.9**	**F**	**Yes**

Notes:

(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.

BOLD indicates unacceptable level of service

4. Project Conditions

This chapter describes the method by which project traffic is estimated, roadway traffic operations under existing plus project conditions, background plus project conditions, and cumulative conditions, and any impacts caused by the project. Existing plus project traffic conditions could potentially occur if the project were to be occupied prior to the other approved projects in the area. However, it is unlikely that this traffic condition would occur, since some of the other approved projects expected to add traffic to the study area would likely be built and occupied during the time this project is going through the development review process.

Project Description

The project comprises a 15.6-acre site located on the north side of Kifer Road and a 16.8-acre site located on the south side of Kifer Road between Lawrence Expressway and Wolfe Road. The project proposes 380,000 square feet of office space on the north site and 900,000 square feet of research and development space on the south site. The two sites would be connected by a private pedestrian bridge across Kifer Road and would be integrated with the existing nearby Intuitive Surgical facilities. The project proposes to construct the office building on the north site replacing an existing surface parking lot. The research and development building on the south site would replace an existing office building and vacant industrial building. Access to the north site would be primarily provided via a proposed signalized driveway at the east property line, as well as a visitor driveway to the west. Access to the south site would be primarily provided via a proposed driveway on the south leg of the Commercial Street and Kifer Road intersection, as well as a visitor driveway to the east.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed project site was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. This research is compiled in the *Trip Generation Manual, 10th Edition (2017)* published by the Institute of Transportation Engineers' (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trip generation rates for the proposed office building are based on the average rates published for "General Office Building" (Land Use Code 710). Trip generation rates for the proposed research and development building are based on the average rates published for "Research and Development Center" (Land Use Code 760).

Trip Reductions

Transportation Demand Management (TDM) is a combination of services, incentives, facilities, and actions that reduce single-occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems. The project plans to implement a TDM Plan that will provide financial incentives to promote alternative travel modes, including free transit passes, dedicated carpool/vanpool parking spaces, bike facilities and services, and marketing campaigns and on-site services to reduce daily trips. The project also plans to provide fully funded daily shuttles from the Intuitive Surgical campus to the Lawrence Caltrain Station, Great America Station, Fremont Civic Center Park & Ride, Fremont BART Station, and other Intuitive Surgical campus sites in the area. The VTA's *Congestion Management Program Transportation Impact Analysis Guidelines* (October 2014) indicates a trip reduction of up to 5% can be applied for TDM programs that include financial incentives that are offered to all employees on an ongoing basis and is greater than or equal to the monthly maximum pre-tax commuter benefit. The guidelines also indicate that a 3% trip reduction can be applied for TDM programs that provide a fully funded shuttle service to light rail, Caltrain, or BART facilities. Thus, a total trip reduction of 8% was applied to the project trip generation.

In addition, the proposed project would receive trip credits for the trips generated by the existing on-site use. AM and PM peak hour counts were collected at the existing site driveways on May 23, 2019.

Net Project Trips

After applying the ITE trip generation rates and the applicable trip reductions, the proposed project is estimated to generate a net increase of 637 vehicle trips during the AM peak hour (539 inbound and 98 outbound) and 685 vehicle trips during the PM peak hour (62 inbound and 623 outbound).

The trip generation for the proposed project is summarized in Table 10.

Table 10
Trip Generation Summary

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Rate	AM In %	AM In	AM Out	AM Total	PM Peak Hour Rate	PM In %	PM In	PM Out	PM Total
Proposed Use [5]														
Office [1]	380.0	ksf	9.74	3,701	1.16	86%	379	62	441	1.15	16%	70	367	437
R & D [2]	900.0	ksf	11.26	10,134	0.42	75%	284	94	378	0.49	15%	66	375	441
Gross Project Trips	**1,280**	**ksf**		**13,835**			**663**	**156**	**819**			**136**	**742**	**878**
Trip Reductions														
Standard TDM Reduction [4]				(1,107)			(53)	(12)	(65)			(11)	(59)	(70)
Total Project Trips				**12,728**			**610**	**144**	**754**			**125**	**683**	**808**
Other Trip Adjustments														
Existing Uses [3]				(1,200)			(71)	(46)	(117)			(63)	(60)	(123)
Net Project Trips				**11,528**			**539**	**98**	**637**			**62**	**623**	**685**

Notes:
KSF = 1,000 square feet
d.u. = dwelling unit

[1] General Office Building (Land Use 710) average rates published in ITE's Trip Generation Manual, 10th Edition, 2017.

[2] Research and Development Center (Land Use 760) average rates published in ITE's Trip Generation Manual, 10th Edition, 2017.

[3] Trip generation of existing buildings occupying the project site was based on driveway counts conducted May 23, 2019. Daily Trips were estimated based on the average AM and PM peak hour trips multiplied by 10.

[4] As prescribed by the *VTA Transportation Impact Analysis Guidelines, 2014* , an 8% standard TDM reduction was applied to the project's trip generation. A maximum trip reduction of 5% was applied for TDM programs which include financial incentives and a 3% reduction was applied for TDM programs which commit to fully funding a dedicated shuttle to light rail, Caltrain, or BART facilities.

[5] The project size has been reduced to 364,000 square feet of office space, 847,000 square feet of research and development space, and an 11,000 square-foot detached amenity building which would result in minimal reduction in trips generated.

Trip Distribution and Assignment

Trips generated by the proposed project were distributed to the study network based on the existing travel patterns on the surrounding roadway system and the locations of complementary land uses. Office, research, and development uses generate mostly inbound trips in the morning and mostly outbound trips in the evening. The majority of the project trips would travel via US 101, Lawrence Expressway, and Central Expressway. The project trip distribution is shown on Figure 11.

The project trips were assigned to the roadway network based on the direction of approach and departure, roadway network connections, freeway and expressway access points, and the locations of project driveways. It is assumed that all trips generated by the office building would use the signalized project driveway. All trips generated by the research and development building are assumed to use the driveway at the Commercial Street and Kifer Road intersection. The net project trips at the study intersections are shown on Figure 12.

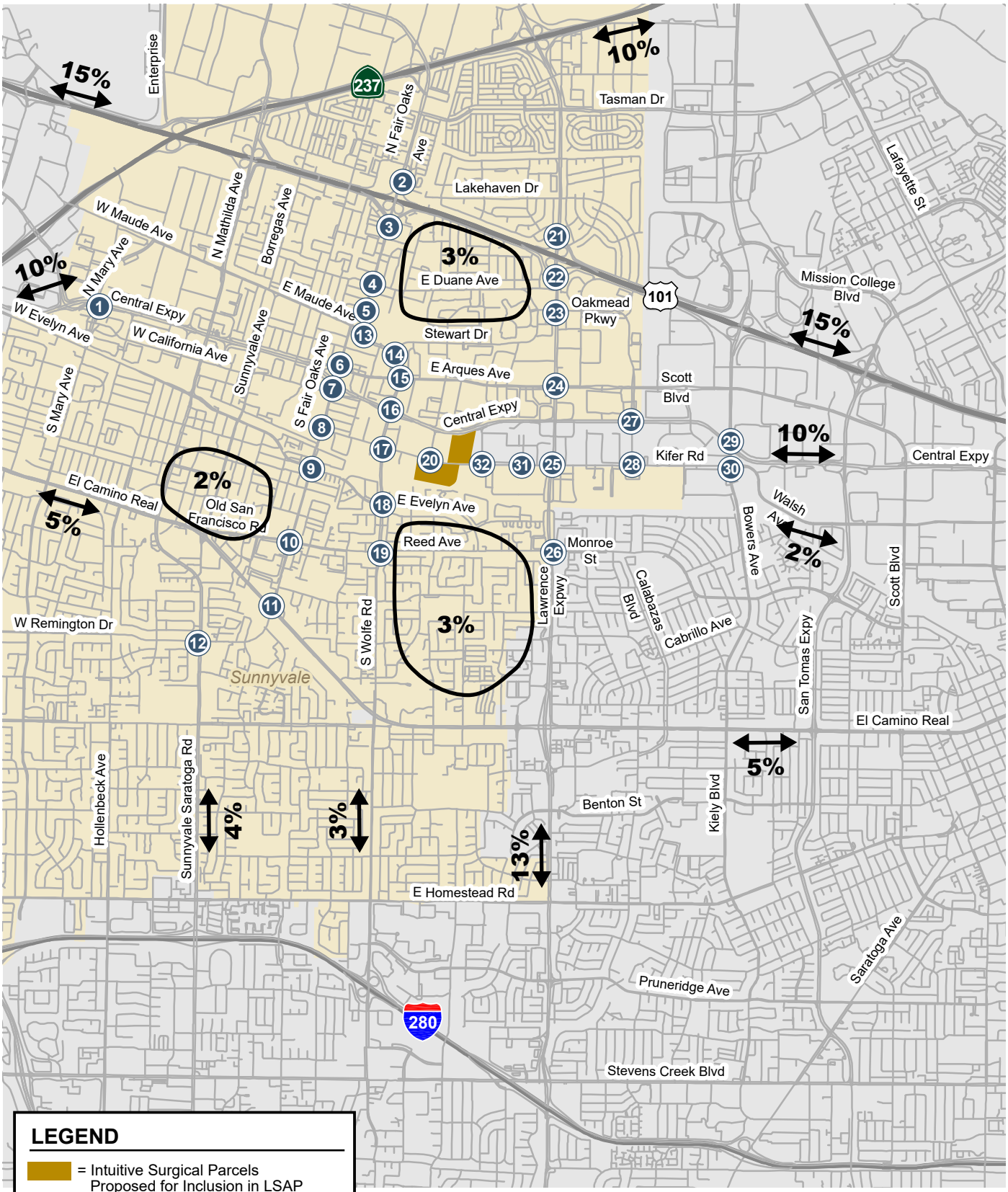
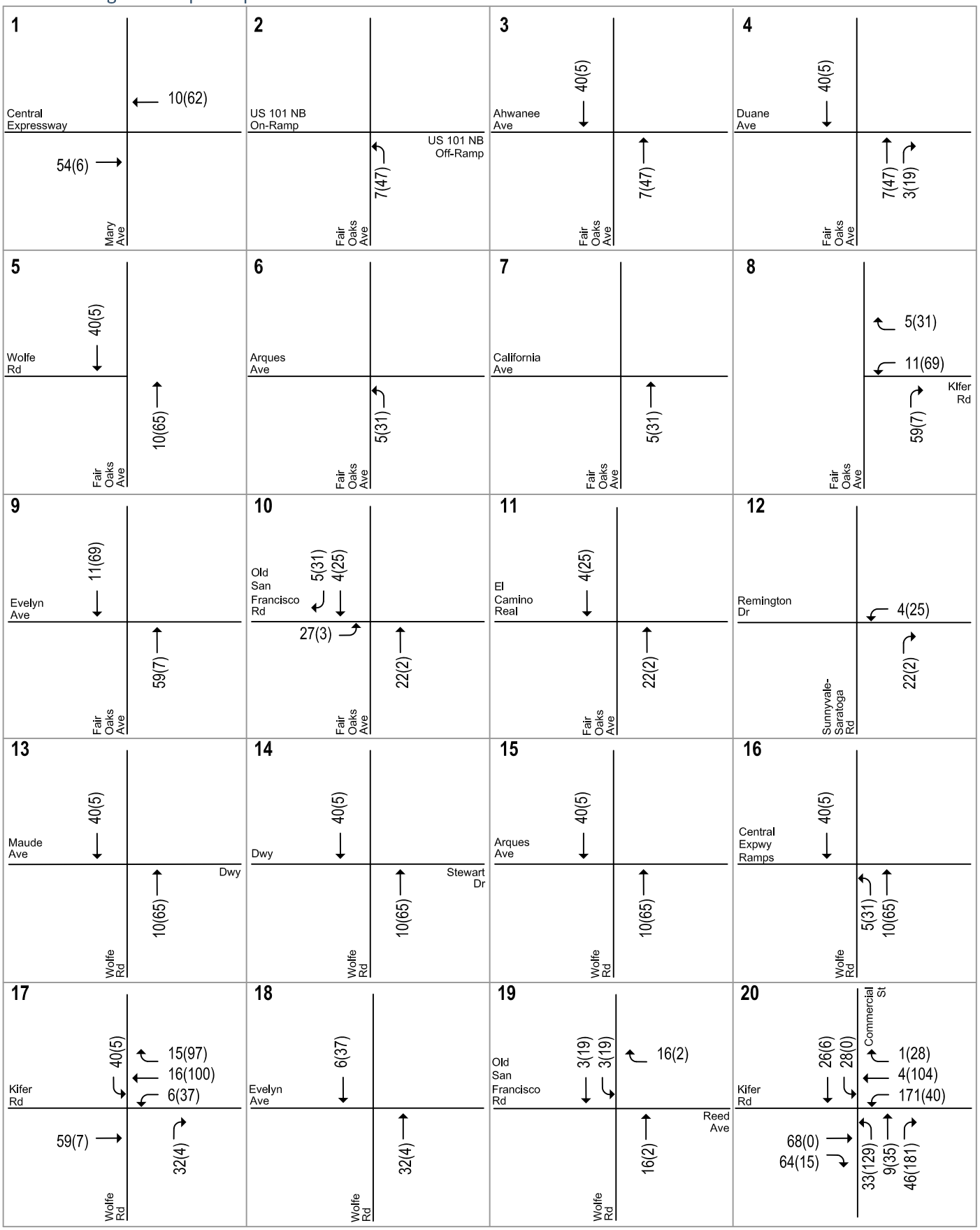


Figure 11
Project Trip Distribution



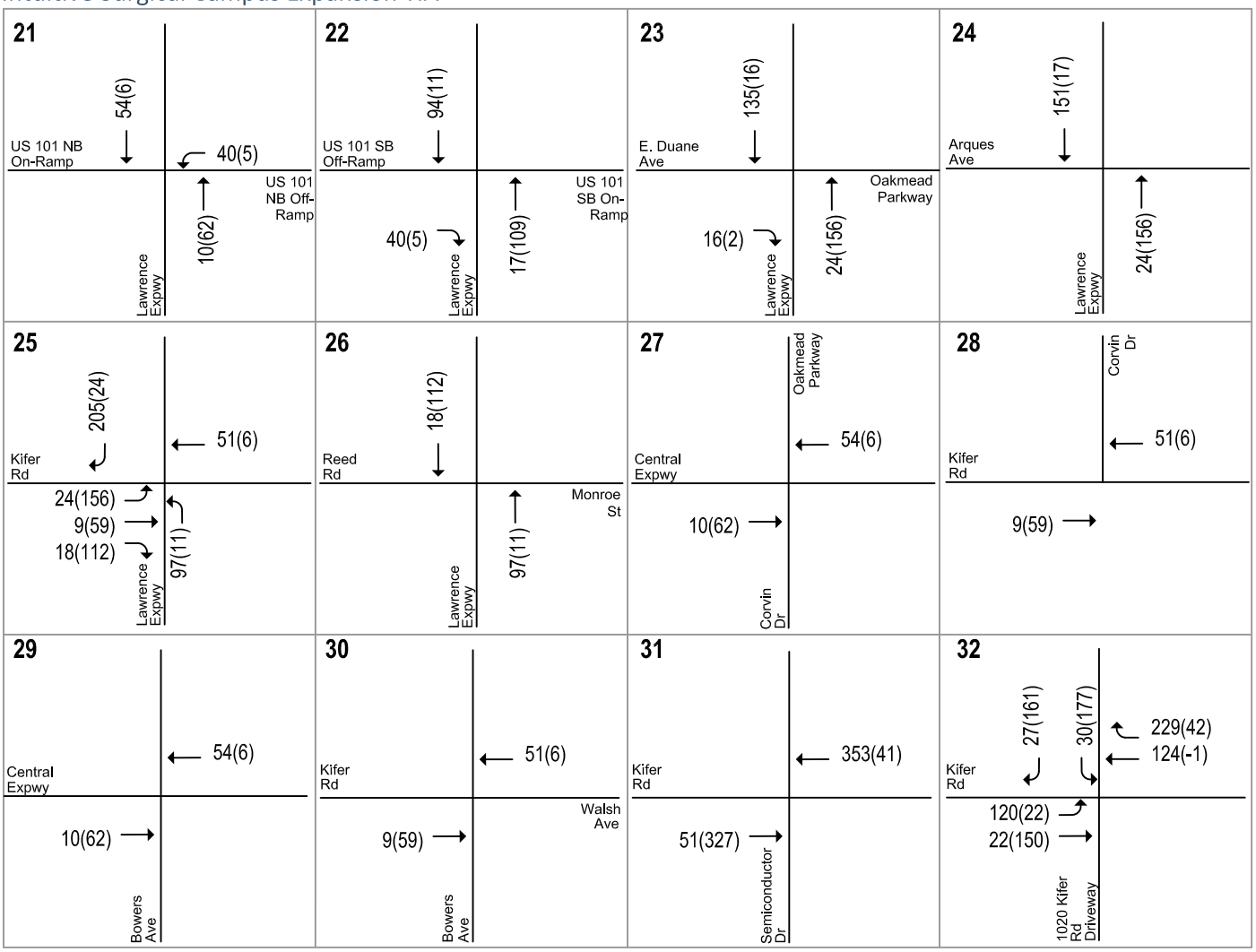
LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 12
Net Project Trips

HEXAGON

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

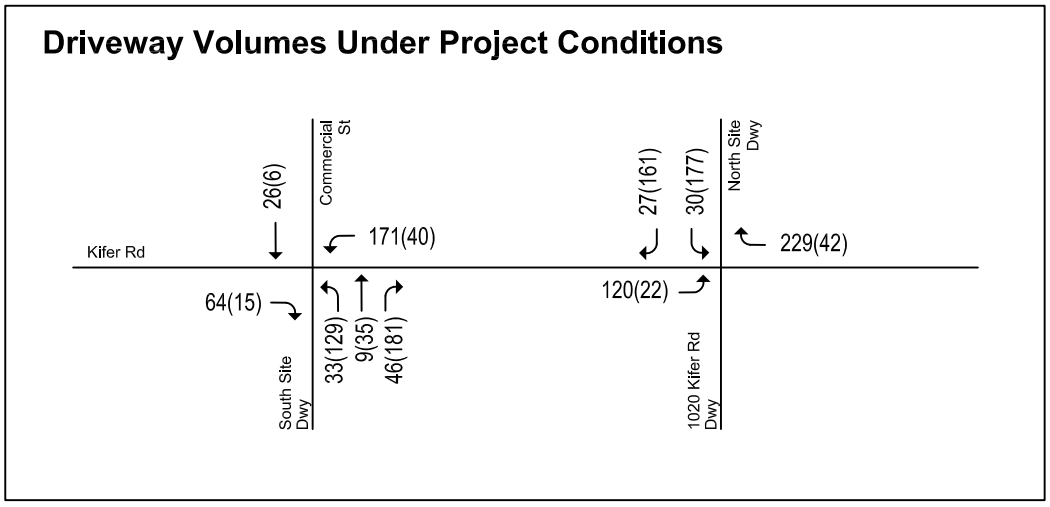


Figure 12
Net Project Trips

Intersection Traffic Volumes Under Project Conditions

Project impacts were evaluated relative to both (1) existing traffic volumes and (2) background traffic volumes. For the existing plus project scenario, the net new trips generated by the proposed project were added to the existing traffic volumes to derive the existing plus project traffic volumes. Figure 13 shows the intersection turning-movement volumes under existing plus project conditions. For the background plus project scenario, the net new trips generated by the proposed project were added to the background traffic volumes to derive the background plus project traffic volumes. Figure 14 shows the intersection turning-movement volumes under background plus project conditions.

Transportation Network Under Project Conditions

It is assumed in this analysis that the transportation network under existing plus project conditions and background plus project, including roadways and intersection lane configurations, would be the same as that described under existing conditions and background conditions, respectively, at all study intersections, except the project driveways. The project proposes to add a driveway at the south leg of the Commercial Street and Kifer Road intersection for the south project site.

Existing Plus Project Intersection Levels of Service

The intersection levels of service results for existing plus project conditions were compared to existing conditions to determine potential adverse intersection impacts (see Tables 11 and 12). Based on City of Sunnyvale and CMP intersection impact criteria, the project would generate adverse impacts at the following intersections:

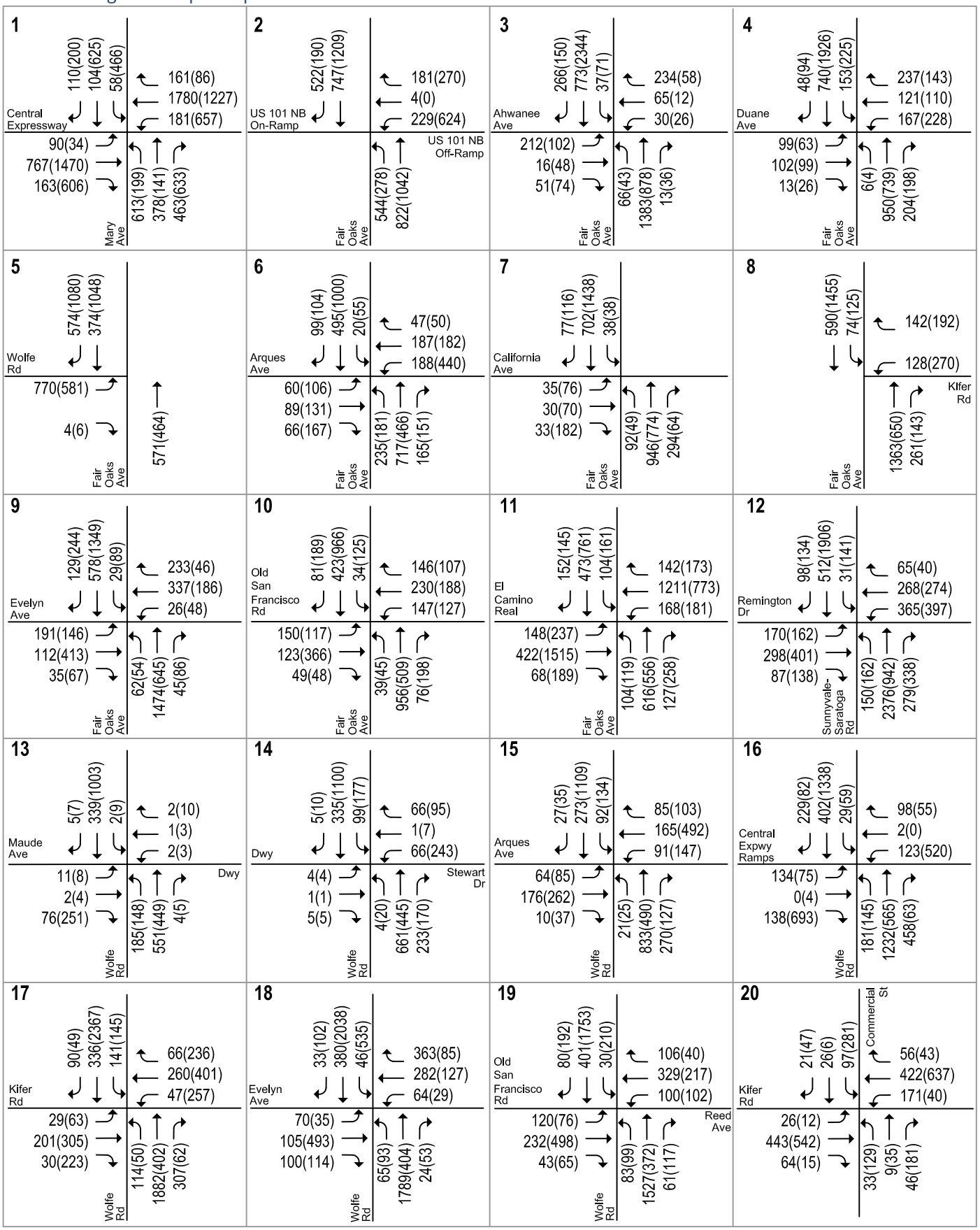
City of Sunnyvale Intersections:

- Wolfe Road and Central Expressway Ramps (#16) – PM peak hour
- Commercial Street and Kifer Road (#20) – PM peak hour
- Wolfe Road and Maude Avenue (#13) – PM peak hour

County of Santa Clara Intersection:

- Lawrence Expressway and Kifer Road (#25) – PM peak hour
- Lawrence Expressway and Monroe Street/Reed Avenue (#26) – AM peak hour

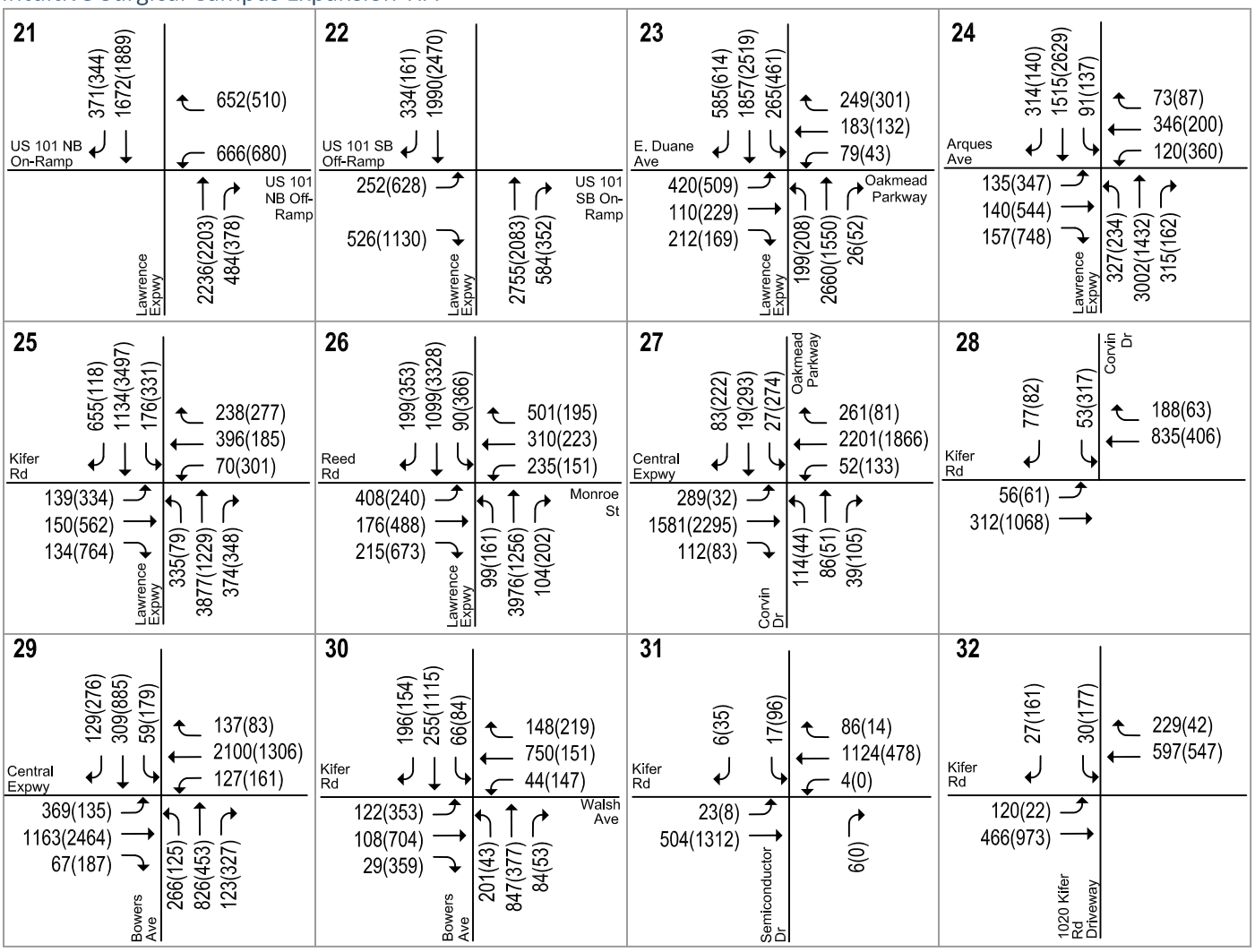
The intersection level of service sheets are included in Appendix C. The peak-hour signal warrant worksheets are included in Appendix D. The LSAP requires projects within the plan area to make a fair share contribution toward the cost of the identified improvements. Potential improvement strategies are discussed in the following section.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

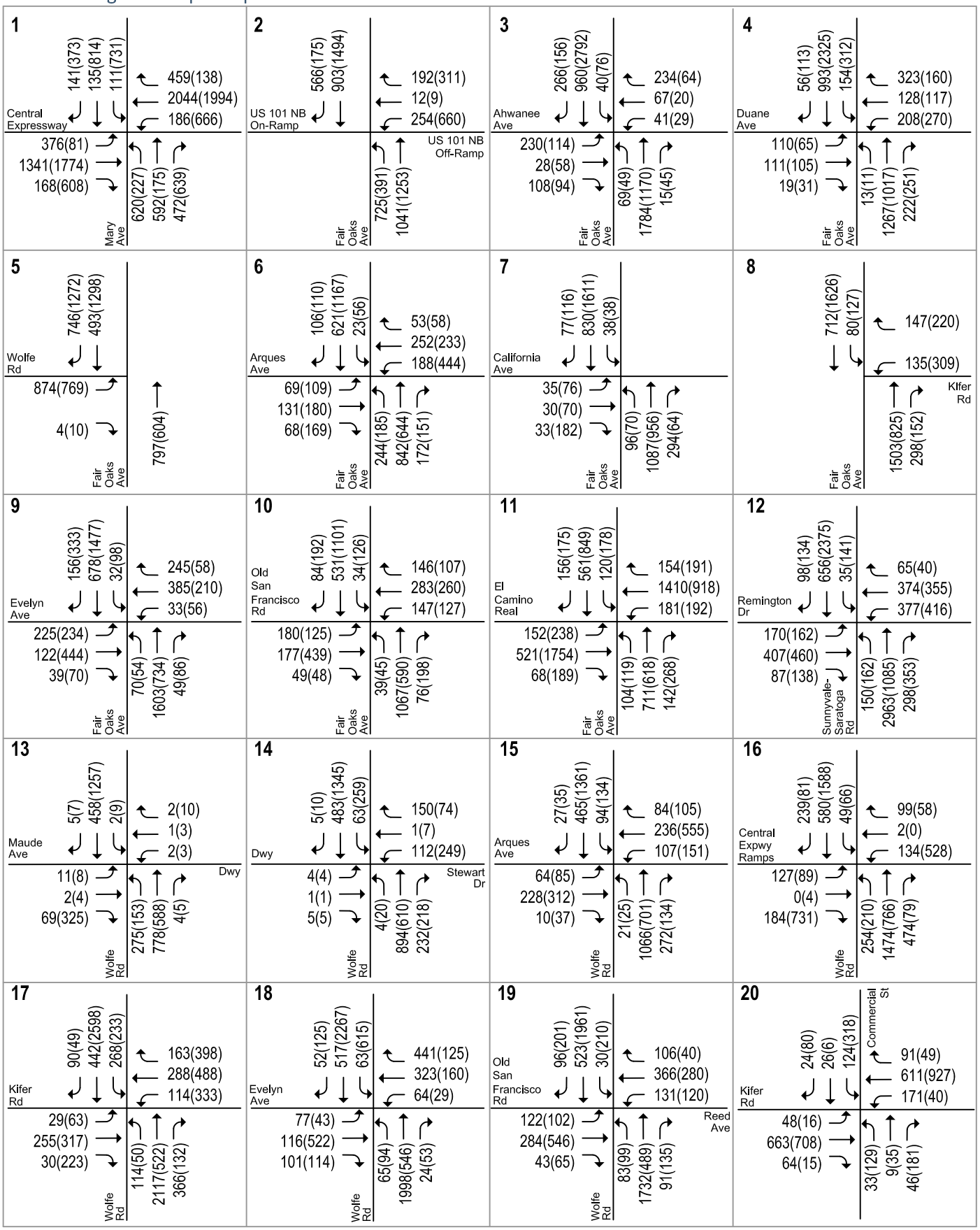
Figure 13
Existing Plus Project Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

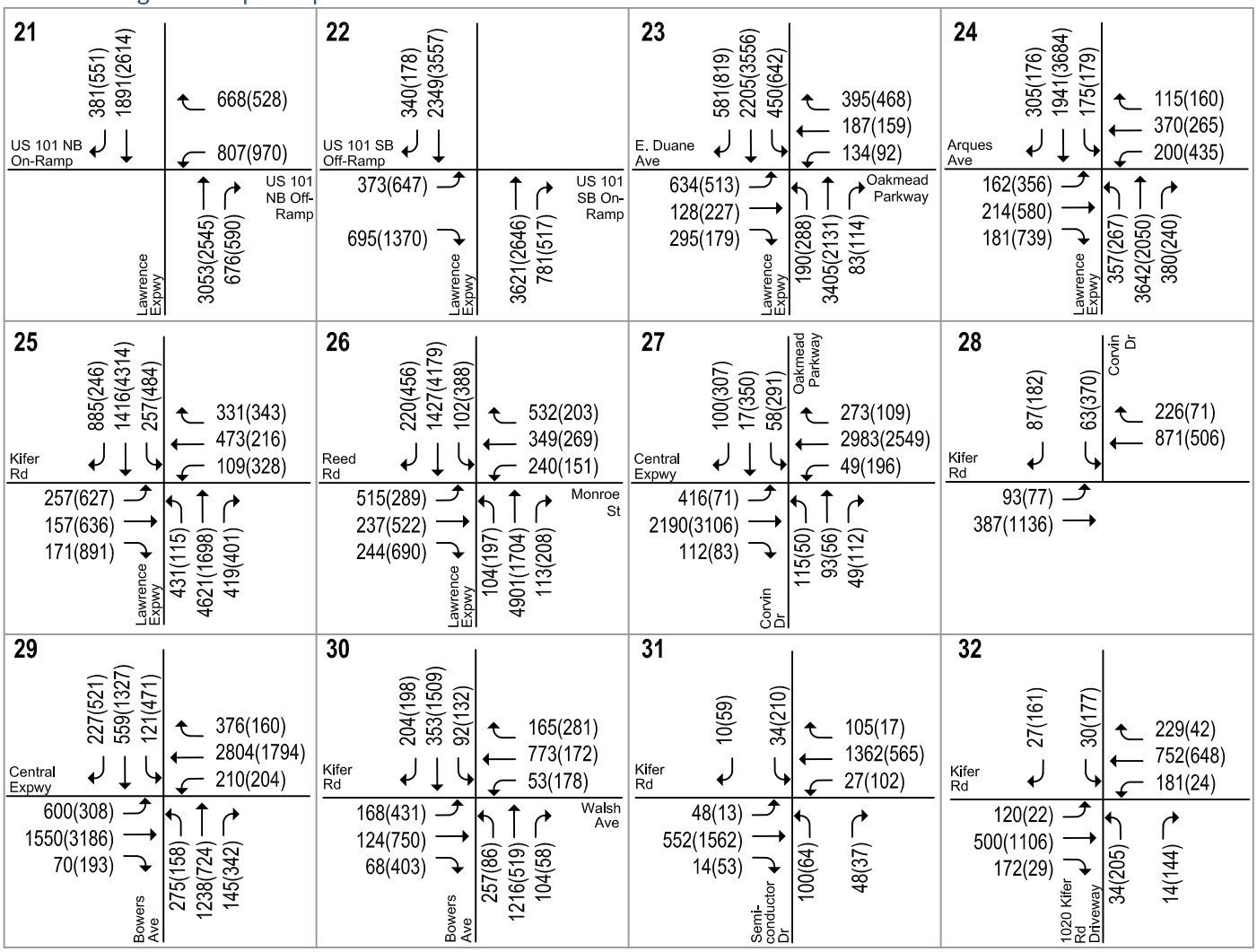
Figure 13
Existing Plus Project Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 14
Background Plus Project Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 14
Background Plus Project Traffic Volumes

Table 11
Existing Plus Project Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS	Existing + Project Conditions Avg. Delay (sec)	Existing + Project Conditions LOS	Incr. In Crit. Delay (sec)	Incr. In Crit. V/C
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-	51.5	D-	0.1	0.002
		PM	12/13/18		60.1	E	59.9	E+	0.1	0.001
2	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+	21.4	C+	0.1	0.004
		PM	05/08/18		22.8	C+	23.8	C	1.8	0.030
3	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+	20.6	C+	0.0	0.002
		PM	05/08/18		13.8	B	13.7	B	0.0	0.001
4	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-	31.8	C	-0.1	0.003
		PM	05/08/18		30.2	C	30.3	C	0.0	0.001
5	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+	23.0	C+	0.2	0.003
		PM	05/08/18		19.8	B-	19.6	B-	0.0	0.002
6	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-	34.9	C-	0.1	0.003
		PM	05/08/18		44.5	D	45.7	D	1.8	0.020
7	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+	10.7	B+	0.0	0.001
		PM	12/06/17		15.7	B	15.6	B	0.0	0.000
8	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B	16.1	B	0.6	0.023
		PM	05/08/18		25.9	C	28.7	C	3.6	0.040
9	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+	36.1	D+	0.4	0.017
		PM	05/08/18		29.8	C	29.8	C	0.1	0.021
10	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-	34.2	C-	1.4	0.023
		PM	05/08/18		33.7	C-	33.5	C-	-0.3	0.016
11	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D	41.1	D	0.2	0.007
		PM	10/30/18		41.8	D	42.0	D	0.0	0.001
12	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D	43.0	D	0.1	0.004
		PM	10/30/18		43.6	D	44.1	D	0.7	0.008
13	Wolfe Road & Maude Avenue (1)	AM	12/06/17	D	-	-	-	-	-	-
		PM	12/06/17		-	-	-	-	-	-
14	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+	22.4	C+	-0.1	0.002
		PM	11/15/17		30.8	C	30.8	C	-0.1	0.001
15	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+	35.5	D+	-0.1	0.002
		PM	11/14/17		40.8	D	40.7	D	0.0	0.001
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	37.2	D+	37.4	D+	0.0	0.000
		PM	12/06/17		**71.0**	**E**	**74.3**	**E**	**5.5**	**0.020**

Notes:
* = *CMP, County = County of Santa Clara*
(1) The Wolfe Road & Maude Avenue intersection is signalized under background conditions.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Table 11 (Continued)
Existing Plus Project Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Avg. Delay (sec)	Existing LOS	Existing + Project Conditions Avg. Delay (sec)	Existing + Project Conditions LOS	Incr. In Crit. Delay (sec)	Incr. In Crit. V/C
17	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C	32.8	C-	4.0	0.040
		PM	11/14/17		43.1	D	45.5	D	2.8	0.024
18	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+	38.5	D+	-0.1	0.006
		PM	11/15/17		36.5	D+	36.4	D+	0.0	0.007
19	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+	37.2	D+	0.4	0.009
		PM	11/14/17		38.9	D+	39.0	D	-0.1	0.004
21	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	11.9	B+	12.3	B	0.3	0.013
		PM	05/23/19		14.0	B	14.1	B	0.0	0.010
22	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	7.9	A	8.3	A	0.6	0.016
		PM	05/23/19		22.3	C+	22.0	C+	0.0	0.003
23	Lawrence Expressway & Oakmead Parkway (County)	AM	05/23/19	E	40.4	D	40.3	D	0.1	0.004
		PM	05/23/19		52.3	D-	52.4	D-	0.1	0.002
24	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	48.2	D	48.1	D	0.4	0.004
		PM	11/13/18		71.6	E	71.1	E	0.2	0.002
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-	56.9	E+	5.8	0.023
		PM	03/07/18		**101.6**	**F**	**>120**	**F**	**52.2**	**0.065**
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**	**>120**	**F**	**11.1**	**0.016**
		PM	11/13/18		61.8	E	62.1	E	0.4	0.015
27	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	46.1	D	47.8	D	2.9	0.015
		PM	11/13/18		49.7	D	51.0	D-	2.6	0.017
28	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A	7.9	A	-0.2	0.018
		PM	11/15/17		9.0	A	9.1	A	0.0	0.002
29	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D	46.6	D	0.2	0.011
		PM	11/13/18		53.8	D-	54.2	D-	0.7	0.012
30	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C	29.7	C	0.8	0.016
		PM	03/07/18		28.6	C	29.3	C	4.6	-0.035
31	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B	14.2	B	1.0	0.108
		PM	09/11/18		9.4	A	8.7	A	-0.3	0.101
32	1020 Kifer Rd Driveway & Kifer Road	AM	-	D	Future		11.0	B+	-	-
		PM	-		Intersection		15.4	B	-	-

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse project impact

Table 12
Existing Plus Project Level of Service Summary - Unsignalized Intersections

#	Intersection	Control [(1)]	Peak Hour	Count Date	Existing Delay (sec)	Existing LOS	Existing Signal Warrant Met	Existing plus Project Delay (sec)	Existing plus Project LOS	Incr. in Delay	Incr. in V/C	Signal Warrant Met
13	Wolfe Road & Maude Avenue	side-street	AM	12/06/17	25.7	D	No	27.6	D	1.9	0.005	No
		stop	PM	12/06/17	**67.4**	**F**	**Yes**	**73.6**	**F**	**6.2**	**0.001**	**Yes**
20	Commercial Street & Kifer Road	side-street	AM	12/06/17	12.3	B	No	29.6	D	17.3	0.245	No
		stop	PM	12/06/17	24.1	C	Yes	**114.0**	**F**	**89.9**	**0.415**	**Yes**

Notes:
(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Existing Plus Project Potential Intersection Improvement Strategies

Improvement options were studied for each intersection experiencing impacts under existing plus project conditions when compared to existing conditions. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to its LOS standard *or* to an average delay equal to without-project conditions or better. The LOS results under the improved existing plus project conditions are summarized in Tables 13 and 14.

TDM Plan

The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project. Non-residential developments within the LSAP area would be required to implement a Transportation Demand Management (TDM) Plan with a 30% peak hour trip reduction requirement or pay a penalty. For informational purposes, Hexagon examined whether the implementation of such a TDM Plan could eliminate any project impacts under existing plus project conditions. If the project implements a TDM Plan with a 30% peak hour trip reduction, the project could generate a lesser impact at all five study intersections under existing plus project conditions. However, the proposed TDM Plan would not restore intersection conditions to the LOS standard or to an average delay equal to without-project conditions or better for any intersection under existing plus project conditions.

Wolfe Road and Central Expressway Ramps (#16)

Under existing conditions, the LOS would be an unacceptable LOS E during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening both the eastbound and westbound Central Expressway off-ramps to include one left-turn lane, one shared through-left lane and one right-turn lane. There appears to be sufficient right-of-way to accommodate the potential improvements. The improvements would lengthen the respective crosswalks by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS D under existing plus project conditions during the PM peak hour (see Table 13). However, the improvement requires widening the Central Expressway off-ramps, which are in the County's jurisdiction, so the City cannot ensure the implementation of the potential improvement. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement.

Lawrence Expressway and Kifer Road (#25)

Under existing conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Lawrence Expressway and Monroe Street/Reed Avenue (#26) [CMP]

Under existing conditions, the LOS would be an unacceptable LOS F during the AM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impact.

The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Monroe Street/Reed Avenue. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Commercial Street and Kifer Road (#20)

Under existing conditions, the LOS would be an acceptable LOS C during the PM peak hour. The addition of project traffic would deteriorate traffic operations to an unacceptable LOS F, which meets the City of Sunnyvale's adverse intersection impact criteria. In addition, the intersection would meet the peak-hour signal warrant under existing plus project conditions during the PM peak hour.

> **Potential Improvement:** Improvement would require installation of a signal at the intersection of Commercial Street and Kifer Road. Installation of a signal would greatly reduce the delay for southbound vehicles while maintaining minimal delay for westbound and eastbound traffic. The improvement would include one left-turn lane and one shared through-right lane on the southbound approach.

With the proposed improvement, the intersection would operate at an acceptable LOS C under existing plus project conditions during the PM peak hour (see Table 14). As discussed in the *Fortinet Traffic Operations Analysis (TOA)*, prepared by Hexagon Transportation Consultants, dated December 5, 2018, a traffic signal would be required to address the potential project impacts generated by the Fortinet project at this intersection. Since the Intuitive Surgical project would also require a traffic signal to address the intersection impact, it should contribute its fair share towards the signal installation costs. As discussed in the Fortinet TOA report, the Fortinet project would generate 76 trips at this intersection during the PM peak hour. The Intuitive Surgical project would generate 538 trips during the PM peak hour at this intersection. Therefore, the Intuitive Surgical project should contribute 88% of the signal installation cost.

Wolfe Road and Maude Avenue (#13)

Under existing conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The intersection would meet the peak-hour signal warrant under existing plus project conditions during the PM peak hour and would therefore meet the City of Sunnyvale's adverse intersection impact criteria.

The currently unsignalized intersection at Wolfe Road and Maude Avenue is being signalized by Intuitive Surgical as a part of the 1050 Kifer Road project. With signalization, the intersection would operate at an acceptable LOS C under existing plus project conditions during the PM peak hour (see Table 14).

Table 13
Existing Plus Project Signalized Intersection Impact Improvements Summary

					Existing		Existing Plus Project		Existing Plus Project Improved	
#	Intersection	Peak Hour	Count Date	LOS Std.	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	37.2	D+	37.4	D+	28.2	C
		PM	12/06/17		**71.0**	**E**	**74.3**	**E**	49.4	D
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-	56.9	E+	-	D
		PM	03/07/18		**101.6**	**F**	**>120**	**F**	-	D
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**	**>120**	**F**	-	D
		PM	11/13/18		61.8	E	62.1	E	-	D

Notes:
** = CMP, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Table 14
Existing Plus Project Unsignalized Intersection Impact Improvements Summary

#	Intersection	Control [(1)]	LOS Standard	Peak Hour	Count Date	Existing Delay (sec)	Existing LOS	Existing Plus Project Delay (sec)	Existing Plus Project LOS	Existing Plus Project Improved Delay (sec)	Existing Plus Project Improved LOS
13	Wolfe Road & Maude Avenue	side-street stop	D	AM	12/06/17	25.7	D	27.6	D	20.5	C+
				PM	12/06/17	**67.4**	**F**	**73.6**	**F**	27.3	C
20	Commercial Street & Kifer Road	side-street stop	D	AM	12/06/17	12.3	B	29.6	D	24.3	C
				PM	12/06/17	24.1	C	**114.0**	**F**	29.7	C

Notes:

(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.

BOLD indicates an unacceptable level of service

BOLD and boxed indicates an adverse intersection impact

Background Plus Project Intersection Levels of Service

The intersection levels of service results for background plus project conditions were compared to background conditions to determine potential adverse intersection impacts (see Tables 15 and 16). Based on City of Sunnyvale and CMP intersection impact criteria, the project would generate adverse impacts at the following study intersections:

City of Sunnyvale Intersections:

- Wolfe Road and Central Expressway Ramps (#16) – PM peak hour (LOS F)
- Commercial Street and Kifer Road (#20) – AM and PM peak hour (LOS F)

County of Santa Clara Intersections:

- Lawrence Expressway and Kifer Road (#25) – AM and PM peak hours (LOS F)
- Lawrence Expressway and Monroe Street/Reed Avenue (#26) – AM peak hour (LOS F)
- Oakmead Parkway and Central Expressway (#27) – AM and PM peak hours (LOS F)
- Bowers Avenue and Central Expressway (#29) – PM peak hour (LOS F)

The LSAP requires projects within the plan area to make a fair share contribution toward the cost of the identified improvements. Potential improvement strategies are discussed in the following section.

Table 15
Background Plus Project Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Background		Background + Project Conditions			
					Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. In Crit. Delay (sec)	Incr. In Crit. V/C
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	73.3	E	73.3	E	0.0	0.002
		PM	12/13/18		78.0	E-	78.3	E-	0.5	0.001
2	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	26.5	C	26.8	C	0.5	0.004
		PM	05/08/18		32.7	C-	36.4	D+	7.5	0.029
3	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	21.5	C+	21.4	C+	0.1	0.002
		PM	05/08/18		14.7	B	14.7	B	0.0	0.001
4	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	33.6	C-	33.4	C-	0.1	0.003
		PM	05/08/18		35.2	D+	35.3	D+	0.7	0.019
5	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	23.8	C	23.9	C	0.1	0.003
		PM	05/08/18		22.2	C+	22.1	C+	0.0	0.002
6	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	36.2	D+	36.2	D+	0.1	0.003
		PM	05/08/18		47.1	D	48.8	D	2.5	0.019
7	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.2	B+	10.2	B+	0.0	0.002
		PM	12/06/17		15.7	B	15.6	B	0.0	0.000
8	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.8	B	16.4	B	0.7	0.023
		PM	05/08/18		31.6	C	36.4	D+	5.2	0.041
9	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	39.7	D	40.3	D	1.1	0.017
		PM	05/08/18		34.0	C-	34.4	C-	0.6	0.020
10	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	35.2	D+	36.1	D+	1.5	0.024
		PM	05/08/18		34.9	C-	34.9	C-	0.0	0.018
11	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	42.1	D	42.3	D	0.2	0.006
		PM	10/30/18		46.2	D	46.5	D	0.7	0.008
12	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	56.8	E+	57.6	E+	1.0	0.004
		PM	10/30/18		46.6	D	47.2	D	1.1	0.009
13	Wolfe Road & Maude Avenue (1)	AM	12/06/17	D	20.1	C+	20.3	C+	-0.1	0.012
		PM	12/06/17		24.7	C	24.3	C	0.0	0.002
14	Wolfe Road & Stewart Drive	AM	11/15/17	D	24.2	C	23.9	C	-0.1	0.002
		PM	11/15/17		30.4	C	30.3	C	0.0	0.001
15	Wolfe Road & Arques Avenue	AM	11/14/17	D	34.9	C-	34.6	C-	-0.1	0.002
		PM	11/14/17		39.9	D	39.7	D	0.0	0.000
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	41.2	D	41.5	D	0.0	0.000
		PM	12/06/17		**93.5**	**F**	**98.4**	**F**	**7.9**	**0.020**

Notes:

** = CMP, County = County of Santa Clara*

(1) The Wolfe Road & Maude Avenue intersection is signalized under background conditions.

BOLD indicates an unacceptable level of service

BOLD and boxed indicates an adverse intersection impact

Table 15 (Continued)
Background Plus Project Level of Service Summary - Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Background		Background + Project Conditions			
					Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. In Crit. Delay (sec)	Incr. In Crit. V/C
17	Wolfe Road & Kifer Road	AM	11/14/17	D	39.8	D	43.8	D	4.0	0.040
		PM	11/14/17		49.5	D	52.8	D-	4.1	0.024
18	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	41.0	D	41.0	D	0.0	0.006
		PM	11/15/17		37.7	D+	37.7	D+	0.0	0.007
19	Wolfe Road & Reed Avenue	AM	11/14/17	D	36.8	D+	37.1	D+	0.4	0.009
		PM	11/14/17		40.3	D	40.5	D	0.0	0.004
21	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	12.8	B	13.1	B	0.4	0.011
		PM	05/23/19		15.6	B	15.7	B	0.1	0.002
22	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	11.2	B+	12.8	B	2.7	0.016
		PM	05/23/19		28.5	C	28.5	C	0.5	0.003
23	Lawrence Expressway & Oakmead Parkway (County)	AM	05/23/19	E	70.3	E	70.0	E	0.2	0.003
		PM	05/23/19		**80.8**	**F**	**81.4**	**F**	**1.6**	**0.002**
24	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	68.4	E	69.2	E	2.3	0.004
		PM	11/13/18		**113.8**	**F**	**113.7**	**F**	**1.4**	**0.003**
25	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	**106.4**	**F**	**111.0**	**F**	**8.7**	**0.023**
		PM	03/07/18		**>120**	**F**	**>120**	**F**	**32.5**	**0.068**
26	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**>120**	**F**	**>120**	**F**	**11.6**	**0.016**
		PM	11/13/18		70.2	E	73.0	E	4.9	0.015
27	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	**116.3**	**F**	**>120**	**F**	**8.6**	**0.015**
		PM	11/13/18		**109.7**	**F**	**114.9**	**F**	**9.2**	**0.017**
28	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	9.3	A	9.2	A	-0.2	0.018
		PM	11/15/17		9.2	A	9.4	A	0.0	0.002
29	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	70.2	E	71.8	E	2.6	0.010
		PM	11/13/18		**83.4**	**F**	**85.8**	**F**	**5.0**	**0.012**
30	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	31.8	C	33.1	C-	1.8	0.017
		PM	03/07/18		36.7	D+	37.1	D+	0.0	0.000
31	Semiconductor Drive & Kifer Road	AM	09/11/18	D	17.6	B	17.6	B	0.6	0.109
		PM	09/11/18		20.7	C+	21.2	C+	0.8	0.101
32	1020 Kifer Rd Driveway & Kifer Road	AM	-	D	12.3	B	20.1	C+	0.0	0.083
		PM	-		18.3	B-	30.7	C	10.3	0.164

Notes:
** = CMP, SC = Santa Clara, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Table 16
Background Plus Project Level of Service Summary - Unsignalized Intersection

#	Intersection	Control [(1)]	Peak Hour	Count Date	Background Delay (sec)	Background LOS	Background Signal Warrant Met	Background plus Project Delay (sec)	Background plus Project LOS	Incr. in Delay	Incr. in V/C	Signal Warrant Met
20	Commercial Street & Kifer Road	side-street stop	AM	12/06/17	16.2	C	No	**89.0**	**F**	**72.8**	**0.459**	**Yes**
			PM	12/06/17	**95.9**	**F**	**Yes**	**>120**	**F**	**341.3**	**0.754**	**Yes**

Notes:
">120" indicates this unsignalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Background Plus Project Potential Intersection Improvement Strategies

Improvement options were studied for each intersection experiencing impacts under background plus project conditions when compared to background conditions. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to its LOS standard *or* to an average delay equal to without-project conditions or better. The LOS results under the improved background plus project conditions are summarized in Tables 17 and 18.

TDM Plan

For informational purposes, Hexagon examined whether the implementation of the proposed LSAP TDM requirement could eliminate any project impacts under background plus project conditions. If the project implements a TDM Plan with a 30% peak hour trip reduction, the project could generate a lesser impact at all six study intersections under background plus project conditions. However, the proposed TDM Plan would not restore intersection conditions to the LOS standard or to an average delay equal to without-project conditions or better for any intersection under background plus project conditions.

Wolfe Road and Central Expressway Ramps (#16)

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening both the eastbound and westbound Central Expressway off-ramps to include one left-turn, one shared through-left lane and one right-turn lane. There appears to be sufficient right-of-way to accommodate the potential improvements. The improvements would lengthen the respective crosswalks by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS D- under background plus project conditions during the PM peak hour (see Table 17). However, the improvement requires widening the Central Expressway off-ramps, which are in the County's jurisdiction, so the City cannot ensure the implementation of the potential improvement. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement.

Lawrence Expressway and Kifer Road (#25)

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Lawrence Expressway and Monroe Street/Reed Avenue (#26) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the AM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impact.

The LSAP requires projects within the plan area to contribute to their fair share towards the cost of the grade separation at Lawrence Expressway and Monroe Street/Reed Avenue. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Oakmead Parkway and Central Expressway (#27) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** As documented in the *Valley Transportation Plan 2040,* Central Expressway is planned to be widened to six lanes between Lawrence Expressway and San Tomas Expressway without HOV lane operations. This would improve the east-west flow of traffic and potentially address the project's impact.

With the additional lanes, the intersection would operate at an acceptable LOS D- during the AM peak hour and LOS D during the PM peak hour under background plus project conditions. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Bowers Avenue and Central Expressway (#29) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio to meet the County of Santa Clara's adverse intersection impact criteria.

Potential Improvement: According to the *City Place Santa Clara Project Draft Environmental Impact Report*, dated October 2015, the Bowers Avenue/Central Expressway intersection is recommended for lane additions to improve vehicle operations. The City Place Project is responsible for constructing third southbound left-turn and third eastbound left-turn lanes at this intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS E- under background plus project conditions during the PM peak hour. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Commercial Street and Kifer Road (#20)

Under background conditions, the LOS would be an acceptable LOS C during the AM peak hour and an unacceptable LOS F during the PM peak hour. During the AM peak hour, the addition of project traffic would deteriorate traffic operations to an unacceptable LOS F, which meets the City of Sunnyvale's adverse intersection impact criteria. During the PM peak hour, the addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria. In addition, the intersection would meet the peak-hour signal warrant under background plus project conditions during both the AM and PM peak hours.

Potential Improvement: Improvement would require installation of a signal at the intersection of Commercial Street and Kifer Road. Installation of a signal would greatly reduce the delay for southbound vehicles while maintaining minimal delay for westbound and eastbound traffic. The improvement would include one left-turn lane and one shared through-right lane on the southbound approach.

With the proposed improvement, the intersection would operate at an acceptable LOS C+ during the AM peak hour and LOS C during the PM peak hour under background plus project conditions (see Table 18). As discussed in the *Fortinet Traffic Operations Analysis (TOA)*, prepared by Hexagon Transportation Consultants, dated December 5, 2018, a traffic signal would be required to address the potential project impacts generated by the Fortinet project at this intersection. Since the Intuitive Surgical project would also require a traffic signal to address the intersection impact, it should contribute its fair share towards the signal installation costs. As discussed in the Fortinet TOA report, the Fortinet project would generate 76 trips at this intersection during the PM peak hour. The Intuitive Surgical project would generate 538 trips during the PM peak hour at this intersection. Therefore, the Intuitive Surgical project should contribute 88% of the signal installation cost.

Table 17
Background Plus Project Signalized Intersection Impact Improvements Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Background Avg. Delay (sec)	Background LOS	Background Plus Project Avg. Delay (sec)	Background Plus Project LOS	Background Plus Project Improved Avg. Delay (sec)	Background Plus Project Improved LOS
16	Wolfe Road & Central Expressway Ramps	AM	12/06/17	D	41.2	D	41.5	D	30.2	C
		PM	12/06/17		**93.5**	**F**	**98.4**	**F**	51.3	D-
25	Lawrence Expressway & Kifer Road (County) (1)	AM	03/07/18	E	**106.4**	**F**	**111.0**	**F**	-	D
		PM	03/07/18		**>120**	**F**	**>120**	**F**	-	D
26	Lawrence Expressway & Monroe Street/Reed Avenue (County*) (1)	AM	03/07/18	E	**>120**	**F**	**>120**	**F**	-	D
		PM	11/13/18		70.2	E	73.0	E	-	D
27	Oakmead Parkway & Central Expressway (County*) (1)	AM	11/15/17	E	**116.3**	**F**	**>120**	**F**	51.1	D-
		PM	11/13/18		**109.7**	**F**	**114.9**	**F**	50.5	D
29	Bowers Avenue & Central Expressway (County*) (1)	AM	11/15/17	E	70.2	E	71.8	E	61.1	E
		PM	11/13/18		**83.4**	**F**	**85.8**	**F**	77.7	E-

Notes:
* = *CMP, County = County of Santa Clara*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
(1) Intersection is not under Sunnyvale's jurisdiction, so the City cannot ensure the implementation of the potential improvement.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Table 18
Background Plus Project Unsignalized Intersection Impact Improvements Summary

#	Intersection	Control [(1)]	LOS Standard	Peak Hour	Count Date	Background Delay (sec)	Background LOS	Background Plus Project Delay (sec)	Background Plus Project LOS	Background Plus Project Improved Delay (sec)	Background Plus Project Improved LOS
20	Commercial Street & Kifer Road	side-street stop	D	AM	12/06/17	16.2	C	**89.0**	**F**	23.0	C+
				PM	12/06/17	**95.9**	**F**	**>120**	**F**	29.9	C

Notes:
">120" indicates this unsignalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay. Those reported for all-way stop-controlled intersections represent intersection average.
BOLD indicates an unacceptable level of service
BOLD and boxed indicates an adverse intersection impact

Cumulative Conditions

Cumulative conditions were studied in the *Lawrence Station Area Plan Update Transportation Impact Analysis*. This project, as part of the LSAP-Update, would contribute to the cumulative impacts and would be required to contribute to the cumulative fair share improvements.

Project Conditions Freeway Impact Analysis

VTA CMP guidelines define that a project would cause a freeway impact if the project would deteriorate freeway levels of service from an acceptable level to an unacceptable level, or if the freeway already operates at an unacceptable level under existing conditions, the project would add traffic exceeding 1% of the freeway capacity. The traffic added by the project to each freeway segment is summarized in Table 19. The project would have an adverse impact on the following freeway segments:

- SR 237 Eastbound between Lawrence Expressway and Great America Parkway – PM Peak Hour
- SR 237 Westbound between Great America Parkway and Lawrence Expressway – AM Peak Hour

To address the project impact, a trip reduction of 27% would be required for the AM peak hour and 37% would be required for the PM peak hour. As discussed above, the projects within the proposed LSAP plan area would be required to implement TDM measures achieving a 30% peak hour trip reduction. It is unclear whether higher trip reductions are attainable.

The VTA's Valley Transportation Plan (VTP) 2040 identifies freeway express lane projects along SR 237 between N. First Street and SR 85. On the identified freeway segments, the existing HOV lanes are proposed to be converted to express lanes. According to the latest VTA CMP Monitoring Report, the HOV lanes on the impacted segments currently are operating at acceptable levels of service. Therefore, converting the HOV lanes to express lanes could potentially add capacity to the freeway segment. Projects within the proposed LSAP plan area shall participate in VTA's Voluntary Freeway Contribution Program to fund improvements along SR 237.

Freeways are under Caltrans jurisdiction. Therefore, capacity improvements on freeways are beyond the capabilities of the City of Sunnyvale.

Table 19
Project Conditions Freeway Analysis Summary

				Existing Conditions - Mixed Flow Lanes[1]						Project Conditions	
Freeway	Dir.	Segment	Peak Hour	Avg. Speed (mph)	# of Lanes	Capacity	Density (pc/mi/ln)	Volume	LOS	Project Trips	% Capacity
US 101	SB	Mathilda Avenue to Fair Oaks Avenue	AM	63.0	3	6,900	24.0	3,477	C	81	1.17%
			PM	**20.6**	**3**	**6,900**	**67.0**	**4,803**	**F**	9	0.13%
US 101	SB	Fair Oaks Avenue to Lawrence Expressway	AM	60.0	3	6,900	30.0	4,710	D	40	0.58%
			PM	**12.4**	**3**	**6,900**	**79.0**	**5,058**	**F**	5	0.07%
US 101	SB	Lawrence Expressway to Great America Parkway	AM	55.0	3	6,900	35.0	4,905	D	7	0.10%
			PM	**6.4**	**3**	**6,900**	**91.0**	**5,616**	**F**	47	0.68%
US 101	NB	Great America Parkway to Lawrence Expressway	AM	**17.2**	**3**	**6,900**	**72.0**	**4,794**	**F**	40	0.58%
			PM	47.6	3	6,900	42.0	4,299	D	5	0.07%
US 101	NB	Lawrence Expressway to Fair Oaks Avenue	AM	**18.2**	**3**	**6,900**	**70.0**	**4,905**	**F**	7	0.10%
			PM	47.2	3	6,900	42.0	5,616	D	47	0.68%
US 101	NB	Fair Oaks Avenue to Mathilda Avenue	AM	**26.0**	**3**	**6,900**	**61.0**	**4,794**	**F**	15	0.22%
			PM	54.8	3	6,900	36.0	4,299	D	93	1.35%
SR 237	EB	Lawrence Expressway to Great America Parkway	AM	58.0	2	4,400	32.0	3,262	D	10	0.23%
			PM	**9.8**	**2**	**4,400**	**84.0**	**3,116**	**F**	**62**	**1.41%**
SR 237	WB	Great America Parkway to Lawrence Expressway	AM	**24.6**	**2**	**4,400**	**62.0**	**3,718**	**F**	**54**	**1.23%**
			PM	57.8	2	4,400	33.0	1,230	D	6	0.14%

Notes

Dir. = direction, NB = northbound, SB = southbound, mph = miles per hour, pc/mi/ln = passenger cars per mile per lane

[1] Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2018.

BOLD indicates substandard level of service.

BOLD and boxed indicates an adverse project impact.

Project Conditions Ramp Analysis

Freeway ramp volumes under project conditions were estimated by adding project trips to the existing volumes obtained from Caltrans. The peak hour ramp volumes under existing plus project conditions are shown in Table 20.

For the purpose of this study, the project is said to create an adverse impact on a freeway ramp if its implementation:

- Would cause the volume-to-capacity (V/C) ratio of the freeway ramp to exceed 1.0; or
- Would increase the amount of traffic on a freeway ramp that is already exceeding its capacity by more than one percent (1%) of the ramp's capacity.

The ramp analysis shows that the study freeway ramps would continue to operate below capacity under project conditions.

Table 20
Project Conditions Freeway Ramp Analysis

Interchange	Ramp	Type	Peak Hour	Existing Conditions			Project Conditions		
				Capacity[1]	Peak Volume[2]	v/c	Project Trips	Peak Volume	v/c
US101/Fair Oaks Avenue	NB On-Ramp from Fair Oaks Avenue	Diagonal	AM	1,800	1,061	0.59	7	1,068	0.59
			PM	1,800	416	0.23	47	463	0.26
	SB Off-Ramp to SB Fair Oaks Avenue	Diagonal	AM	2,000	363	0.18	40	403	0.20
			PM	2,000	893	0.45	5	898	0.45
US 101/Lawrence Expressway	NB Off-Ramp to Lawrence Expressway	Diagonal	AM	3,800	1,278	0.34	40	1,318	0.35
			PM	3,800	1,185	0.31	5	1,190	0.31
	SB On-Ramp from NB Lawrence Expressway	Diagonal	AM	1,800	584	0.32	7	591	0.33
			PM	1,800	352	0.20	47	399	0.22
	NB On-Ramp from NB Lawrence Expressway	Loop	AM	1,800	484	0.27	7	491	0.27
			PM	1,800	378	0.21	47	425	0.24
	SB Off-Ramp to Lawrence Expressway	Diagonal	AM	3,800	738	0.19	40	778	0.20
			PM	3,800	1,753	0.46	5	1,758	0.46

Notes:
NB=northbound, SB=southbound, v/c = volume-to-capacity ratio

[1] Ramp capacities were obtained from the Highway Capacity Manual, 2000 (pg 25-4), and considered the free-flow speed, the number of lanes on the ramp, and ramp metering.

[2] Peak-hour volumes are obtained from Caltrans.

[3] As a conservative approach, if an on-ramp has meter equipment present, the ramp is analyzed assuming it is metered.

5. Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with the project, including:

- operations analysis – vehicle queuing and storage at selected intersections
- potential impacts to transit services and pedestrian and bicycle facilities,
- site access and circulation, and
- parking.

Unlike the level of service impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

Queuing Analysis

The analysis of intersection level of service was supplemented with a queuing analysis for selected movements at the study intersections. Vehicle queues were estimated using a Poisson probability distribution. The operations analysis is based on vehicle queuing for high-demand left-turn movements at intersections where 10 or more project trips per lane were added. This analysis provides a basis for determining whether the addition of project trips would exacerbate peak hour queues and delays, as well as estimating future storage requirements at intersections. For signalized intersections, the estimated queue length was compared to the length of the existing turn pockets. For unsignalized intersections, the estimated queue lengths were compared to the storage space available between the limit line and the upstream intersection.

The AM queuing analysis is based on vehicle queuing for the seven movements listed below.

- Northbound left turn at Fair Oaks Avenue and Arques Avenue
- Westbound left turn at Fair Oaks Avenue and Kifer Road
- Southbound left turn at Wolfe Road and Kifer Road
- Southbound left turn at Commercial Street and Kifer Road
- Westbound left turn at Lawrence Expressway and US 101 northbound ramps
- Northbound left turn at Lawrence Expressway and Kifer Road
- Eastbound left turn at Lawrence Expressway and Kifer Road

The PM queuing analysis is based on vehicle queuing for the eight movements listed below.

- Northbound left turn at Fair Oaks Avenue and US 101 northbound ramps
- Westbound left turn at Fair Oaks Avenue and Kifer Road
- Westbound left turn at Sunnyvale-Saratoga Road and Remington Drive
- Northbound left turn at Wolfe Road and Central Expressway ramps
- Westbound left turn at Wolfe Road and Kifer Road
- Southbound left turn at Wolfe Road and Reed Avenue
- Northbound left turn at Lawrence Expressway and Kifer Road
- Eastbound left turn at Lawrence Expressway and Kifer Road

The queuing results for the background plus project scenario were compared to the background scenario to determine whether the project would cause extensive queuing issues for the AM and PM peak hours (see Table 21 and Table 22). The proposed project would create operational deficiencies at the six locations listed below during at least one peak hour.

- Northbound left turn at Fair Oaks Avenue and US 101 northbound ramps
- Northbound left turn at Wolfe Road and Central Expressway ramps
- Southbound left turn at Wolfe Road and Kifer Road
- Westbound left turn at Wolfe Road and Kifer Road
- Northbound left turn at Lawrence Expressway and Kifer Road
- Eastbound left turn at Lawrence Expressway and Kifer Road

Below is a detailed discussion of the above identified locations under background plus project conditions.

Fair Oaks Avenue and US 101 Northbound Ramps

The project is expected to add 47 vehicles during the PM peak hour onto the northbound left-turn lane under background plus project conditions and would lengthen the 95th percentile queue. This left-turn movement has one turn lane with a total queue storage space of approximately 260 feet. Under background conditions during the PM peak hour, the 95th percentile queue length would be 350 feet, with the back-of-queue extending out of the turn pocket. Under background plus project conditions, the 95th percentile queue length would be extended by 50 feet to 400 feet.

There is no room to further extend this left-turn lane. There is no feasible improvement for the identified queuing deficiency.

Wolfe Road and Central Expressway Ramps

The left-turn movement has one turn lane with a total queue storage space of approximately 300 feet. Under background conditions during the PM peak hour, the 95th percentile queue length would be 325 feet, with the back-of-queue extending out of the turn pocket. Under background plus project conditions, the proposed project would add 31 northbound left-turn vehicles during the PM peak hour. The 95th percentile queue length would be extended by 50 feet to 375 feet.

The existing median could be narrowed to extend the northbound left-turn lane to accommodate the background plus project 95th percentile queues. However, narrowing the median would require the removal of several trees.

Wolfe Road and Kifer Road

The project is expected to add 40 vehicles during the AM peak hour to the southbound left-turn movement under background plus project conditions and would lengthen the 95th percentile queue. Under background conditions during the AM peak hour, the 95th percentile queue length would be 400 feet per lane, with the back-of-queue extending out of the turn pocket. Under background plus project conditions, the 95th percentile queue length would be extended by 50 feet per lane to 450 feet per lane.

The project is expected to add 37 vehicles during the PM peak hour to the westbound left-turn movement under background plus project conditions and would lengthen the 95th percentile queue. Under background conditions during the PM peak hour, the 95th percentile queue length would be 600 feet per lane, with the back-of-queue extending out of the turn pocket. Under background plus project conditions, the 95th percentile queue length would be extended by 50 feet per lane to 650 feet per lane.

Improvements would require the construction of second southbound left-turn and westbound left-turn lanes at the Wolfe Road and Kifer Road intersection. The additional lanes would accommodate the background plus project queues for both the southbound and westbound left-turn movements. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the lane construction at Wolfe Road and Kifer Road.

Lawrence Expressway and Kifer Road

The project is expected to add 98 vehicles (or 49 vehicles per lane) during the AM peak hour to the northbound left-turn movement under background plus project conditions and would lengthen the 95th percentile queue. Under background conditions during the AM peak hour, the 95th percentile queue length would be 325 feet per lane. Under background plus project conditions, the 95th percentile queue length would be extended by 100 feet to 425 feet.

The project is expected to add 24 vehicles (or 12 vehicles per lane) during the AM peak hour and 156 vehicles (or 78 vehicles per lane) during the PM peak hour to the eastbound left-turn movement under background plus project conditions and would lengthen the 95th percentile queues. Since the 95th percentile queue under background plus project conditions is longer during the PM peak hour (600 feet compared to 275 feet during the AM peak hour), the following discussion is focused on the PM peak hour.

Under background conditions during the PM peak hour, the 95th percentile queue length would be 475 feet per lane, with the back-of-queue extending out of the turn pocket. Under background plus project conditions, the addition of project trips would extend the 95th percentile queue by 125 feet per lane to 600 feet per lane.

There is no room to further extend the eastbound left-turn pocket. It is expected that the proposed Lawrence Expressway Grade Separation project at this intersection would remove the identified queuing issue. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road.

Table 21
AM Queuing Analysis Summary

	Fair Oaks Avenue and Arques Avenue	Fair Oaks Avenue and Kifer Road	Wolfe Road and Kifer Road	Commercial Street and Kifer Road	Lawrence Expressway and US 101 NB Ramps	Lawrence Expressway and Kifer Road	
Movement:	**NBL [3]**	**WBL [3]**	**SBL**	**SBL**	**WBL**	**NBL**	**EBL**
Existing							
Cycle/Delay[1] (sec)	100	265	160	12.3	85	181	181
Volume (vphpl)	230	89	101	90	258	119	58
Avg. Queue (veh/ln.)	6	7	4	0	6	6	3
Avg. Queue[2] (ft./ln)	150	175	100	0	150	150	75
95th%. Queue (veh/ln.)	11	11	8	1	10	10	6
95th%. Queue[2] (ft./ln)	275	275	200	25	250	250	150
Storage (ft./ ln.)	300	830	365	575	615	375	210
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y
Background							
Cycle/Delay[1] (sec)	100	265	160	16.2	85	181	181
Volume (vphpl)	239	95	228	120	312	167	117
Avg. Queue (veh/ln.)	7	7	10	1	7	8	6
Avg. Queue[2] (ft./ln)	175	175	250	25	175	200	150
95th%. Queue (veh/ln.)	11	12	16	2	12	13	10
95th%. Queue[2] (ft./ln)	275	300	400	50	300	325	250
Storage (ft./ ln.)	300	830	365	575	615	375	210
Adequate (Y/N)	Y	Y	N	Y	Y	Y	N
Background Plus Project							
Cycle/Delay[1] (sec)	100	265	160	89	85	181	181
Volume (vphpl)	244	102	268	174	325	216	129
Avg. Queue (veh/ln.)	7	8	12	4	8	11	6
Avg. Queue[2] (ft./ln)	175	200	300	100	200	275	150
95th%. Queue (veh/ln.)	11	12	18	8	12	17	11
95th%. Queue[2] (ft./ln)	275	300	450	200	300	425	275
Storage (ft./ ln.)	300	830	365	575	615	375	210
Adequate (Y/N)	Y	Y	N	Y	Y	N	N
Project Related Operational Deficiency?	No	No	**Yes**	No	No	**Yes**	**Yes**

Notes:

[1] Vehicle queue calculations based on cycle length for signalized intersections.

[2] Assumes 25 feet per vehicle queued.

[3] Cycle length calibrated so calculated average queue length matches conditions observed in the field.

BOLD indicates that the storage cannot accommodate the anticipated 95th percentile queue under background plus project conditions and the 95th percentile queue is expected to increase by at least one vehicle compared to background conditions.

Table 22
PM Queuing Analysis Summary

	Fair Oaks Avenue and US 101 NB Ramps	Fair Oaks Avenue and Kifer Road	Sunnyvale-Saratoga Road and Remington Drive	Wolfe Road and Central Expressway Ramps	Wolfe Road and Kifer Road	Wolfe Road and Reed Avenue	Lawrence Expressway and Kifer Road	
Movement:	**NBL**	**WBL [3]**	**WBL**	**NBL**	**WBL [3]**	**SBL [3]**	**NBL**	**EBL**
Existing								
Cycle/Delay[1] (sec)	95	60	160	160	205	210	190	190
Volume (vphpl)	231	146	186	114	220	96	34	89
Avg. Queue (veh/ln.)	6	2	8	5	13	6	2	5
Avg. Queue[2] (ft./ln)	150	50	200	125	325	150	50	125
95th%. Queue (veh/ln.)	10	5	13	9	19	10	4	9
95th%. Queue[2] (ft./ln)	250	125	325	225	475	250	100	225
Storage (ft./ ln.)	260	830	370	300	185	240	375	210
Adequate (Y/N)	Y	Y	Y	Y	N	N	Y	N
Background								
Cycle/Delay[1] (sec)	95	60	160	160	205	210	190	190
Volume (vphpl)	344	173	196	179	296	96	52	236
Avg. Queue (veh/ln.)	9	3	9	8	17	6	3	12
Avg. Queue[2] (ft./ln)	225	75	225	200	425	150	75	300
95th%. Queue (veh/ln.)	14	6	14	13	24	10	6	19
95th%. Queue[2] (ft./ln)	350	150	350	325	600	250	150	475
Storage (ft./ ln.)	260	830	370	300	185	240	375	210
Adequate (Y/N)	N	Y	Y	N	N	N	Y	N
Background Plus Project								
Cycle/Delay[1] (sec)	95	60	160	160	205	210	190	190
Volume (vphpl)	391	219	208	210	333	105	58	314
Avg. Queue (veh/ln.)	10	4	9	9	19	6	3	17
Avg. Queue[2] (ft./ln)	250	100	225	225	475	150	75	425
95th%. Queue (veh/ln.)	16	7	14	15	26	10	6	24
95th%. Queue[2] (ft./ln)	400	175	350	375	650	250	150	600
Storage (ft./ ln.)	260	830	370	300	185	240	375	210
Adequate (Y/N)	N	Y	Y	N	N	N	Y	N
Project Related Operational Deficiency?	**Yes**	No	No	**Yes**	**Yes**	No	No	**Yes**

Notes:

[1] Vehicle queue calculations based on cycle length for signalized intersections.

[2] Assumes 25 feet per vehicle queued.

[3] Cycle length calibrated so calculated average queue length matches conditions observed in the field.

BOLD indicates that the storage cannot accommodate the anticipated 95th percentile queue under background plus project conditions and the 95th percentile queue is expected to increase by at least one vehicle compared to background conditions.

Potential Impacts to Transit Facilities

The project site is located about 3,700 feet from the Lawrence Caltrain Station. Under existing conditions, there is not a continuous pedestrian path between the project site and the Lawrence Caltrain Station. The proposed project includes frontage improvements along both the north and south project site. Given the project's free daily shuttle service and the site's proximity to the Lawrence Caltrain Station, it is possible that some Intuitive Surgical employees would utilize Caltrain. Several trains currently operate at or near capacity. The Caltrain electrification project would enable Caltrain to provide more frequent train service at the Lawrence Caltrain station. Caltrain predicts an initial capacity increase of over 30%. It is expected that the Caltrain electrification project would accommodate the potential increase in transit ridership generated by the project. It is assumed that if the free shuttle service becomes full, employers would increase their funding for the service as required by their TDM requirements or as a part of their commuter benefits, and additional shuttles would be provided to meet the demand.

There is also one ACE shuttle that has a bus stop within ¼ of the project site. There probably would be employees of the project that would ride this bus. This route has sufficient capacity to accommodate additional riders.

Transit Travel Time Impacts

Currently, ACE bus route 822 travels within the project vicinity through some of the study intersections. To assess the transit travel time impacts, the bus route travel times in the study area under background plus project conditions were compared to background conditions. Bus route travel times are estimated using published schedules and adjusted based on delays experienced at study intersection movements. VTA does not have established criteria to determine impact to transit services. Therefore, this analysis is presented for information purposes only.

The results show that there would be minimal changes in transit delay in the study area under the project scenario. For the ACE Gray Shuttle, the project would increase route delay by up to 65 seconds during the peak hours. The proposed project would be located within and consistent with the proposed Lawrence Station Area Plan (LSAP) Update, and the cumulative transit related impacts are included in the traffic impact analysis report prepared by the LSAP-Update study. The project is expected to worsen left-turn queuing at six left-turn movements (identified in above section). The ACE Gray Shuttle would not turn left at these six left-turn movements. The results of the transit travel time comparison are summarized in Table 23.

Table 23
Transit Travel Time Delay Analysis

Route	Peak Hour	Existing Travel Time (min)	Existing Delay in the Study Area (sec)	Background Delay in the Study Area (sec)	Background + Project Delay in the Study Area (sec)	Background + Project Change in Delay (sec)	Background + Project % Change in Travel Time
ACE 822 (Gray Shuttle) [1]							
Northbound	PM	40	326.1	389.9	426.9	37.0	1.50%
Southbound	AM	32	328.8	478.8	543.3	64.5	3.12%

Notes
[1] ACE 822 operates with northbound services during the PM peak commute period and southbound services during the AM peak commute period.

Potential Impacts to Pedestrian Facilities

The proposed project is expected to generate pedestrian walking trips between the project site and the nearby Lawrence Caltrain Station. As part of the proposed project, sidewalks would be added on the Kifer Road project frontages. The project proposes detached sidewalks along the streets fronting the south project site. Detached sidewalks provide barriers between pedestrians and roadway traffic and would improve pedestrian safety and comfort levels. The project also proposes a new multi-modal path that would create a continuous pedestrian and bicycle network from the Caltrain Station through to Kifer Road along the south and west boundaries of the south site (see Figure 2). A continuous pedestrian network from the project site to the Lawrence Caltrain Station is anticipated with the buildout of the LSAP.

Outside of trips to and from the Caltrain station, the project is expected to generate minimal pedestrian traffic to the surrounding area. The project plans to provide various on-site services to reduce daily trips, including food service, food vending, postage and mail services, onsite ATM, and onsite dry cleaning and laundry. The project would also provide a fitness center, jogging paths, and private recreational facilities.

The proposed project would install a private pedestrian bridge across Kifer Road connecting the north project site to the south project site. This would provide a safe way for employees to access both buildings, without impacting traffic on Kifer Road. The project also proposes crosswalks at all legs of the Commercial Street and Kifer Road intersection and the north, east, and west legs of the proposed signalized driveway. Crosswalks are also proposed along Kifer Road at the two visitor driveways and at various locations within the project site.

The project is consistent with the proposed LSAP-Update plan and would improve pedestrian facilities by providing sidewalks, crosswalks, and a continuous connection between the project site and the Lawrence Caltrain Station.

Potential Impacts to Bicycle Facilities

Within the immediate project vicinity, bike lanes are present on Kifer Road, Evelyn Avenue, Reed Avenue/Old San Francisco Road, Wolfe Road, and Arques Avenue (see Figure 4 in Chapter 2). The project site is located within an industrial area, and nearby streets carry high traffic volumes. The proposed project is expected to generate bicycle trips between the project site and the Lawrence Caltrain Station. There are currently no continuous bicycle facilities connecting the project site to the Caltrain Station. The project proposes a new multi-modal path that would create a continuous pedestrian and bicycle network from the Caltrain Station through to Kifer Road along the south and west boundaries of the south site (see Figure 2).

The project is consistent with the proposed LSAP-Update plan and would improve bicycle facilities by providing a continuous connection between the project site and the Lawrence Caltrain Station.

Site Access and Circulation

The evaluation of site access and circulation is based on the plan dated February 28, 2020. Site access and circulation was reviewed in accordance with generally accepted traffic engineering standards.

Site Access

Vehicular access to the project site would be provided via four driveways along Kifer Road. Two driveways would provide access to the north project site and two driveways would provide access to the south project site. All four driveways would be full access. The eastern driveway of the north site is proposed to be signalized and would provide access to the employee basement parking and loading dock at the office building. The western driveway of the north site would provide access to the visitor surface parking lot and drop-off location. The western driveway of the south site would be the south leg of the existing Commercial Street and Kifer Road intersection and would provide access to the employee parking structure, visitor surface parking lot, and loading docks at the research and development building. The eastern driveway of the south site would provide access for pick-ups and drop-offs. The driveways are at least twenty feet wide and meet the Sunnyvale Municipal Code (Chapter 19.46.120).

Site Access Queuing

As shown on Figure 2, access to the main parking areas is provided by the north leg of the proposed signalized driveway at 1020 Kifer Road for the north site and the south leg of the Commercial Street and Kifer Road intersection for the south site. The western driveway of the south site would have two inbound lanes, which would provide more on-site storage capacity for potential inbound vehicles queuing at the on-site security gate. In addition, the parking garage driveway on the south site would have a reversible lane, providing two inbound lanes during the AM and two outbound lanes during the PM. The reversible lane would provide more throughput capacity through the on-site security gate for inbound vehicles in the morning and exiting vehicles during the evening.

A queuing analysis (shown on Table 24) indicates that the 95th percentile queue for the southbound left-turn movement at the north site's signalized driveway would be 200 feet during the PM peak hour. The 95th percentile queue for the northbound left-turn movement at the Commercial Street driveway would be 150 feet during the PM peak hour. Both driveways queues would extend out of the turn pocket towards the parking garage exits. All other driveway entrances and exits would have sufficient storage to accommodate the anticipated 95th percentile queues. While the 95th percentile queues for vehicles exiting the project driveways would extend beyond the proposed turn pockets, this queue length is expected to be observed only once or twice during the peak hour. As shown on Table 24, the average queue lengths for existing vehicles do not extend beyond the turn pockets.

Table 24
Queuing Analysis – Project Driveways

	Commercial Street and Kifer Road				1020 Kifer Road Driveway and Kifer Road			
Movement:	NBL	NBL	WBL	WBL	SBL	SBL	EBL	EBL
Peak Hour:	AM	PM	AM	PM	AM	PM	AM	PM
Background Plus Project								
Cycle/Delay[1] (sec)	90	90	90	90	90	90	90	90
Volume (vphpl)	33	129	171	40	30	177	120	22
Avg. Queue (veh/ln.)	1	3	4	1	1	4	3	1
Avg. Queue[2] (ft./ln)	25	75	100	25	25	100	75	25
95th%. Queue (veh/ln.)	3	6	8	3	2	8	6	2
95th%. Queue[2] (ft./ln)	75	150	200	75	50	200	150	50
Storage (ft./ ln.)	135	135	650	650	125	125	325	325
Adequate (Y/N)	Y	N	Y	Y	Y	N	Y	Y

Notes:
[1] Vehicle queue calculations are based on cycle length for signalized intersections, and movement delay for unsignalized intersections.
[2] Assumes 25 feet per vehicle queued.

Site Distance at the Project Driveways

The project access points should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other roadway users travelling on adjacent roadways. Landscaping and parking should not conflict with a driver's ability to locate a gap in traffic and see oncoming pedestrians and bicyclists. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with City standards.

All four project driveways would allow all movements, thus the project traffic exiting these driveways would need to have adequate sight distance in both directions. The speed limit on Kifer Road is 40 miles per hour. The Caltrans recommended stopping sight distance is 360 feet (based on a design speed of 45 mph). Kifer Road under project conditions would not have roadway curves or on-street parking that would block a driver's view of oncoming traffic 360 feet down the road.

Recommendation

The project applicant shall ensure that there would not be tall vegetation or objects that could block a driver's view 360 feet down the road as they exit the project driveways on Kifer Road.

Circulation

The project site would have two main driveway aisles that provide access to the parking garages and two secondary driveway aisles that provide access to visitor parking and drop-off locations. The parking aisles throughout the project site, including the parking garages, are at least 24 feet wide, which would be adequate for two-way vehicle travel and to allow maneuvering in/out of parking spaces. The parking spaces within the parking garages are 8 feet 6 inches wide by 18 feet long satisfying the City of Sunnyvale standard parking space requirements.

Emergency Vehicles, Truck Access and Circulation

All driving aisles on the project site are at least 20 feet wide for emergency vehicle access and circulation per City standards. Loading zones and garbage truck access are also provided in accordance with City requirements.

Parking

The review of on-site parking is based on the plan dated February 28, 2020 and the LSAP parking requirements.

Vehicle Parking

The project proposes a five-story, above-grade parking structure to serve the south site and a two-story parking basement below the office building to serve the north site. However, up to 180 spaces in the south parking structure would serve the north site. The project proposes to provide 2,550 parking spaces – 822 on the north site and 1,728 on the south site. LSAP requirements are summarized in Table 25.

Based on LSAP parking requirements, the proposed project would be required to provide between 2,550 and 3,943 vehicle parking spaces. Thus, the project vehicle parking would meet the lower end of the required LSAP vehicle parking. Based on the project TDM plan dated February 28, 2020 the project is also providing preferential parking for 128 carpool and pick-up/drop-off locations for shared ride services. This will encourage the use of alternative modes of travel and reduce parking demand.

Table 25
Proposed Project Vehicle Parking Requirement

Land Use	Rate	Vehicle Parking Spaces
Proposed		
Office and R&D	-	2,550
LSAP Parking Requirements [1]		
Office [2]	2.75 - 4.00 per 1,000 s.f.	966 - 1,404
R&D [2]	2.00 - 3.20 per 1,000 s.f.	1,662 - 2,660
Total Vehicle Parking Spaces Required [3]		***2,550 - 3,943***

Notes
s.f. = square feet
[1] Source: *Sunnyvale Municipal Code* , Chapter 19.35 Lawrence Station Area Specific Plan District, Table 19.35.080A: Off-Street Vehicle Parking Space Requirements
[2] Amenity areas are not counted towards parking because they only serve onsite employees
[3] Three percent reduction applied due to provision of shower and locker facilities per *Sunnyvale Municipal Code* Section 19.46.100 (e)

Bicycle Parking Requirements

The project proposes to provide a total of 198 bicycle parking spaces, including 50 short-term bicycle parking spaces and 148 long-term bicycle parking spaces. LSAP requirements are summarized in Table 26.

Based on LSAP parking requirements, the proposed project would be required to provide a total of 197 bicycle parking spaces, including 148 long term secured bicycle parking spaces and 49 short term bicycle racks. Therefore, the project bicycle parking would meet the requirement.

Table 26
Project Bicycle Parking Requirement

Land Use	Rate	Bicycle Parking Spaces
LSAP Parking Requirements [1]		
Short Term	1.0 per 25% of 6,000 s.f.	49
Long Term	1.0 per 75% of 6,000 s.f.	148
Total Bicycle Parking Spaces Required		***197***

Notes
s.f. = square feet
[1] Source: *Sunnyvale Municipal Code* , Chapter 19.35 Lawrence Station Area Specific Plan District, Table 19.35.080B: LSAP Bicycle Parking Requirements

6. Conclusions

This report presents the results of the transportation impact analysis (TIA) conducted for the proposed Intuitive Surgical Engineering Campus Expansion at 932, 950, and 945-955 Kifer Road in Sunnyvale, California. The project comprises a 15.6-acre site located on the north side of Kifer Road and a 16.8-acre site located on the south side of Kifer Road between Lawrence Expressway and Wolfe Road. The project proposes 380,000 square feet of office space on the north site and 900,000 square feet of research and development space on the south site[1]. The two sites would be connected by a private pedestrian bridge across Kifer Road and would be integrated with the existing nearby Intuitive Surgical facilities. The project proposes to construct the office building on the north site to replace an existing surface parking lot. The research and development building on the south site would replace an existing office building and vacant industrial building. Access to the north site would be primarily provided via a proposed signalized driveway at the east property line, as well as a visitor driveway to the west. Access to the south site would be primarily provided via a proposed driveway on the south leg of the Commercial Street and Kifer Road intersection, as well as a visitor driveway to the east.

This study was conducted for the purpose of identifying the potential near-term traffic impacts related to the proposed development. The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project, and the potential long-term traffic impacts are presented in the traffic study conducted for the LSAP-Update.

Intersection Level of Service Results

The intersection level of service analysis showed that based on City of Sunnyvale intersection impact criteria, the project would generate an adverse intersection impact at five signalized intersections and one unsignalized intersection during at least one peak period.

Potential Improvements Strategies for Intersection Impacts

Improvement options were studied for the five impacted signalized intersections and two impacted unsignalized intersections. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to the LOS standard *or* to an average delay equal to without-project conditions or better.

[1] The project size has since been reduced to 364,000 square feet of office space (including 13,000 square feet of cafeteria space) on the north site and 847,000 square feet of research and development space (including 16,000 square feet of cafeteria space) and an 11,000 square-foot detached amenity building on the south site. This analysis reflects a slightly conservative project description.

TDM Plan

The project is consistent with the proposed Lawrence Station Area Plan (LSAP) Update project. Non-residential developments within the LSAP area would be required to implement a Transportation Demand Management (TDM) Plan with a 30% peak hour trip reduction requirement or pay a penalty. For informational purposes, Hexagon examined whether the implementation of such a TDM Plan could eliminate any project impacts under background plus project conditions. If the project implements a TDM Plan with a 30% peak hour trip reduction, the project could generate a lesser impact at all six study intersections under background plus project conditions. However, the proposed TDM Plan would not restore intersection conditions to the LOS standard or to an average delay equal to without-project conditions or better for any intersection under background plus project conditions.

Wolfe Road and Central Expressway Ramps (#16)

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening both the eastbound and westbound Central Expressway off-ramps to include one left-turn, one shared through-left lane and one right-turn lane. There appears to be sufficient right-of-way to accommodate the potential improvements. The improvements would lengthen the respective crosswalks by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS D- under background plus project conditions during the PM peak hour. However, the improvement requires widening the Central Expressway off-ramps, which are in the County's jurisdiction, so the City cannot ensure the implementation of the potential improvement. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement.

Lawrence Expressway and Kifer Road (#25)

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP requires projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Lawrence Expressway and Monroe Street/Reed Avenue (#26) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the AM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impact.

The LSAP requires projects within the plan area to contribute to their fair share towards the cost of the grade separation at Lawrence Expressway and Monroe Street/Reed Avenue. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Oakmead Parkway and Central Expressway (#27) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** As documented in the *Valley Transportation Plan 2040,* Central Expressway is planned to be widened to six lanes between Lawrence Expressway and San Tomas Expressway without HOV lane operations. This would improve the east-west flow of traffic and potentially address the project's impact.

With the additional lanes, the intersection would operate at an acceptable LOS D- during the AM peak hour and LOS D during the PM peak hour under background plus project conditions. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Bowers Avenue and Central Expressway (#29) [CMP]

Under background conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase both the critical-movement delay and V/C ratio to meet the County of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** According to the *City Place Santa Clara Project Draft Environmental Impact Report*, dated October 2015, the Bowers Avenue/Central Expressway intersection is recommended for lane additions to improve vehicle operations. The City Place Project is responsible for constructing third southbound left-turn and third eastbound left-turn lanes at this intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS E- under background plus project conditions during the PM peak hour. The LSAP requires projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Commercial Street and Kifer Road (#20)

Under background conditions, the LOS would be an acceptable LOS C during the AM peak hour and an unacceptable LOS F during the PM peak hour. During the AM peak hour, the addition of project traffic would deteriorate traffic operations to an unacceptable LOS F, which meets the City of Sunnyvale's adverse intersection impact criteria. During the PM peak hour, the addition of project traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria. In addition, the intersection would meet the peak-hour signal warrant under background plus project conditions during both the AM and PM peak hours.

Potential Improvement: Improvement would require installation of a signal at the intersection of Commercial Street and Kifer Road. Installation of a signal would greatly reduce the delay for southbound vehicles while maintaining minimal delay for westbound and eastbound traffic. The improvement would include one left-turn lane and one shared through-right lane on the southbound approach.

With the proposed improvement, the intersection would operate at an acceptable LOS C+ during the AM peak hour and LOS C during the PM peak hour under background plus project conditions. As discussed in the *Fortinet Traffic Operations Analysis (TOA)*, prepared by Hexagon Transportation Consultants, dated December 5, 2018, a traffic signal would be required to address the potential project impacts generated by the Fortinet project at this intersection. Since the Intuitive Surgical project would also require a traffic signal to address the intersection impact, it should contribute its fair share towards the signal installation costs. As discussed in the Fortinet TOA report, the Fortinet project would generate 76 trips at this intersection during the PM peak hour. The Intuitive Surgical project would generate 538 trips during the PM peak hour at this intersection. Therefore, the Intuitive Surgical project should contribute 88% of the signal installation cost.

Wolfe Road and Maude Avenue (#13)

Under existing conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The intersection would meet the peak-hour signal warrant under existing plus project conditions during the PM peak hour and would therefore meet the City of Sunnyvale's adverse intersection impact criteria.

The currently unsignalized intersection at Wolfe Road and Maude Avenue is being signalized by Intuitive Surgical as a part of the 1050 Kifer Road project. With signalization, the intersection would operate at an acceptable LOS C under existing plus project conditions during the PM peak hour.

Freeway Impacts

The results of the CMP freeway analysis show that the project is anticipated to have an adverse impact on two study freeway segments, identified below:

- SR 237 Eastbound between Lawrence Expressway and Great America Parkway – PM Peak Hour
- SR 237 Westbound between Great America Parkway and Lawrence Expressway – AM Peak Hour

To address the project impact, a trip reduction of 27% would be required for the AM peak hour and 37% would be required for the PM peak hour. As discussed above, the projects within the proposed LSAP plan area would be required to implement TDM measures achieving a 30% peak hour trip reduction. It is unclear whether higher trip reductions are attainable.

The VTA's Valley Transportation Plan (VTP) 2040 identifies freeway express lane projects along SR 237 between N. First Street and SR 85. On the identified freeway segments, the existing HOV lanes are proposed to be converted to express lanes. According to the latest VTA CMP Monitoring Report, the HOV lanes on the impacted segments currently are operating at acceptable levels of service. Therefore, converting the HOV lanes to express lanes could potentially add capacity to the freeway segment. Projects within the proposed LSAP plan area shall participate in VTA's Voluntary Freeway Contribution Program to fund improvements along SR 237.

Freeways are under Caltrans jurisdiction. Therefore, capacity improvements on freeways are beyond the capabilities of the City of Sunnyvale.

Freeway Ramp Impacts

The results of the ramp analysis show that the study freeway ramps currently have sufficient capacity to service the existing traffic volumes and the ramps would continue to have sufficient capacity to serve the project traffic volumes under project conditions.

Other Transportation Issues

Hexagon conducted a site plan review, queuing analysis, pedestrian, bicycle and transit facility analysis and parking analysis for the proposed project. Our recommendation is listed below.

Recommendation

- The project applicant shall ensure that there would not be tall vegetation or objects that could block a driver's view 360 feet down the road as they exit the project driveways on Kifer Road.

Intuitive Surgical Campus Expansion
Transportation Impact Analysis

Technical Appendices

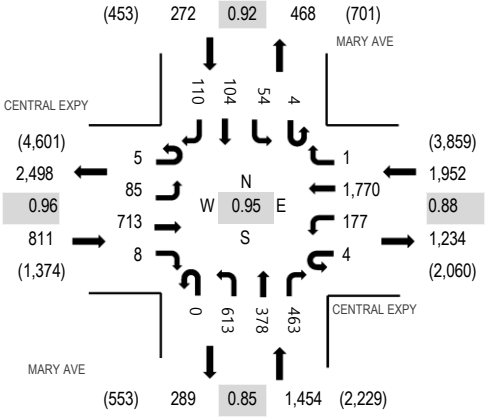
August 13, 2020

Appendix A
Traffic Counts

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

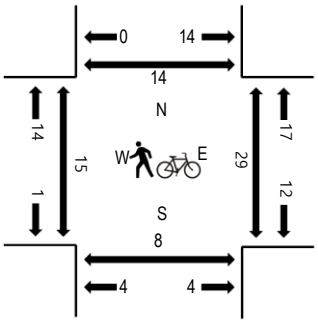
Location: 42 MARY AVE & CENTRAL EXPY AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				MARY AVE Northbound				MARY AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	6	87	0	1	45	439	0	0	61	15	54	0	5	9	26	748	3,634	1	5	0	1
7:15 AM	0	6	108	0	2	51	569	0	0	57	19	59	0	5	13	25	914	4,024	0	1	0	0
7:30 AM	0	15	120	0	1	56	456	0	0	101	33	97	1	1	24	22	927	4,231	0	0	0	0
7:45 AM	1	14	160	0	0	57	439	0	0	135	62	112	0	11	27	27	1,045	4,489	3	2	0	1
8:00 AM	0	22	191	4	0	52	510	0	0	123	64	110	2	10	29	21	1,138	4,281	0	7	3	4
8:15 AM	4	19	169	3	2	34	396	0	0	175	125	120	2	21	22	29	1,121		6	5	1	2
8:30 AM	0	30	193	1	2	34	425	1	0	180	127	121	0	12	26	33	1,185		4	8	3	7
8:45 AM	0	31	190	0	0	40	243	4	0	97	103	79	0	17	26	7	837		0	0	0	0

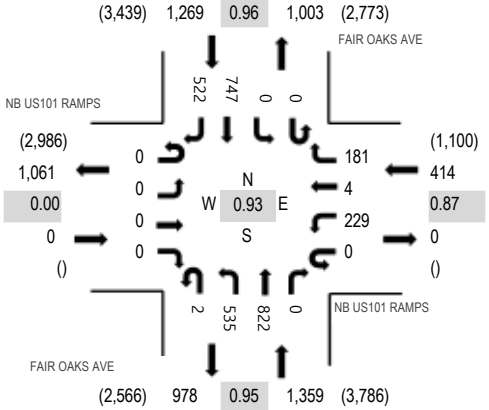
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	1	4	0	0	0	2	1	0	0	1	0	10
Lights	4	85	705	8	4	172	1,728	1	0	609	371	457	4	53	102	107	4,410
Mediums	1	0	7	0	0	4	38	0	0	4	5	5	0	1	1	3	69
Total	5	85	713	8	4	177	1,770	1	0	613	378	463	4	54	104	110	4,489

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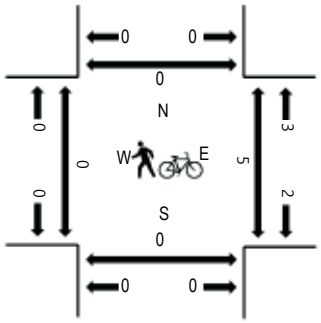
Location: 10 FAIR OAKS AVE & NB US101 RAMPS AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	NB US101 RAMPS Eastbound				NB US101 RAMPS Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	54	0	48	1	71	81	0	0	0	98	98	451	2,512	0	0	0	0
7:15 AM	0	0	0	0	0	48	1	56	0	112	85	0	0	0	144	111	557	2,878	0	0	0	0
7:30 AM	0	0	0	0	0	82	0	33	2	122	147	0	0	0	186	135	707	2,976	0	0	0	0
7:45 AM	0	0	0	0	0	94	0	40	1	133	210	0	0	0	174	145	797	3,042	0	0	0	0
8:00 AM	0	0	0	0	0	54	1	58	1	159	212	0	0	0	198	134	817	3,022	0	0	0	0
8:15 AM	0	0	0	0	0	46	1	42	0	102	164	0	0	0	190	110	655	2,905	0	2	0	0
8:30 AM	0	0	0	0	0	35	2	41	0	141	236	0	0	0	185	133	773	3,000	0	3	0	0
8:45 AM	0	0	0	0	0	25	0	41	0	157	246	0	0	0	187	121	777	2,933	0	2	0	0
9:00 AM	0	0	0	0	0	29	0	40	3	123	230	0	0	0	156	119	700	2,791	0	1	0	0
9:15 AM	0	0	0	0	0	22	0	42	0	159	231	0	0	0	168	128	750		0	3	0	0
9:30 AM	0	0	0	0	0	36	0	41	1	143	218	0	0	0	150	117	706		0	0	0	0
9:45 AM	0	0	0	0	0	43	0	45	2	107	186	0	0	0	151	101	635		0	0	0	0

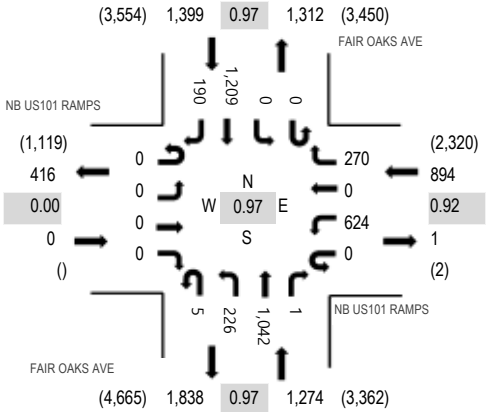
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	1	0	3	1	0	0	0	1	2	9
Lights	0	0	0	0	0	221	4	175	2	523	810	0	0	0	734	513	2,982
Mediums	0	0	0	0	0	7	0	5	0	9	11	0	0	0	12	7	51
Total	0	0	0	0	0	229	4	181	2	535	822	0	0	0	747	522	3,042

All Traffic Data Services Inc.
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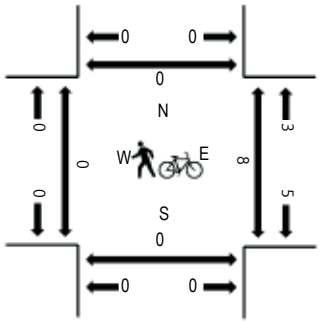
Location: 10 FAIR OAKS AVE & NB US101 RAMPS PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	NB US101 RAMPS Eastbound				NB US101 RAMPS Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	103	0	44	0	56	167	0	0	0	168	24	562	2,695	0	0	0	0
4:15 PM	0	0	0	0	0	96	1	48	0	48	215	0	0	0	169	21	598	2,996	0	1	0	0
4:30 PM	0	0	0	0	0	113	1	49	0	48	234	0	0	0	258	35	738	3,319	0	0	0	0
4:45 PM	0	0	0	0	0	143	0	48	0	49	228	0	0	1	295	33	797	3,472	0	1	0	0
5:00 PM	0	0	0	0	0	154	0	62	0	54	232	0	0	0	323	38	863	3,549	0	3	0	0
5:15 PM	0	0	0	0	0	172	0	66	0	68	262	0	0	0	307	46	921	3,567	0	0	0	0
5:30 PM	0	0	0	0	0	157	0	53	0	45	273	0	0	0	329	34	891	3,410	0	3	0	0
5:45 PM	0	0	0	0	0	161	0	85	1	55	259	1	0	0	271	41	874	3,207	0	2	0	0
6:00 PM	0	0	0	0	0	134	0	66	4	58	248	0	0	0	302	69	881	2,992	0	3	0	0
6:15 PM	0	0	0	0	0	124	0	73	2	44	232	0	0	0	246	43	764		0	0	0	0
6:30 PM	0	0	0	0	0	108	0	75	2	54	169	0	0	0	231	49	688		0	0	0	0
6:45 PM	0	0	0	0	0	109	0	75	0	67	187	0	0	0	183	38	659		0	0	0	0

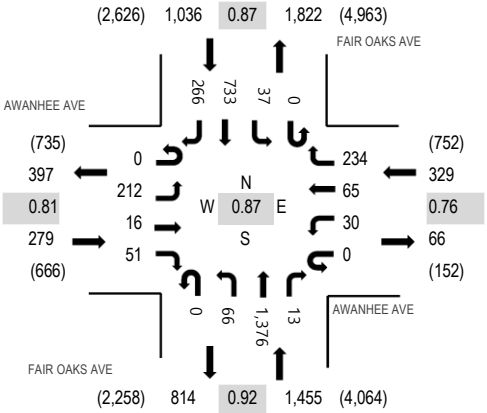
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	4
Lights	0	0	0	0	0	621	0	266	5	223	1,032	1	0	0	1,199	187	3,534
Mediums	0	0	0	0	0	3	0	4	0	1	10	0	0	0	9	2	29
Total	0	0	0	0	0	624	0	270	5	226	1,042	1	0	0	1,209	190	3,567

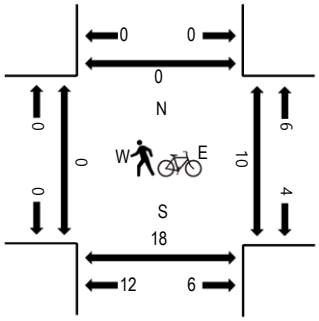
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 11 FAIR OAKS AVE & AWANHEE AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	AWANHEE AVE Eastbound				AWANHEE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	23	0	21	0	5	1	31	0	6	160	2	0	4	132	24	409	2,550	0	0	3	0
7:15 AM	0	34	2	12	0	10	7	30	0	8	208	3	0	8	155	35	512	2,928	0	0	2	0
7:30 AM	0	77	10	12	0	11	14	53	0	14	238	2	0	7	231	69	738	3,090	0	1	7	0
7:45 AM	0	67	9	18	0	8	37	69	0	25	332	5	0	16	204	101	891	3,099	0	1	7	0
8:00 AM	0	64	4	10	0	9	13	65	0	16	360	2	0	11	173	60	787	2,975	0	3	2	0
8:15 AM	0	36	2	12	0	6	10	51	0	13	295	2	0	5	182	60	674	2,880	0	4	2	0
8:30 AM	0	45	1	11	0	7	5	49	0	12	389	4	0	5	174	45	747	2,884	0	2	2	0
8:45 AM	0	38	4	6	0	8	7	62	0	6	442	1	0	9	162	22	767	2,775	0	2	1	0
9:00 AM	0	31	0	8	0	6	11	42	0	14	370	2	0	8	175	25	692	2,583	0	0	1	0
9:15 AM	0	25	2	10	0	1	7	47	0	10	398	1	1	6	156	14	678		0	3	1	0
9:30 AM	0	29	0	5	0	3	4	35	0	6	380	3	0	6	149	18	638		0	1	2	0
9:45 AM	0	30	1	7	0	2	1	25	0	2	332	1	0	4	157	13	575		0	0	1	0

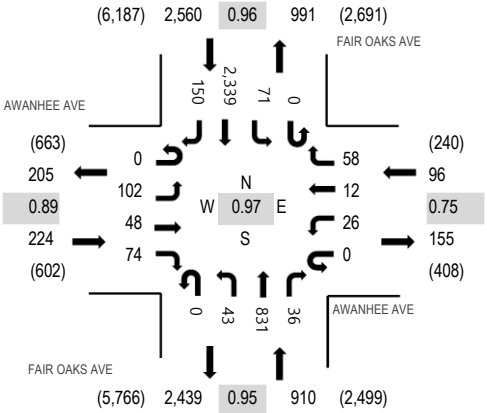
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	9
Lights	0	208	16	50	0	30	65	231	0	65	1,347	11	0	37	708	264	3,032
Mediums	0	4	0	1	0	0	0	3	0	1	22	2	0	0	23	2	58
Total	0	212	16	51	0	30	65	234	0	66	1,376	13	0	37	733	266	3,099

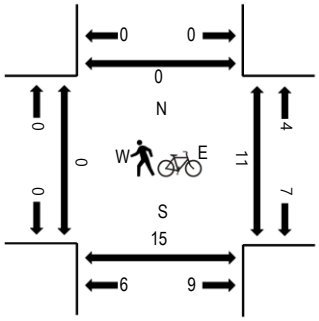
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 11 FAIR OAKS AVE & AWANHEE AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	AWANHEE AVE Eastbound				AWANHEE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	26	4	12	0	6	0	7	0	11	149	7	0	17	303	29	571	2,645	0	1	6	0
4:15 PM	0	24	5	15	0	4	2	9	0	17	180	8	1	11	318	36	630	2,985	0	1	2	0
4:30 PM	0	25	7	23	0	0	10	10	0	11	172	4	1	14	378	33	688	3,327	0	0	2	0
4:45 PM	0	33	5	11	0	3	2	8	0	14	180	4	0	24	411	61	756	3,596	0	6	4	0
5:00 PM	0	26	8	9	0	6	4	11	0	10	202	8	0	20	577	30	911	3,790	0	1	0	0
5:15 PM	0	26	12	29	0	10	2	20	0	11	221	7	0	9	586	39	972	3,735	0	3	4	0
5:30 PM	0	23	15	21	0	5	5	12	0	7	197	7	0	20	608	37	957	3,574	0	5	3	0
5:45 PM	0	27	13	15	0	5	1	15	0	15	211	14	0	22	568	44	950	3,339	0	2	6	0
6:00 PM	0	26	7	25	0	3	3	14	0	14	183	4	0	21	512	44	856	3,093	0	3	2	0
6:15 PM	0	16	11	20	0	3	3	13	0	15	199	11	0	12	465	43	811		0	6	1	0
6:30 PM	0	17	4	21	0	5	2	18	0	11	167	10	0	22	405	40	722		0	1	5	0
6:45 PM	0	22	4	15	0	3	5	11	0	13	189	16	0	21	366	39	704		0	1	3	0

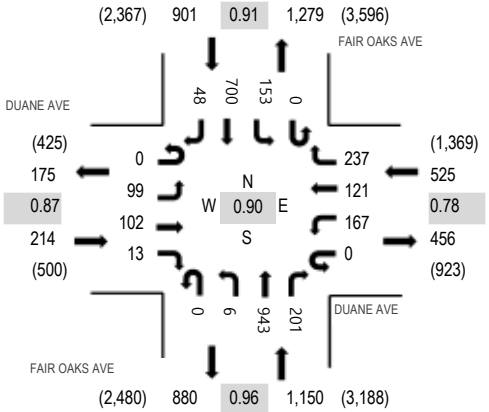
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights	0	101	48	74	0	24	12	58	0	42	794	36	0	68	2,328	149	3,734
Mediums	0	1	0	0	0	2	0	0	0	1	37	0	0	2	11	1	55
Total	0	102	48	74	0	26	12	58	0	43	831	36	0	71	2,339	150	3,790

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

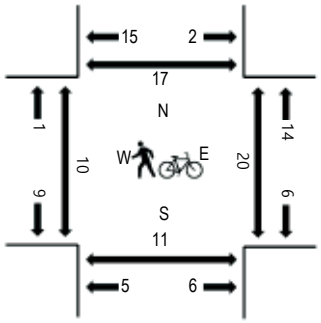
Location: 12 FAIR OAKS AVE & DUANE AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DUANE AVE Eastbound				DUANE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	17	4	2	0	43	8	14	0	1	107	12	0	13	155	4	380	2,256	0	2	0	4
7:15 AM	0	19	15	1	0	35	18	24	0	1	140	24	1	17	154	10	459	2,558	1	3	0	10
7:30 AM	0	32	29	3	0	50	35	47	0	2	173	43	0	48	170	10	642	2,723	2	0	5	7
7:45 AM	0	31	34	2	0	54	41	75	0	1	216	65	0	58	179	19	775	2,790	2	1	1	10
8:00 AM	0	31	31	4	0	33	30	52	0	1	230	43	0	24	192	11	682	2,724	0	4	1	0
8:15 AM	0	10	19	5	0	36	24	51	0	4	211	46	0	36	172	10	624	2,667	4	5	2	1
8:30 AM	0	27	18	2	0	44	26	59	0	0	286	47	0	35	157	8	709	2,699	2	4	5	1
8:45 AM	0	22	17	3	0	53	27	75	0	2	300	24	0	26	148	12	709	2,579	1	1	2	3
9:00 AM	0	20	12	1	0	31	26	42	0	3	264	28	0	19	168	11	625	2,444	2	1	1	5
9:15 AM	0	17	5	7	0	41	19	57	0	2	312	24	0	9	154	9	656		0	2	2	1
9:30 AM	0	21	9	4	0	40	14	51	0	3	263	28	0	18	136	2	589		0	3	1	1
9:45 AM	0	15	6	5	0	41	21	32	0	3	252	27	0	10	155	7	574		0	1	2	3

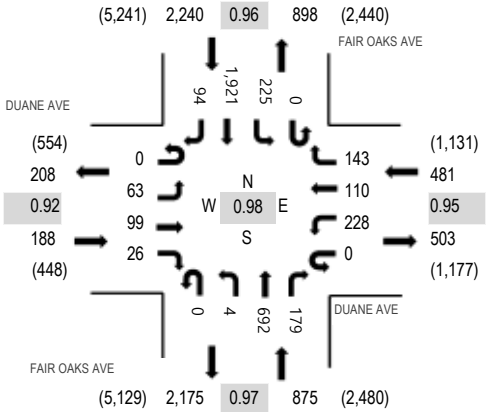
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	4
Lights	0	97	102	12	0	159	119	235	0	6	921	196	0	152	675	45	2,719
Mediums	0	2	0	1	0	8	2	1	0	0	19	5	0	1	25	3	67
Total	0	99	102	13	0	167	121	237	0	6	943	201	0	153	700	48	2,790

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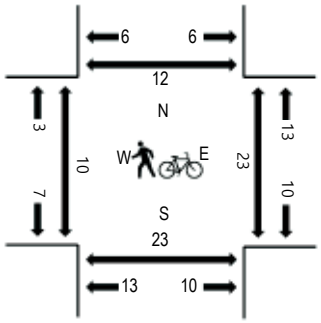
Location: 12 FAIR OAKS AVE & DUANE AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DUANE AVE Eastbound				DUANE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	6	17	3	0	51	22	26	0	2	136	39	0	19	234	21	576	2,576	0	0	2	4
4:15 PM	0	16	15	4	0	42	15	18	0	3	151	39	0	39	254	22	618	2,897	2	1	0	2
4:30 PM	0	10	19	9	0	30	13	30	0	0	144	49	0	43	285	18	650	3,242	0	4	2	4
4:45 PM	0	9	17	4	0	44	13	16	0	6	178	43	0	47	336	19	732	3,553	2	7	6	1
5:00 PM	0	11	25	5	0	58	26	32	0	3	169	42	0	50	455	21	897	3,784	0	4	6	3
5:15 PM	0	16	23	9	0	58	25	43	0	1	178	47	0	54	482	27	963	3,709	3	6	1	3
5:30 PM	0	11	32	5	0	61	25	34	0	0	171	39	0	77	482	24	961	3,529	3	8	3	2
5:45 PM	0	25	19	7	0	51	34	34	0	0	174	51	0	44	502	22	963	3,263	1	5	6	3
6:00 PM	0	12	17	10	0	52	28	29	0	3	169	22	0	27	427	26	822	2,940	3	2	4	5
6:15 PM	0	14	16	6	0	47	17	20	0	4	174	37	0	27	393	28	783		1	5	3	2
6:30 PM	0	11	12	5	0	35	20	12	0	1	171	39	0	18	350	21	695		2	4	1	4
6:45 PM	0	14	10	4	0	35	15	20	0	4	156	35	0	28	294	25	640		4	1	2	8

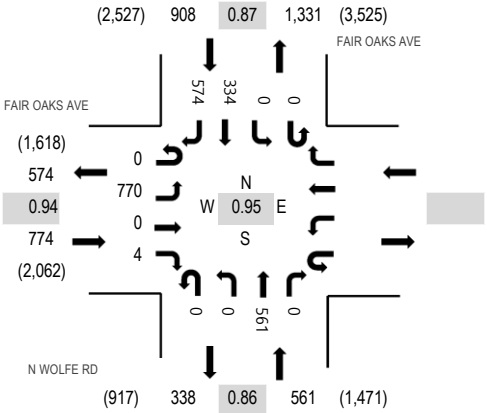
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Lights	0	63	99	26	0	224	110	142	0	4	687	175	0	224	1,907	94	3,755
Mediums	0	0	0	0	0	4	0	0	0	0	4	4	0	1	14	0	27
Total	0	63	99	26	0	228	110	143	0	4	692	179	0	225	1,921	94	3,784

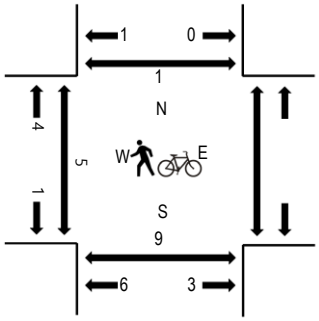
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Location: 13 N WOLFE RD & FAIR OAKS AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FAIR OAKS AVE Eastbound				Westbound				N WOLFE RD Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	82	0	0					0	0	48	0	0	0	38	156	324	1,767	1		0	0
7:15 AM	0	122	0	0					0	0	59	0	0	0	62	124	367	2,002	2		0	0
7:30 AM	0	136	0	0					0	0	135	0	0	0	71	146	488	2,147	1		0	0
7:45 AM	0	206	0	0					0	0	157	0	0	0	77	148	588	2,243	1		1	0
8:00 AM	0	175	0	1					0	0	117	0	0	0	106	160	559	2,207	4		5	1
8:15 AM	0	179	0	1					0	0	115	0	0	0	78	139	512	2,184	0		1	0
8:30 AM	0	210	0	2					0	0	172	0	0	0	73	127	584	2,229	0		0	0
8:45 AM	0	195	0	1					0	0	131	0	0	0	79	146	552	2,145	1		0	0
9:00 AM	0	186	0	1					0	0	136	0	0	0	81	132	536	2,086	0		2	0
9:15 AM	0	202	0	0					0	0	155	0	0	0	91	109	557		0		1	0
9:30 AM	0	186	0	1					0	0	129	0	0	0	72	112	500		1		1	0
9:45 AM	0	175	0	1					0	0	117	0	0	0	81	119	493		0		1	0

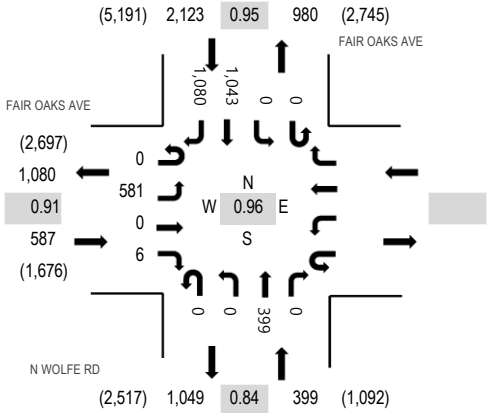
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0					0	0	2	0	0	0	1	0	4
Lights	0	753	0	4					0	0	544	0	0	0	324	554	2,179
Mediums	0	16	0	0					0	0	15	0	0	0	9	20	60
Total	0	770	0	4					0	0	561	0	0	0	334	574	2,243

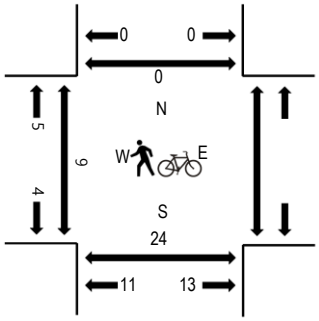
All Traffic Data Services Inc.
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Location: 13 N WOLFE RD & FAIR OAKS AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FAIR OAKS AVE Eastbound				Westbound				N WOLFE RD Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	129	0	2					0	0	73	0	0	0	121	171	496	2,241	0		0	0
4:15 PM	0	127	0	3					1	0	87	0	0	0	134	169	521	2,463	0		0	0
4:30 PM	0	130	0	0					0	0	95	0	0	0	166	183	574	2,728	0		2	0
4:45 PM	0	162	0	2					0	0	86	0	0	0	204	196	650	2,960	0		3	0
5:00 PM	0	127	0	1					0	0	99	0	0	0	266	225	718	3,109	4		5	0
5:15 PM	0	154	0	2					0	0	96	0	0	0	267	267	786	3,109	0		2	0
5:30 PM	0	149	0	1					0	0	119	0	0	0	246	291	806	3,020	3		5	0
5:45 PM	0	151	0	2					0	0	85	0	0	0	264	297	799	2,850	2		7	0
6:00 PM	0	128	0	4					0	0	83	0	0	0	244	259	718	2,609	1		0	0
6:15 PM	0	119	0	1					0	0	110	0	0	0	237	230	697		1		5	0
6:30 PM	0	150	0	4					0	0	78	0	0	0	190	214	636		4		3	0
6:45 PM	0	128	0	0					0	0	80	0	0	0	155	195	558		2		0	0

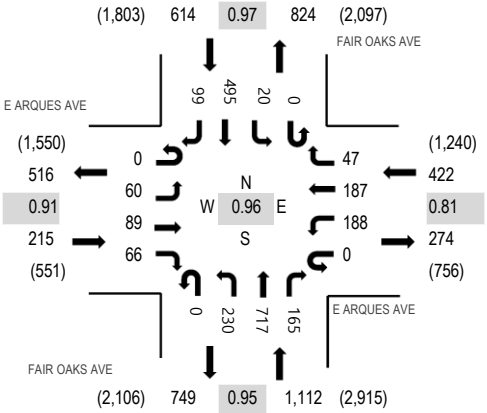
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0
Lights	0	573	0	6					0	0	398	0	0	0	1,041	1,071	3,089
Mediums	0	8	0	0					0	0	1	0	0	0	2	9	20
Total	0	581	0	6					0	0	399	0	0	0	1,043	1,080	3,109

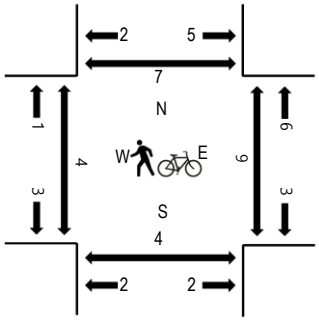
All Traffic Data Services Inc.
(303) 216-2439
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Location: 15 FAIR OAKS AVE & E ARQUES AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E ARQUES AVE Eastbound				E ARQUES AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	3	10	7	0	33	35	8	0	35	63	10	0	5	137	31	377	1,918	1	2	0	2
7:15 AM	0	13	14	8	0	36	33	4	0	50	98	21	0	4	124	26	431	2,058	0	0	0	4
7:30 AM	0	18	15	8	0	46	47	11	0	50	133	24	0	3	124	35	514	2,244	0	0	0	0
7:45 AM	0	20	23	11	0	56	64	23	0	51	151	34	0	3	130	30	596	2,305	1	0	0	2
8:00 AM	0	13	16	4	0	50	54	10	0	45	123	31	0	8	135	28	517	2,288	3	2	3	0
8:15 AM	0	21	22	16	0	40	46	15	0	60	186	44	0	4	138	25	617	2,363	1	4	1	1
8:30 AM	0	13	23	21	0	52	42	10	0	57	184	31	0	2	121	19	575	2,341	0	2	1	1
8:45 AM	0	15	22	13	0	46	45	9	0	51	181	44	0	5	119	29	579	2,328	1	0	1	2
9:00 AM	0	11	22	16	0	50	54	13	0	62	166	46	0	9	117	26	592	2,303	1	2	1	3
9:15 AM	0	5	33	17	0	51	48	17	0	71	185	48	0	7	92	21	595		1	1	0	4
9:30 AM	0	10	26	14	0	42	42	12	0	74	177	52	0	5	86	22	562		3	1	2	4
9:45 AM	0	13	22	13	0	35	46	15	0	72	148	57	0	11	98	24	554		4	2	1	1

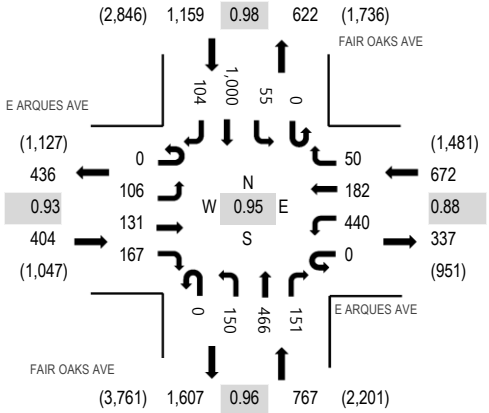
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	59	89	63	0	180	181	46	0	227	705	164	0	19	482	96	2,311
Mediums	0	1	0	3	0	8	6	1	0	3	12	1	0	1	13	3	52
Total	0	60	89	66	0	188	187	47	0	230	717	165	0	20	495	99	2,363

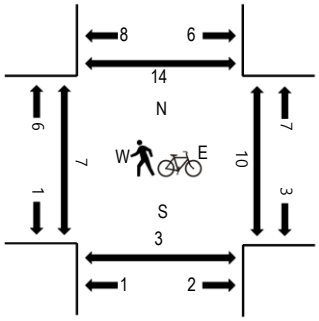
All Traffic Data Services Inc.
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Location: 15 FAIR OAKS AVE & E ARQUES AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E ARQUES AVE Eastbound				E ARQUES AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	15	20	23	0	36	15	11	0	31	108	26	0	14	148	25	472	2,090	2	0	0	0
4:15 PM	0	22	29	24	0	40	28	8	0	34	90	25	0	4	161	13	478	2,263	0	2	0	3
4:30 PM	0	21	23	29	0	55	19	14	0	33	108	35	0	9	185	15	546	2,564	2	0	0	2
4:45 PM	0	28	33	27	0	64	28	12	0	42	115	32	0	8	185	20	594	2,804	1	0	0	2
5:00 PM	0	22	30	37	0	75	52	14	0	38	97	46	0	14	204	16	645	2,950	2	6	2	0
5:15 PM	0	23	30	38	0	124	45	16	0	39	127	41	0	14	253	29	779	3,002	3	0	0	1
5:30 PM	0	23	33	53	0	134	48	9	0	40	135	30	0	14	239	28	786	2,847	2	5	2	4
5:45 PM	0	33	40	32	0	92	49	7	0	44	115	40	0	13	258	17	740	2,662	0	3	0	1
6:00 PM	0	27	28	44	0	90	40	18	0	27	89	40	0	14	250	30	697	2,535	1	2	1	5
6:15 PM	0	24	33	31	0	65	32	10	0	33	110	47	0	14	197	28	624		0	0	1	2
6:30 PM	0	14	26	29	0	70	43	7	0	38	115	38	0	16	185	20	601		0	0	0	1
6:45 PM	0	29	39	35	0	67	36	8	0	36	112	45	0	8	182	16	613		0	0	0	1

Peak Rolling Hour Flow Rates

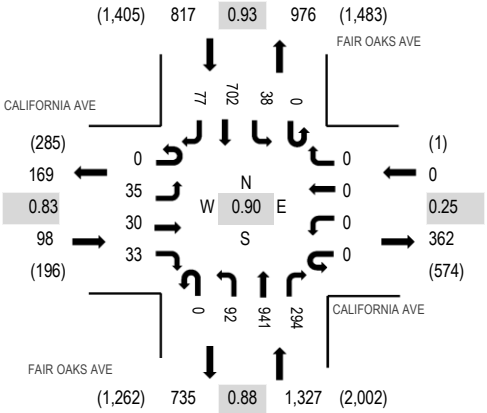
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Lights	0	106	129	167	0	438	182	50	0	150	463	149	0	55	993	104	2,986
Mediums	0	0	2	0	0	1	0	0	0	0	3	2	0	0	7	0	15
Total	0	106	131	167	0	440	182	50	0	150	466	151	0	55	1,000	104	3,002

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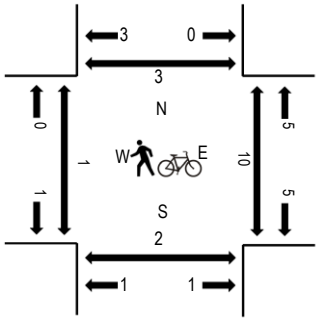
Location: 5 FAIR OAKS AVE & CALIFORNIA AVE AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	4	5	5	0	0	0	0	0	8	112	21	0	4	108	16	283	1,362	0	0	0	0
7:15 AM	0	6	6	7	0	0	0	0	0	8	114	38	0	8	97	18	302	1,594	0	4	0	0
7:30 AM	0	13	11	9	0	0	0	1	0	15	117	38	0	5	141	12	362	1,857	0	4	0	0
7:45 AM	0	7	10	15	0	0	0	0	0	18	133	53	0	13	145	21	415	2,034	0	8	0	1
8:00 AM	0	8	9	5	0	0	0	0	0	31	192	51	0	10	186	23	515	2,242	0	6	0	3
8:15 AM	0	11	3	9	0	0	0	0	0	20	259	62	0	6	178	17	565		0	1	0	0
8:30 AM	0	9	8	10	0	0	0	0	0	26	227	82	0	13	152	12	539		1	2	1	0
8:45 AM	0	7	10	9	0	0	0	0	0	15	263	99	0	9	186	25	623		0	1	1	0

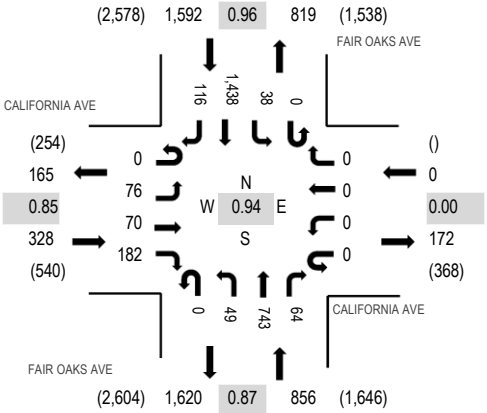
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	6
Lights	0	32	29	30	0	0	0	0	0	91	913	291	0	37	682	75	2,180
Mediums	0	3	1	3	0	0	0	0	0	1	26	3	0	1	16	2	56
Total	0	35	30	33	0	0	0	0	0	92	941	294	0	38	702	77	2,242

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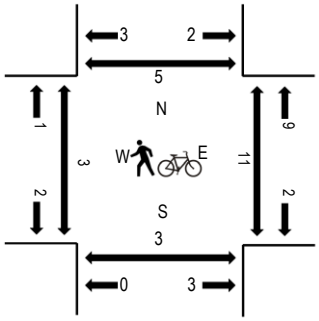
Location: 5 FAIR OAKS AVE & CALIFORNIA AVE PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	16	26	19	0	0	0	0	0	5	174	12	0	13	186	10	461	1,988	0	1	1	0
4:15 PM	0	12	13	20	0	0	0	0	0	7	173	20	0	8	196	12	461	2,158	0	2	0	0
4:30 PM	0	13	10	21	0	0	0	0	0	10	170	42	0	9	193	10	478	2,416	0	1	1	0
4:45 PM	0	14	11	37	0	0	0	0	0	8	147	22	0	10	312	27	588	2,678	0	1	0	1
5:00 PM	0	19	12	34	0	0	0	0	0	9	170	17	0	9	335	26	631	2,776	0	1	1	0
5:15 PM	0	30	20	46	0	0	0	0	0	11	188	11	0	7	379	27	719		0	3	0	3
5:30 PM	0	14	18	63	0	0	0	0	0	14	216	16	0	13	363	23	740		1	1	0	0
5:45 PM	0	13	20	39	0	0	0	0	0	15	169	20	0	9	361	40	686		0	4	0	1

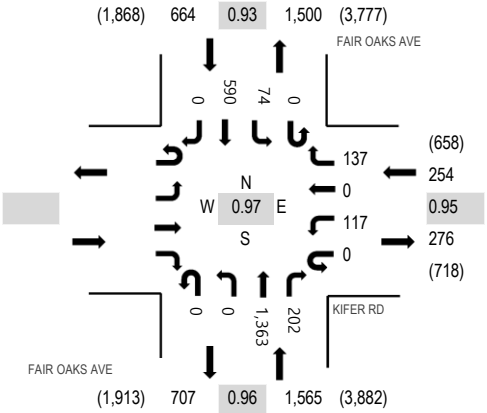
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	76	69	181	0	0	0	0	0	48	734	61	0	38	1,428	115	2,750
Mediums	0	0	1	1	0	0	0	0	0	1	9	3	0	0	10	1	26
Total	0	76	70	182	0	0	0	0	0	49	743	64	0	38	1,438	116	2,776

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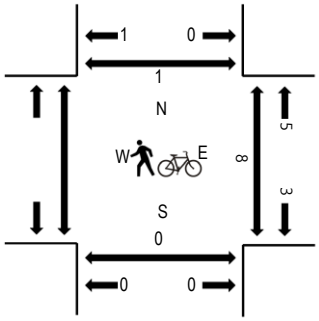
Location: 16 FAIR OAKS AVE & KIFER RD AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM					0	5	0	20	0	0	110	15	1	22	142	0	315	1,648		1	0	0
7:15 AM					0	9	0	22	0	0	189	15	0	18	149	0	402	1,853		0	0	0
7:30 AM					0	13	0	29	0	0	241	20	0	13	130	0	446	2,076		1	0	0
7:45 AM					0	20	0	32	0	0	243	38	0	16	136	0	485	2,241		1	0	0
8:00 AM					0	22	0	46	0	0	234	33	0	23	162	0	520	2,364		0	0	1
8:15 AM					0	27	0	37	0	0	335	54	0	18	154	0	625	2,483		4	0	0
8:30 AM					0	29	0	35	0	0	333	48	0	19	147	0	611	2,453		2	0	1
8:45 AM					0	29	0	41	0	0	329	47	0	20	142	0	608	2,443		1	0	0
9:00 AM					0	32	0	24	0	0	366	53	0	17	147	0	639	2,396		1	0	0
9:15 AM					0	28	0	23	0	0	352	57	0	20	115	0	595			2	0	0
9:30 AM					0	25	0	39	0	0	353	58	0	29	97	0	601			0	0	0
9:45 AM					0	42	0	29	0	0	314	45	0	20	111	0	561			0	0	0

Peak Rolling Hour Flow Rates

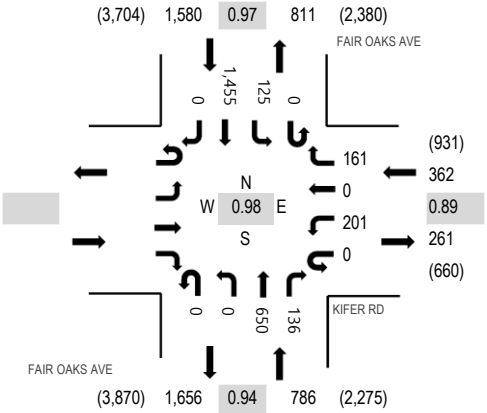
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	1	0	0	0	1	0	0	0	0	2
Lights					0	115	0	130	0	0	1,346	201	0	72	575	0	2,439
Mediums					0	2	0	6	0	0	17	0	0	2	15	0	42
Total					0	117	0	137	0	0	1,363	202	0	74	590	0	2,483

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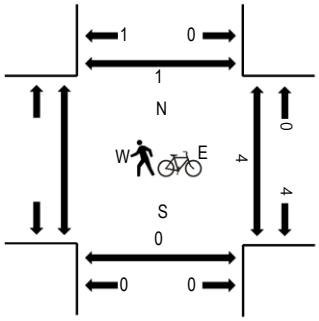
Location: 16 FAIR OAKS AVE & KIFER RD PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				KIFER RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM					0	33	0	28	1	0	151	26	0	24	188	0	451	1,906		0	0	0
4:15 PM					0	34	0	36	0	0	141	26	0	22	184	0	443	2,046		0	0	0
4:30 PM					0	36	0	37	0	0	143	26	0	23	229	0	494	2,271		2	0	0
4:45 PM					0	27	0	41	0	0	140	36	0	24	250	0	518	2,473		1	0	0
5:00 PM					0	35	0	45	0	0	156	26	0	25	304	0	591	2,637		0	0	0
5:15 PM					0	39	0	42	0	0	153	28	0	25	381	0	668	2,728		2	0	0
5:30 PM					0	57	0	45	0	0	169	36	0	35	354	0	696	2,635		0	0	0
5:45 PM					0	55	0	35	0	0	161	36	0	23	372	0	682	2,488		2	0	0
6:00 PM					0	50	0	39	0	0	167	36	0	42	348	0	682	2,367		0	0	0
6:15 PM					0	39	0	31	0	0	171	30	0	23	281	0	575			0	0	1
6:30 PM					0	28	0	35	0	0	185	13	0	25	263	0	549			0	0	0
6:45 PM					0	40	0	44	0	0	185	33	0	17	242	0	561			0	0	0

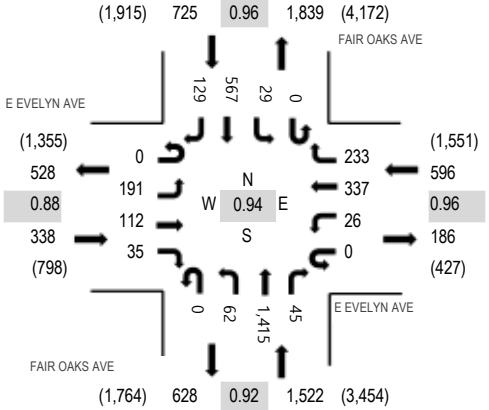
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	0	0	0	0	0	0
Lights					0	201	0	156	0	0	642	135	0	123	1,445	0	2,702
Mediums					0	0	0	5	0	0	8	1	0	2	10	0	26
Total					0	201	0	161	0	0	650	136	0	125	1,455	0	2,728

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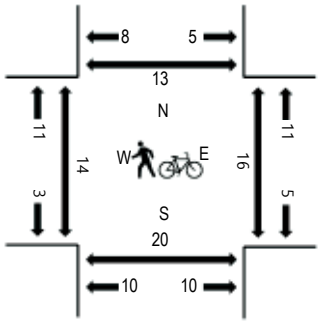
Location: 17 FAIR OAKS AVE & E EVELYN AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E EVELYN AVE Eastbound				E EVELYN AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	15	26	4	0	5	77	16	0	21	101	5	0	4	111	22	407	1,959	0	2	4	3
7:15 AM	0	16	13	9	0	9	38	21	0	8	147	5	0	5	135	19	425	2,225	0	2	3	2
7:30 AM	0	22	13	10	0	12	60	31	0	8	214	6	0	4	117	25	522	2,647	0	2	3	2
7:45 AM	0	36	22	9	0	21	90	30	0	16	225	4	0	3	123	26	605	2,936	3	1	5	6
8:00 AM	0	38	31	21	0	26	99	32	0	11	224	11	0	5	142	33	673	3,120	6	4	3	2
8:15 AM	0	57	37	7	0	6	93	47	0	14	384	14	0	6	147	35	847	3,181	7	7	3	1
8:30 AM	0	53	24	7	0	2	87	61	0	14	368	16	0	7	139	33	811	3,000	2	1	3	3
8:45 AM	0	45	24	12	0	7	86	54	0	17	360	6	0	8	140	30	789	2,831	1	3	1	0
9:00 AM	0	36	27	9	0	11	71	71	0	17	303	9	0	8	141	31	734	2,639	3	4	6	3
9:15 AM	0	38	17	6	0	12	66	58	0	11	312	4	0	2	112	28	666		1	5	2	3
9:30 AM	0	36	17	5	0	11	59	74	0	8	304	7	0	3	100	18	642		0	3	1	0
9:45 AM	0	29	20	7	0	7	48	53	0	10	261	9	0	5	122	26	597		0	5	4	0

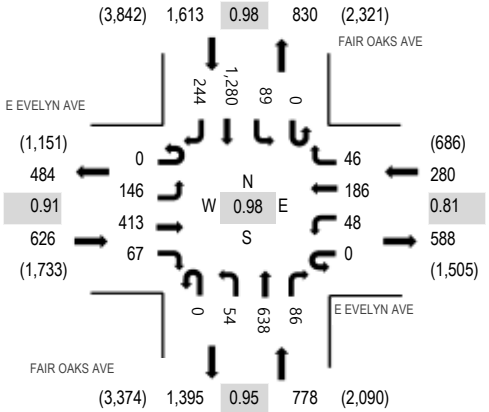
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	0	5
Lights	0	188	109	34	0	26	330	228	0	61	1,405	44	0	28	553	125	3,131
Mediums	0	2	3	0	0	0	6	5	0	0	10	1	0	1	13	4	45
Total	0	191	112	35	0	26	337	233	0	62	1,415	45	0	29	567	129	3,181

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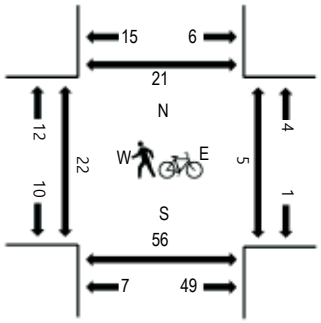
Location: 17 FAIR OAKS AVE & E EVELYN AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E EVELYN AVE Eastbound				E EVELYN AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	49	15	0	5	27	12	0	2	146	9	1	8	180	39	522	2,244	0	0	1	0
4:15 PM	0	25	69	13	0	9	36	9	0	9	123	13	0	14	163	29	512	2,419	0	1	3	0
4:30 PM	0	33	74	16	0	3	23	10	0	7	136	9	0	11	224	41	587	2,717	0	4	1	1
4:45 PM	0	28	94	20	0	4	32	10	0	7	146	8	0	19	217	38	623	2,970	1	3	0	2
5:00 PM	0	44	113	25	0	12	34	8	0	16	119	10	0	24	244	48	697	3,191	0	2	3	2
5:15 PM	0	35	98	11	0	8	50	9	0	9	163	20	0	18	333	56	810	3,297	1	1	5	2
5:30 PM	0	47	109	22	0	18	30	18	0	15	152	20	0	25	324	60	840	3,278	8	2	3	3
5:45 PM	0	33	103	20	0	17	57	12	0	16	155	21	0	22	313	75	844	3,097	3	2	5	5
6:00 PM	0	31	103	14	0	5	49	7	0	14	168	25	0	24	310	53	803	2,916	10	0	11	4
6:15 PM	0	39	100	18	0	10	48	8	0	12	166	22	0	20	281	67	791		2	3	11	4
6:30 PM	0	30	115	24	0	7	23	12	0	4	147	13	0	7	241	36	659		2	4	9	1
6:45 PM	0	40	77	17	0	12	37	15	0	6	155	27	0	12	219	46	663		1	0	10	0

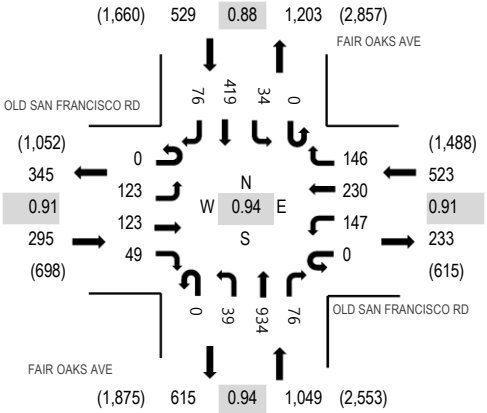
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	144	410	67	0	48	184	46	0	54	633	85	0	87	1,276	244	3,278
Mediums	0	2	3	0	0	0	2	0	0	0	5	1	0	2	3	0	18
Total	0	146	413	67	0	48	186	46	0	54	638	86	0	89	1,280	244	3,297

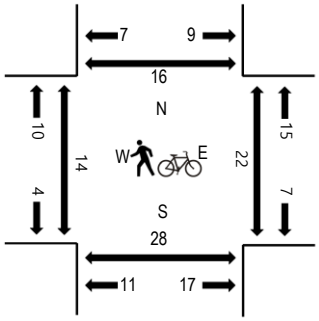
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Location: 19 FAIR OAKS AVE & OLD SAN FRANCISCO RD AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	OLD SAN FRANCISCO RD Eastbound				OLD SAN FRANCISCO RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	6	8	0	10	25	22	0	2	78	11	0	6	127	8	308	1,757	1	3	2	1
7:15 AM	0	14	15	9	0	39	65	22	0	10	111	23	0	7	148	9	472	2,023	1	5	6	0
7:30 AM	0	16	9	6	0	37	50	28	0	10	179	16	0	5	102	16	474	2,133	4	5	9	10
7:45 AM	0	15	19	10	0	46	62	38	0	14	153	13	0	8	109	16	503	2,220	6	4	10	10
8:00 AM	0	16	21	18	0	35	83	34	0	30	167	23	0	12	120	15	574	2,291	36	22	14	29
8:15 AM	0	36	28	19	0	12	78	29	0	22	171	20	0	17	124	26	582	2,356	10	11	15	15
8:30 AM	0	21	29	15	0	32	60	44	0	6	205	25	0	9	93	22	561	2,373	0	32	7	29
8:45 AM	0	33	24	12	0	44	66	25	0	10	207	17	0	9	95	32	574	2,396	2	7	9	3
9:00 AM	0	31	29	11	0	40	56	43	0	10	244	15	0	11	134	15	639	2,351	3	6	7	4
9:15 AM	0	31	36	7	0	38	56	42	0	10	236	21	0	5	107	10	599		4	5	5	3
9:30 AM	0	28	34	19	0	25	52	36	0	9	247	23	0	9	83	19	584		4	4	6	3
9:45 AM	0	29	30	9	0	30	49	35	0	10	186	19	0	11	102	19	529		2	2	6	0

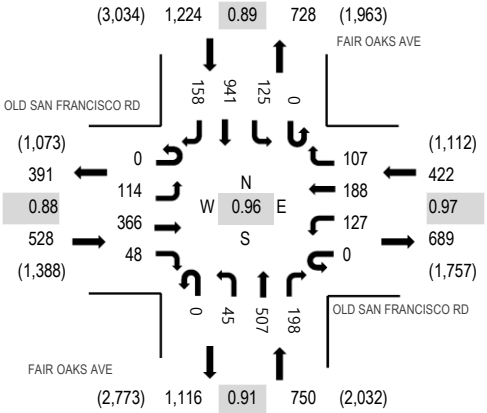
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Lights	0	123	121	41	0	142	229	139	0	35	926	75	0	30	414	76	2,351
Mediums	0	0	2	7	0	5	1	7	0	4	7	1	0	4	5	0	43
Total	0	123	123	49	0	147	230	146	0	39	934	76	0	34	419	76	2,396

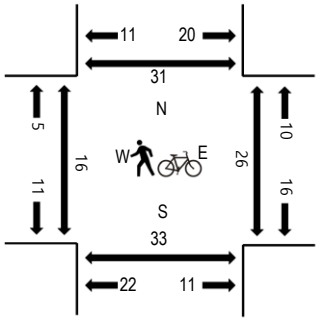
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Location: 19 FAIR OAKS AVE & OLD SAN FRANCISCO RD PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	OLD SAN FRANCISCO RD Eastbound				OLD SAN FRANCISCO RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	67	7	0	32	53	13	0	5	113	27	0	17	142	26	531	2,175	1	3	7	3
4:15 PM	0	19	69	11	0	24	39	18	0	16	106	28	0	14	144	24	512	2,264	1	5	4	2
4:30 PM	0	20	84	13	0	26	34	7	0	9	126	26	0	22	155	30	552	2,454	0	8	4	2
4:45 PM	0	26	77	12	0	21	47	22	0	9	103	44	0	26	166	27	580	2,664	3	0	2	4
5:00 PM	0	25	76	14	0	25	44	12	0	12	131	36	0	31	176	38	620	2,842	4	1	6	8
5:15 PM	0	29	111	10	0	24	56	25	0	9	119	49	0	32	204	34	702	2,924	3	9	6	11
5:30 PM	0	37	90	12	0	36	47	26	0	6	124	42	0	37	261	44	762	2,901	5	7	13	8
5:45 PM	0	28	79	15	0	33	48	27	0	12	131	66	0	30	248	41	758	2,746	5	4	4	3
6:00 PM	0	20	86	11	0	34	37	29	0	18	133	41	0	26	228	39	702	2,549	1	5	7	5
6:15 PM	0	28	90	11	0	36	40	17	0	8	134	46	0	38	192	39	679		7	4	9	4
6:30 PM	0	13	66	10	0	36	55	13	0	8	102	37	0	29	201	37	607		2	4	8	2
6:45 PM	0	24	59	10	0	21	39	16	0	8	118	30	0	29	172	35	561		4	2	10	8

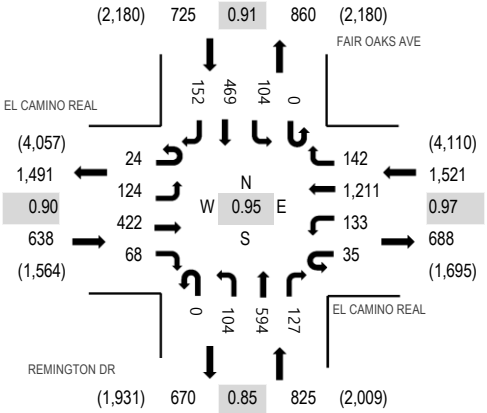
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	113	364	45	0	126	188	104	0	42	505	197	0	122	939	158	2,903
Mediums	0	1	2	3	0	1	0	3	0	3	2	1	0	3	2	0	21
Total	0	114	366	48	0	127	188	107	0	45	507	198	0	125	941	158	2,924

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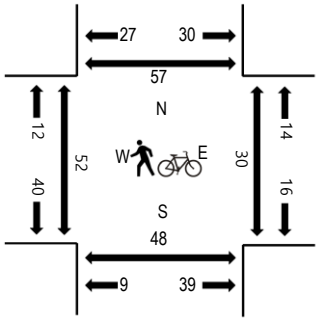
Location: 20 REMINGTON DR & EL CAMINO REAL AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 09:15 AM - 09:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				REMINGTON DR Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	2	25	41	11	2	7	167	19	0	10	54	10	0	23	112	30	513	2,688	2	8	4	1
7:15 AM	0	14	60	8	7	14	207	35	0	9	76	22	0	22	173	22	669	3,041	2	7	1	7
7:30 AM	1	17	70	5	3	21	215	22	0	7	139	19	0	22	118	38	697	3,315	5	5	2	9
7:45 AM	4	19	64	8	6	15	336	26	0	8	118	18	0	20	131	36	809	3,480	3	5	2	4
8:00 AM	9	24	73	11	1	41	303	30	0	17	124	23	0	34	148	28	866	3,605	7	7	5	9
8:15 AM	2	35	98	24	6	23	334	35	0	17	182	21	0	19	101	46	943	3,648	6	8	2	5
8:30 AM	5	26	80	20	7	22	343	32	0	21	124	22	0	35	99	26	862	3,679	6	5	4	4
8:45 AM	4	32	80	16	3	36	298	37	0	31	187	25	0	23	129	33	934	3,709	26	8	32	7
9:00 AM	5	23	112	23	8	34	287	33	0	28	143	28	0	26	122	37	909	3,570	9	6	6	17
9:15 AM	6	33	104	12	12	32	310	36	0	26	146	47	0	28	133	49	974		8	6	6	8
9:30 AM	9	36	126	17	12	31	316	36	0	19	118	27	0	27	85	33	892		9	8	4	21
9:45 AM	8	30	113	19	10	31	238	31	0	30	83	30	0	26	99	47	795		11	10	3	9

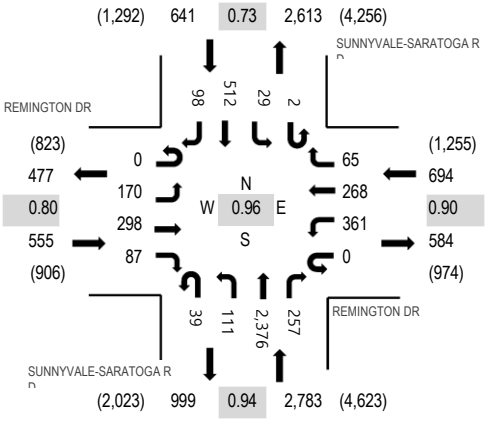
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	1	1	2	0	0	0	4	0	0	0	0	0	0	1	0	0	9
Lights	23	122	403	67	35	128	1,172	141	0	101	585	123	0	101	460	149	3,610
Mediums	0	1	17	1	0	5	35	1	0	3	9	4	0	2	9	3	90
Total	24	124	422	68	35	133	1,211	142	0	104	594	127	0	104	469	152	3,709

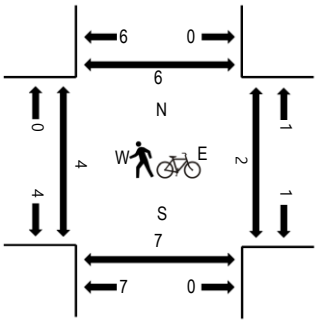
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Location: 22 SUNNYVALE-SARATOGA RD & REMINGTON DR AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	REMINGTON DR Eastbound				REMINGTON DR Westbound				SUNNYVALE-SARATOGA RD Northbound				SUNNYVALE-SARATOGA RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	16	18	0	76	18	8	13	10	248	36	0	8	119	11	590	3,403	1	2	17	0
7:15 AM	0	21	30	29	0	106	38	8	8	24	304	60	0	5	206	20	859	3,990	1	5	15	1
7:30 AM	0	53	53	23	0	90	58	9	6	25	430	68	0	10	134	7	966	4,342	0	2	1	4
7:45 AM	0	28	54	17	0	75	69	6	5	39	518	46	1	4	99	27	988	4,523	0	2	0	3
8:00 AM	0	47	85	25	0	85	96	11	9	46	558	54	0	7	105	49	1,177	4,673	0	0	3	4
8:15 AM	0	51	102	22	0	102	71	17	8	26	592	60	1	7	135	17	1,211		0	0	1	1
8:30 AM	0	42	56	20	0	74	43	15	9	14	645	72	1	6	133	17	1,147		0	0	0	1
8:45 AM	0	30	55	20	0	100	58	22	13	25	581	71	0	9	139	15	1,138		3	2	3	0

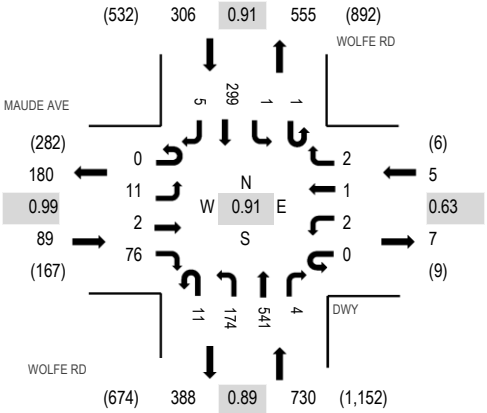
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	4
Lights	0	170	291	85	0	350	263	64	39	109	2,353	247	2	29	500	94	4,596
Mediums	0	0	7	2	0	10	5	1	0	1	22	10	0	0	11	4	73
Total	0	170	298	87	0	361	268	65	39	111	2,376	257	2	29	512	98	4,673

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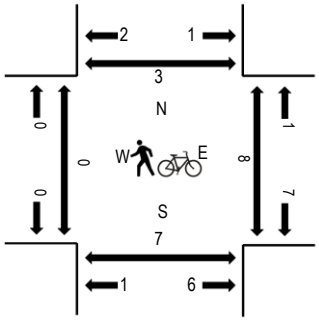
Location: 3 WOLFE RD & DWY AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MAUDE AVE Eastbound				DWY Westbound				WOLFE RD Northbound				WOLFE RD Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	0	15	0	0	0	1	2	16	56	0	1	0	48	0	142	727	0	1	1	0
7:15 AM	0	3	0	9	0	0	0	0	1	14	70	0	0	0	59	0	156	826	0	0	0	0
7:30 AM	0	6	0	18	0	0	0	0	0	35	102	1	1	1	56	0	220	979	3	1	5	0
7:45 AM	1	3	0	20	0	0	0	0	1	33	91	0	0	0	57	3	209	1,055	0	3	1	2
8:00 AM	0	4	1	19	0	1	0	0	2	30	107	0	0	0	72	5	241	1,130	0	1	0	1
8:15 AM	0	6	1	16	0	0	0	2	2	55	147	2	1	0	77	0	309		0	3	1	2
8:30 AM	0	0	0	24	0	0	1	0	2	47	138	0	0	0	84	0	296		0	1	2	0
8:45 AM	0	1	0	17	0	1	0	0	5	42	149	2	0	1	66	0	284		0	2	0	0

Peak Rolling Hour Flow Rates

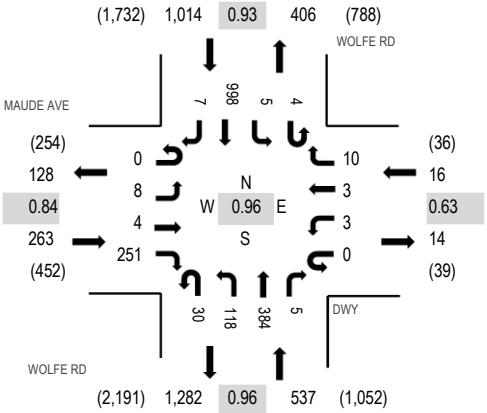
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights	0	11	2	70	0	2	1	2	11	171	525	4	1	1	294	5	1,100
Mediums	0	0	0	6	0	0	0	0	0	3	15	0	0	0	5	0	29
Total	0	11	2	76	0	2	1	2	11	174	541	4	1	1	299	5	1,130

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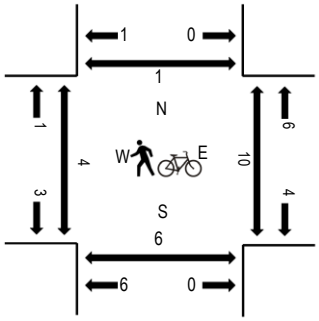
Location: 3 WOLFE RD & DWY PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MAUDE AVE Eastbound				DWY Westbound				WOLFE RD Northbound				WOLFE RD Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	1	37	0	0	2	2	7	32	101	3	1	1	126	3	316	1,471	2	1	0	0
4:15 PM	0	1	1	56	0	1	0	2	3	19	91	3	2	0	144	2	325	1,616	2	0	1	2
4:30 PM	0	2	2	40	0	1	1	3	4	32	101	2	0	3	181	0	372	1,768	4	1	0	8
4:45 PM	0	5	0	73	0	1	1	2	11	23	103	3	3	1	231	1	458	1,830	1	0	2	1
5:00 PM	0	2	1	55	0	1	1	4	6	35	106	0	0	2	247	1	461	1,801	0	4	0	0
5:15 PM	0	0	3	57	0	0	1	2	7	34	94	1	1	2	271	4	477		1	4	3	0
5:30 PM	0	1	0	66	0	1	0	2	6	26	81	1	0	0	249	1	434		2	1	0	0
5:45 PM	0	1	3	45	0	3	3	2	10	31	72	4	1	2	251	1	429		2	7	6	0

Peak Rolling Hour Flow Rates

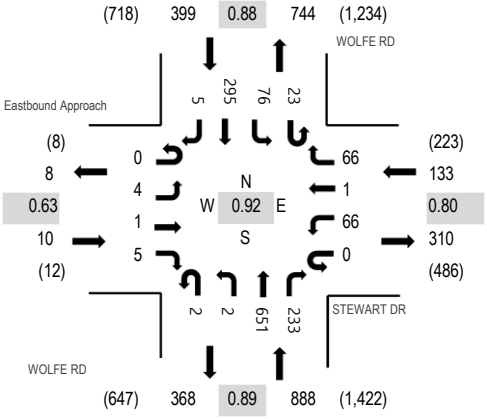
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	8	4	249	0	3	3	10	30	117	381	5	4	5	993	7	1,819
Mediums	0	0	0	1	0	0	0	0	0	1	3	0	0	0	5	0	10
Total	0	8	4	251	0	3	3	10	30	118	384	5	4	5	998	7	1,830

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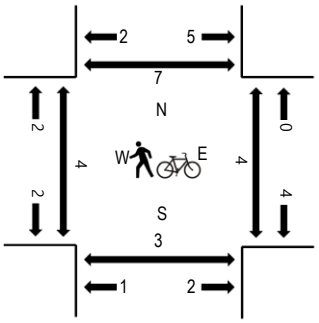
Location: 5 WOLFE RD & STEWART DR AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound Approach Eastbound				STEWART DR Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	0	0	0	11	0	7	1	0	65	20	0	12	45	0	162	945	1	0	0	0
7:15 AM	0	1	0	0	0	7	0	11	0	0	100	18	2	13	63	0	215	1,110	1	0	0	1
7:30 AM	0	0	0	0	0	8	0	14	0	0	117	36	5	20	68	0	268	1,219	0	3	0	1
7:45 AM	0	0	0	0	0	13	0	19	0	0	140	37	8	20	63	0	300	1,341	0	0	0	0
8:00 AM	0	1	0	0	0	14	0	13	1	0	145	50	6	19	78	0	327	1,430	1	3	1	1
8:15 AM	0	1	1	2	0	15	1	19	1	1	154	41	3	17	67	1	324		3	0	0	3
8:30 AM	0	2	0	2	0	26	0	17	0	1	185	63	9	14	68	3	390		0	1	1	2
8:45 AM	0	0	0	1	0	11	0	17	0	0	167	79	5	26	82	1	389		0	0	1	1

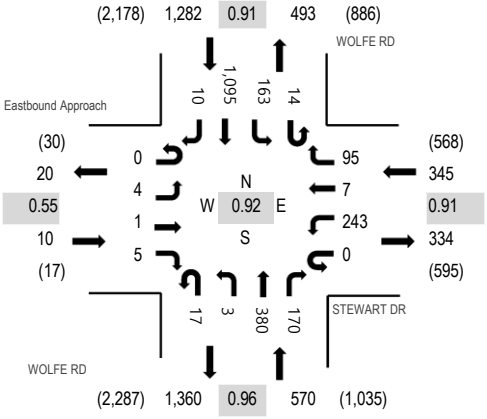
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	4
Lights	0	4	1	5	0	63	1	65	2	2	639	227	23	73	288	4	1,397
Mediums	0	0	0	0	0	2	0	0	0	0	11	6	0	3	6	1	29
Total	0	4	1	5	0	66	1	66	2	2	651	233	23	76	295	5	1,430

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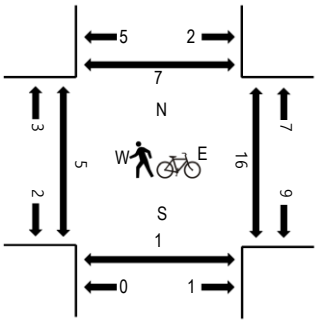
Location: 5 WOLFE RD & STEWART DR PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound Approach Eastbound				STEWART DR Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	33	1	18	3	0	76	36	4	36	141	1	349	1,591	1	5	0	3
4:15 PM	0	0	0	1	0	29	0	18	3	1	66	32	5	25	171	0	351	1,775	2	1	1	1
4:30 PM	0	0	0	1	0	42	1	16	5	1	96	32	6	25	196	0	421	1,975	0	2	0	0
4:45 PM	0	1	3	1	0	46	2	17	2	1	67	44	3	28	253	2	470	2,080	0	3	0	0
5:00 PM	0	0	0	0	0	53	2	20	4	0	99	45	3	32	274	1	533	2,207	4	4	0	4
5:15 PM	0	1	1	1	0	61	2	19	5	0	93	33	4	40	288	3	551		1	5	0	1
5:30 PM	0	0	0	3	0	67	2	26	3	2	83	56	2	32	249	1	526		0	4	0	0
5:45 PM	0	3	0	1	0	62	1	30	5	1	105	36	5	59	284	5	597		0	2	0	1

Peak Rolling Hour Flow Rates

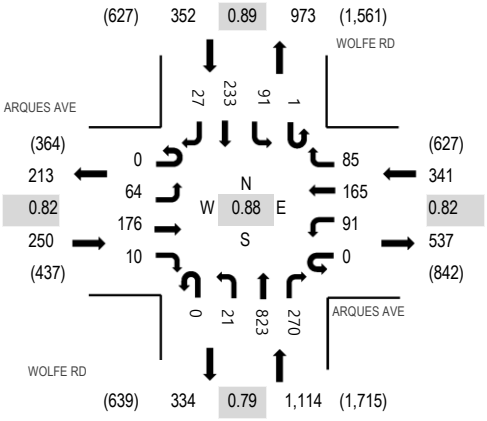
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	4	1	5	0	243	7	95	17	3	375	170	14	162	1,093	10	2,199
Mediums	0	0	0	0	0	0	0	0	0	0	5	0	0	1	2	0	8
Total	0	4	1	5	0	243	7	95	17	3	380	170	14	163	1,095	10	2,207

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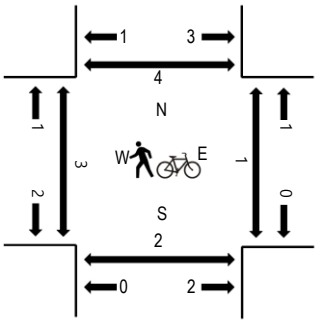
Location: 45 WOLFE RD & ARQUES AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	13	25	0	0	22	30	18	1	3	64	22	0	8	45	1	252	1,349	0	0	0	0
7:15 AM	0	8	25	3	0	17	10	14	0	2	82	20	0	12	46	2	241	1,533	1	0	0	1
7:30 AM	0	21	34	1	0	15	33	21	0	1	133	29	1	16	50	5	360	1,751	0	0	0	1
7:45 AM	0	11	41	5	0	32	54	20	0	3	182	59	0	14	68	7	496	1,974	1	0	0	2
8:00 AM	0	12	33	3	0	19	45	18	0	10	147	52	1	19	71	6	436	2,057	1	0	0	1
8:15 AM	0	17	44	3	0	20	43	26	0	2	169	66	0	22	44	3	459		1	0	0	0
8:30 AM	0	17	42	3	0	23	33	13	0	3	277	72	0	25	65	10	583		1	0	0	2
8:45 AM	0	18	57	1	0	29	44	28	0	6	230	80	0	25	53	8	579		0	0	0	1

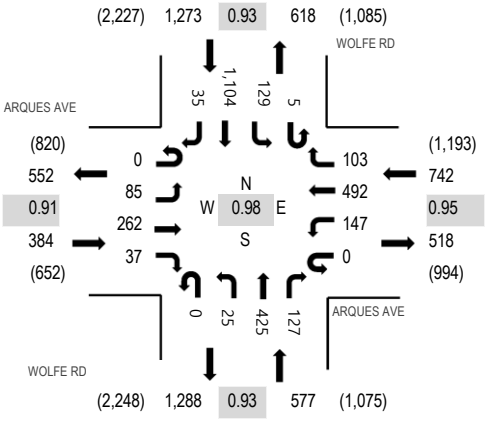
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	2	0	3	0	0	2	1	0	1	0	0	9
Lights	0	64	174	9	0	83	156	79	0	20	806	263	1	85	227	26	1,993
Mediums	0	0	2	1	0	6	9	3	0	1	15	6	0	5	6	1	55
Total	0	64	176	10	0	91	165	85	0	21	823	270	1	91	233	27	2,057

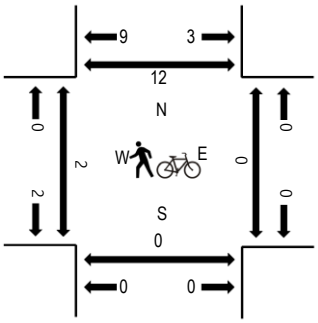
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Location: 45 WOLFE RD & ARQUES AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	16	42	4	0	40	37	16	0	3	79	42	1	28	141	4	453	2,171	0	0	1	2
4:15 PM	0	13	51	5	0	30	52	19	0	4	93	43	2	31	170	4	517	2,457	2	0	0	3
4:30 PM	0	19	52	2	0	39	66	21	1	7	74	42	1	28	175	12	539	2,686	0	0	0	3
4:45 PM	0	17	41	6	0	40	74	17	0	1	77	32	2	44	307	4	662	2,880	0	0	0	1
5:00 PM	0	20	75	10	0	31	131	19	0	2	107	37	0	44	258	5	739	2,976	0	0	0	1
5:15 PM	0	20	65	6	0	45	127	24	0	6	93	25	2	26	291	16	746		1	0	0	6
5:30 PM	0	16	56	11	0	30	112	27	0	6	119	30	3	27	289	7	733		0	0	0	2
5:45 PM	0	29	66	10	0	41	122	33	0	11	106	35	0	32	266	7	758		1	0	0	3

Peak Rolling Hour Flow Rates

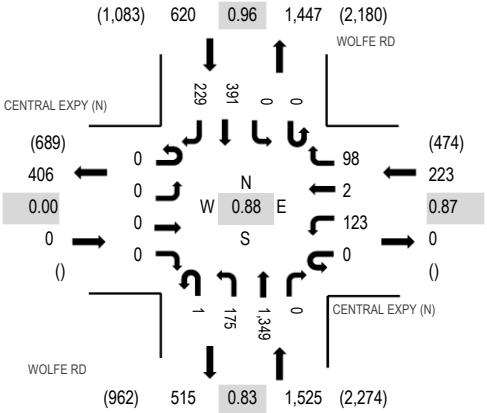
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights	0	83	256	36	0	146	485	103	0	25	403	124	5	129	1,102	34	2,931
Mediums	0	2	6	1	0	1	7	0	0	0	21	3	0	0	2	1	44
Total	0	85	262	37	0	147	492	103	0	25	425	127	5	129	1,104	35	2,976

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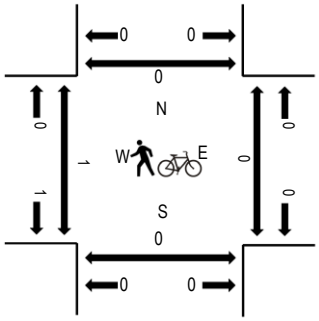
Location: 7 WOLFE RD & CENTRAL EXPY (N) AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (N) Eastbound				CENTRAL EXPY (N) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	34	0	28	0	17	104	0	0	0	55	32	270	1,463	2	0	0	0
7:15 AM	0	0	0	0	0	40	0	24	0	25	148	0	0	0	64	49	350	1,731	0	0	0	0
7:30 AM	0	0	0	0	0	27	0	26	0	42	177	0	0	0	86	40	398	1,908	0	0	0	0
7:45 AM	0	0	0	0	0	52	0	20	0	30	206	0	0	0	89	48	445	2,186	1	0	0	0
8:00 AM	0	0	0	0	0	31	1	26	0	36	285	0	0	0	99	60	538	2,368	0	0	0	0
8:15 AM	0	0	0	0	0	32	1	24	0	43	286	0	0	0	93	48	527		0	0	0	0
8:30 AM	0	0	0	0	0	32	0	24	1	43	415	0	0	0	98	63	676		0	0	0	0
8:45 AM	0	0	0	0	0	28	0	24	0	53	363	0	0	0	101	58	627		1	0	0	0

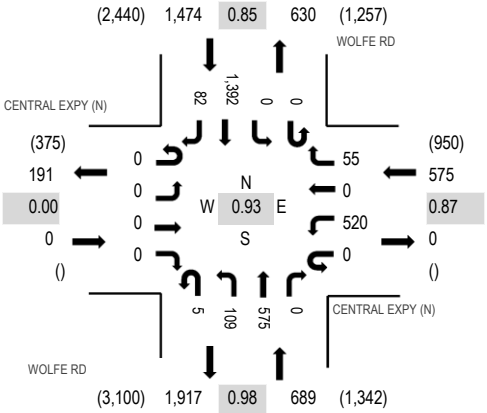
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
Lights	0	0	0	0	0	118	2	97	1	172	1,324	0	0	0	371	227	2,312
Mediums	0	0	0	0	0	4	0	1	0	3	24	0	0	0	20	2	54
Total	0	0	0	0	0	123	2	98	1	175	1,349	0	0	0	391	229	2,368

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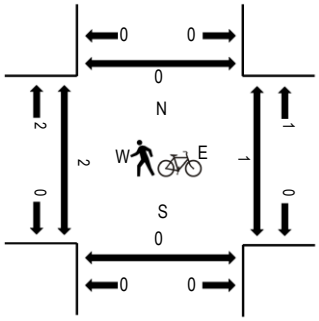
Location: 7 WOLFE RD & CENTRAL EXPY (N) PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (N) Eastbound				CENTRAL EXPY (N) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	67	0	7	0	18	155	0	0	0	138	27	412	1,994	0	1	0	2
4:15 PM	0	0	0	0	0	66	0	14	0	16	128	0	0	0	217	20	461	2,268	2	1	0	0
4:30 PM	0	0	0	0	0	83	0	14	0	23	174	0	0	0	207	30	531	2,452	1	0	0	0
4:45 PM	0	0	0	0	0	108	0	16	0	20	119	0	0	0	297	30	590	2,661	0	0	0	0
5:00 PM	0	0	0	0	0	125	0	16	1	24	142	0	0	0	358	20	686	2,738	2	0	0	0
5:15 PM	0	0	0	0	0	148	0	17	3	26	144	0	0	0	287	20	645		0	0	0	0
5:30 PM	0	0	0	0	0	123	0	9	1	26	149	0	0	0	408	24	740		0	0	0	0
5:45 PM	0	0	0	0	0	124	0	13	0	33	140	0	0	0	339	18	667		0	0	0	0

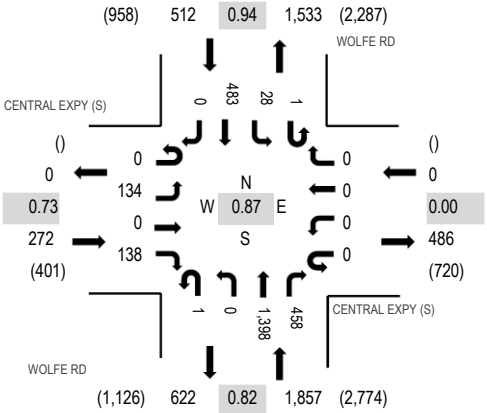
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	0	520	0	55	5	109	557	0	0	0	1,384	81	2,711
Mediums	0	0	0	0	0	0	0	0	0	0	18	0	0	0	8	1	27
Total	0	0	0	0	0	520	0	55	5	109	575	0	0	0	1,392	82	2,738

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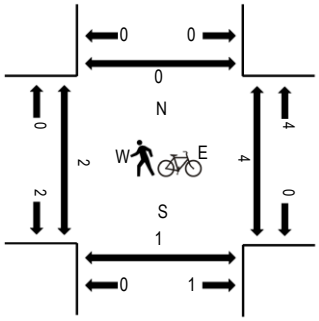
Location: 8 WOLFE RD & CENTRAL EXPY (S) AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (S) Eastbound				CENTRAL EXPY (S) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	0	13	0	0	0	0	0	0	113	33	1	7	81	0	257	1,492	0	0	0	0
7:15 AM	0	5	0	22	0	0	0	0	0	0	169	47	0	4	100	0	347	1,804	1	0	0	0
7:30 AM	0	13	0	19	0	0	0	0	0	0	208	60	0	3	110	0	413	2,045	0	0	0	0
7:45 AM	0	24	0	24	0	0	0	0	0	0	212	75	0	5	135	0	475	2,387	1	0	0	0
8:00 AM	0	24	0	36	0	0	0	0	1	0	299	79	1	5	124	0	569	2,641	0	0	0	0
8:15 AM	0	34	0	24	0	0	0	0	0	0	296	109	0	10	115	0	588		1	1	1	0
8:30 AM	0	31	0	30	0	0	0	0	0	0	430	135	0	5	124	0	755		0	1	0	0
8:45 AM	0	45	0	48	0	0	0	0	0	0	373	135	0	8	120	0	729		0	1	0	0

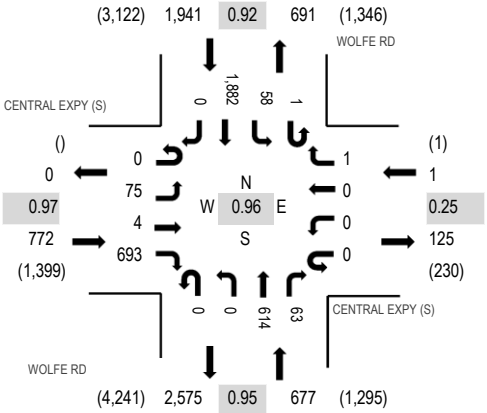
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	5
Lights	0	131	0	135	0	0	0	0	1	0	1,382	452	1	28	460	0	2,590
Mediums	0	3	0	3	0	0	0	0	0	0	14	4	0	0	22	0	46
Total	0	134	0	138	0	0	0	0	1	0	1,398	458	1	28	483	0	2,641

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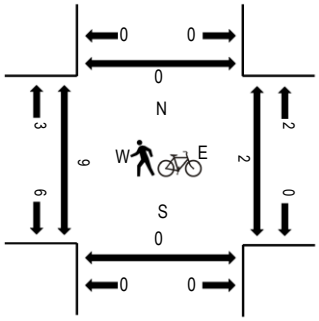
Location: 8 WOLFE RD & CENTRAL EXPY (S) PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (S) Eastbound				CENTRAL EXPY (S) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	33	0	89	0	0	0	0	0	0	140	19	0	6	198	0	485	2,426	0	0	0	0
4:15 PM	0	17	0	144	0	0	0	0	0	0	128	12	0	18	265	0	584	2,780	1	0	0	0
4:30 PM	0	27	0	148	0	0	0	0	0	0	170	15	0	12	277	0	649	3,024	1	0	0	0
4:45 PM	0	18	1	150	0	0	0	0	0	0	122	12	0	10	395	0	708	3,258	4	0	0	0
5:00 PM	0	18	0	177	0	0	0	1	0	0	149	11	0	23	460	0	839	3,391	3	0	0	0
5:15 PM	0	18	2	177	0	0	0	0	0	0	155	9	0	5	462	0	828		3	0	0	0
5:30 PM	0	19	1	160	0	0	0	0	0	0	156	19	0	14	514	0	883		3	0	0	0
5:45 PM	0	20	1	179	0	0	0	0	0	0	154	24	1	16	446	0	841		0	0	0	0

Peak Rolling Hour Flow Rates

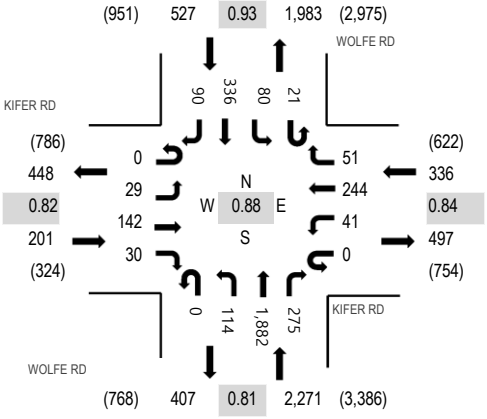
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	75	4	691	0	0	0	1	0	0	606	63	1	58	1,876	0	3,375
Mediums	0	0	0	2	0	0	0	0	0	0	8	0	0	0	6	0	16
Total	0	75	4	693	0	0	0	1	0	0	614	63	1	58	1,882	0	3,391

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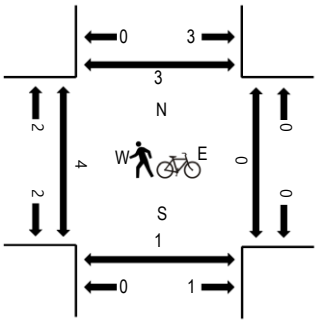
Location: 46 WOLFE RD & KIFER RD AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	16	3	0	14	42	17	1	12	127	24	4	7	55	27	351	1,948	0	0	0	0
7:15 AM	0	3	11	5	0	9	39	8	0	14	187	30	2	8	76	16	408	2,280	0	0	0	0
7:30 AM	0	3	25	7	0	8	49	19	0	26	253	38	2	8	70	22	530	2,654	2	0	0	0
7:45 AM	0	9	30	9	0	13	56	12	0	8	343	52	1	8	91	27	659	3,072	0	0	3	0
8:00 AM	0	3	21	6	0	12	68	10	0	22	345	55	6	21	96	18	683	3,335	0	0	0	0
8:15 AM	0	10	37	10	0	13	74	18	0	25	411	55	8	21	78	22	782		2	0	0	1
8:30 AM	0	8	37	8	0	6	46	10	0	29	596	79	3	14	84	28	948		1	0	1	0
8:45 AM	0	8	47	6	0	10	56	13	0	38	530	86	4	24	78	22	922		1	0	0	2

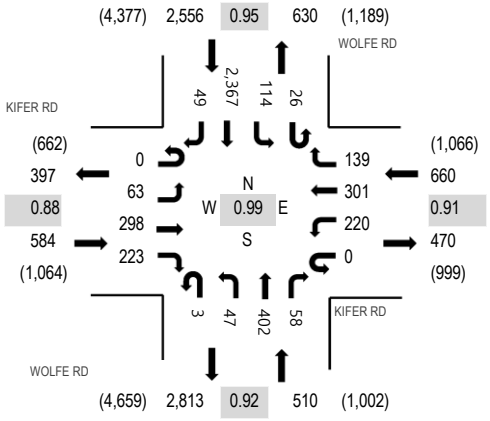
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	4
Lights	0	24	139	28	0	39	237	49	0	113	1,873	274	20	76	329	89	3,290
Mediums	0	4	2	2	0	2	7	2	0	1	9	1	0	3	7	1	41
Total	0	29	142	30	0	41	244	51	0	114	1,882	275	21	80	336	90	3,335

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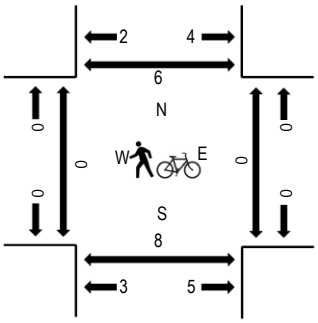
Location: 46 WOLFE RD & KIFER RD PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	19	81	30	0	28	54	14	0	11	107	20	9	36	300	16	725	3,199	1	1	0	1
4:15 PM	0	13	63	30	0	36	32	31	1	13	105	15	7	45	328	13	732	3,509	0	0	0	0
4:30 PM	0	21	80	33	0	46	39	27	0	2	83	13	4	51	386	19	804	3,869	1	0	0	0
4:45 PM	0	4	73	33	0	38	46	15	0	10	96	16	4	36	557	10	938	4,157	2	0	0	0
5:00 PM	0	11	75	41	0	63	85	34	1	14	106	10	6	34	546	9	1,035	4,310	0	0	3	3
5:15 PM	0	14	90	49	0	52	59	42	1	7	87	17	5	25	627	17	1,092		0	0	1	1
5:30 PM	0	19	68	79	0	43	73	35	1	17	112	9	9	20	602	5	1,092		0	0	2	2
5:45 PM	0	19	65	54	0	62	84	28	0	9	97	22	6	35	592	18	1,091		0	0	0	0

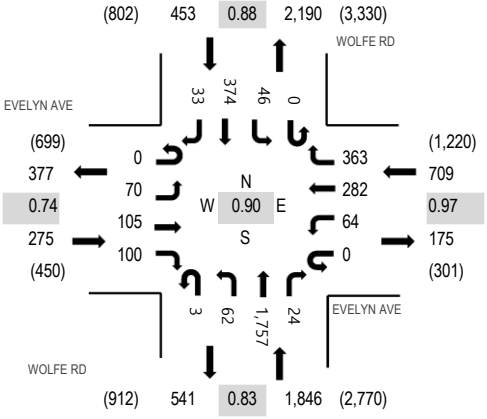
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	61	296	223	0	219	301	137	3	47	400	58	26	110	2,364	49	4,294
Mediums	0	2	1	0	0	1	0	2	0	0	2	0	0	4	3	0	15
Total	0	63	298	223	0	220	301	139	3	47	402	58	26	114	2,367	49	4,310

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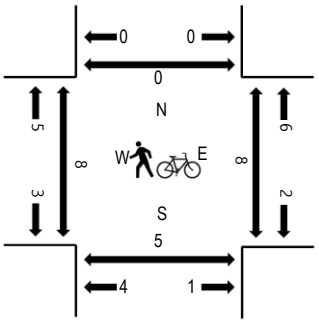
Location: 6 WOLFE RD & EVELYN AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	14	18	8	0	8	38	43	3	11	113	2	0	12	42	10	322	1,959	2	0	0	1
7:15 AM	0	12	14	9	0	10	35	62	0	8	179	4	0	7	69	9	418	2,401	1	0	1	0
7:30 AM	0	10	15	23	0	15	62	62	4	14	268	7	0	13	59	8	560	2,733	1	0	0	0
7:45 AM	0	18	22	12	0	17	86	73	1	21	285	4	1	8	91	20	659	3,028	0	0	0	0
8:00 AM	0	16	17	23	0	18	89	77	2	14	382	5	0	10	101	10	764	3,283	2	1	1	0
8:15 AM	0	22	39	32	0	21	65	98	0	25	347	8	0	10	74	9	750		2	3	3	0
8:30 AM	0	18	29	18	0	15	63	92	0	9	494	7	0	14	89	7	855		3	0	1	0
8:45 AM	0	14	20	27	0	10	65	96	1	14	534	4	0	12	110	7	914		0	0	0	0

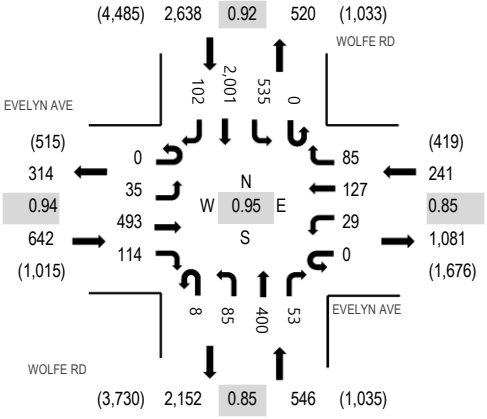
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	0	0	0	0	0	0	0	1	1	0	0	0	2	0	6
Lights	0	66	102	97	0	64	279	360	3	55	1,746	22	0	45	362	29	3,230
Mediums	0	2	3	3	0	0	3	3	0	6	10	2	0	1	10	4	47
Total	0	70	105	100	0	64	282	363	3	62	1,757	24	0	46	374	33	3,283

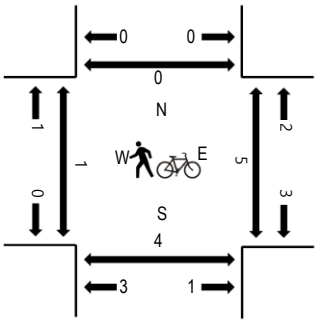
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Location: 6 WOLFE RD & EVELYN AVE PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	9	42	14	0	6	14	14	1	12	106	9	1	39	296	15	578	2,887	0	0	1	0
4:15 PM	0	7	61	21	1	4	20	23	0	7	68	11	0	92	313	11	639	3,267	2	0	1	0
4:30 PM	0	13	62	31	0	13	19	16	0	11	113	10	1	76	374	25	764	3,698	0	0	0	0
4:45 PM	0	13	79	21	0	7	29	12	1	12	117	11	0	102	476	26	906	3,967	0	1	0	0
5:00 PM	0	11	127	30	0	13	32	15	1	16	79	13	0	135	466	20	958	4,067	1	1	2	0
5:15 PM	0	7	110	23	0	5	28	23	3	21	119	18	0	154	535	24	1,070		0	3	1	0
5:30 PM	0	7	131	33	0	5	34	15	0	21	105	10	0	140	506	26	1,033		0	1	0	0
5:45 PM	0	10	125	28	0	6	33	32	4	27	97	12	0	106	494	32	1,006		0	0	1	0

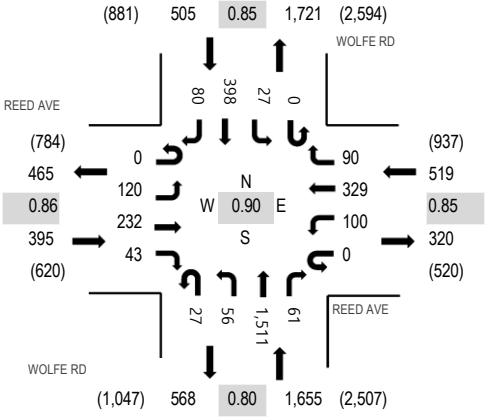
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	34	492	112	0	29	127	84	8	82	396	53	0	534	1,999	102	4,052
Mediums	0	1	1	2	0	0	0	1	0	3	4	0	0	1	2	0	15
Total	0	35	493	114	0	29	127	85	8	85	400	53	0	535	2,001	102	4,067

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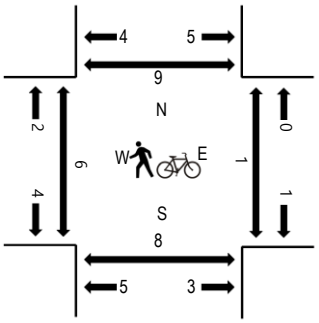
Location: 47 WOLFE RD & REED AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	19	29	8	0	24	35	14	1	5	91	11	0	4	62	13	316	1,871	0	0	0	0
7:15 AM	0	10	35	7	0	34	47	14	2	6	139	26	0	0	82	10	412	2,231	0	0	0	1
7:30 AM	0	9	27	14	0	25	71	20	4	5	221	12	0	4	94	6	512	2,534	2	0	1	1
7:45 AM	0	20	34	13	0	25	92	17	7	7	299	16	0	2	77	22	631	2,880	0	0	0	2
8:00 AM	0	30	52	12	0	22	86	18	6	16	273	12	0	9	114	26	676	3,074	2	1	0	5
8:15 AM	0	33	71	11	0	24	86	18	6	13	326	17	0	8	76	26	715		1	0	2	1
8:30 AM	0	33	68	8	0	27	97	37	9	9	428	22	0	5	98	17	858		2	0	2	1
8:45 AM	0	24	41	12	0	27	60	17	6	18	484	10	0	5	110	11	825		1	0	1	2

Peak Rolling Hour Flow Rates

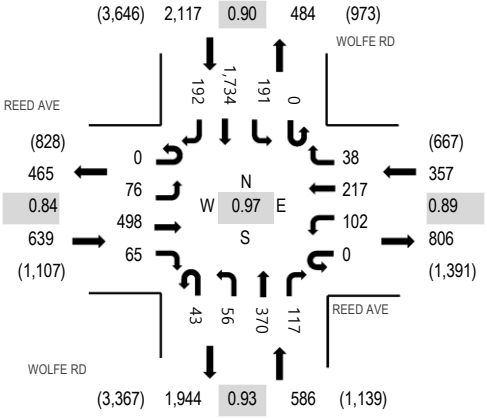
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	118	230	39	0	98	326	88	27	51	1,497	60	0	25	385	77	3,021
Mediums	0	2	2	4	0	2	3	2	0	5	14	1	0	2	13	3	53
Total	0	120	232	43	0	100	329	90	27	56	1,511	61	0	27	398	80	3,074

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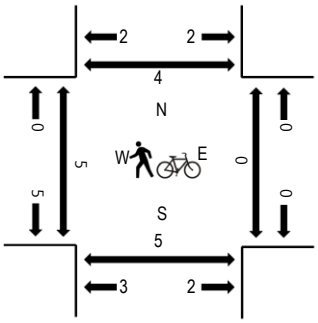
Location: 47 WOLFE RD & REED AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	15	81	12	0	22	53	7	6	10	93	26	0	27	233	25	610	2,860	1	3	8	0
4:15 PM	0	23	80	10	0	20	33	17	6	14	102	21	0	28	296	36	686	3,153	0	6	2	2
4:30 PM	0	21	76	10	0	19	44	8	4	11	84	25	0	29	338	34	703	3,416	0	0	1	0
4:45 PM	0	10	112	18	0	19	61	7	6	15	99	31	3	49	404	27	861	3,660	1	1	3	3
5:00 PM	0	23	115	15	0	26	52	10	9	13	87	28	0	60	434	31	903	3,699	0	0	0	0
5:15 PM	0	22	105	14	0	25	47	8	10	13	85	32	0	47	487	54	949		0	0	2	0
5:30 PM	0	15	156	19	0	21	57	11	9	18	99	31	0	47	416	48	947		0	0	1	3
5:45 PM	0	16	122	17	0	30	61	9	15	12	99	26	0	37	397	59	900		1	0	2	1

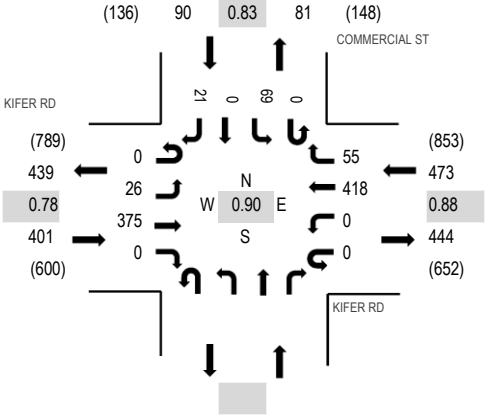
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	75	495	62	0	101	217	36	43	54	367	117	0	189	1,725	192	3,673
Mediums	0	1	3	3	0	1	0	2	0	2	3	0	0	2	9	0	26
Total	0	76	498	65	0	102	217	38	43	56	370	117	0	191	1,734	192	3,699

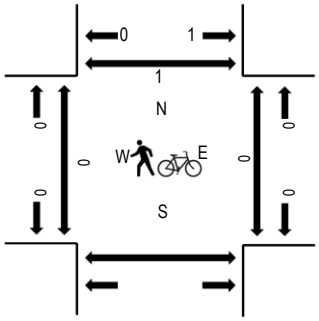
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Location: 9 COMMERCIAL ST & KIFER RD AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				COMMERCIAL ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	28	0	0	0	76	9					0	3	0	3	120	625	0	0		0
7:15 AM	0	4	31	0	0	0	61	13					0	5	0	8	122	707	0	0		0
7:30 AM	0	5	51	0	0	0	97	16					0	10	0	3	182	811	0	0		1
7:45 AM	0	9	70	0	0	0	98	10					0	10	0	4	201	898	0	0		0
8:00 AM	0	6	64	0	0	0	97	13					0	19	0	3	202	964	0	0		0
8:15 AM	0	6	90	0	0	0	98	10					0	19	0	3	226		0	0		0
8:30 AM	0	5	102	0	0	0	122	13					0	20	0	7	269		0	0		1
8:45 AM	0	9	119	0	0	0	101	19					0	11	0	8	267		0	0		0

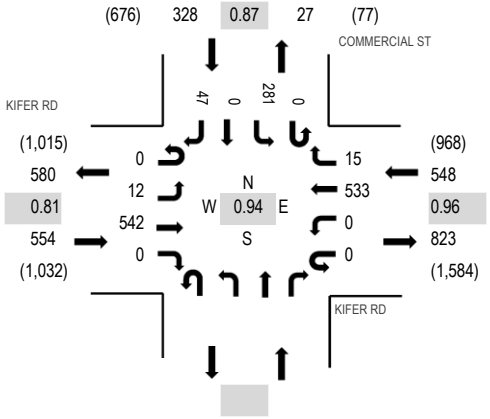
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	1	0					0	0	0	0	3
Lights	0	25	367	0	0	0	399	55					0	68	0	21	935
Mediums	0	1	6	0	0	0	18	0					0	1	0	0	26
Total	0	26	375	0	0	0	418	55					0	69	0	21	964

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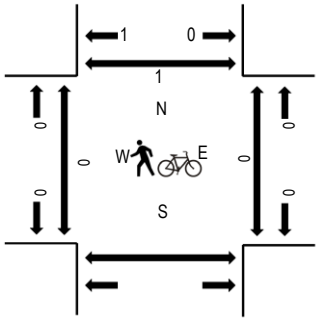
Location: 9 COMMERCIAL ST & KIFER RD PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

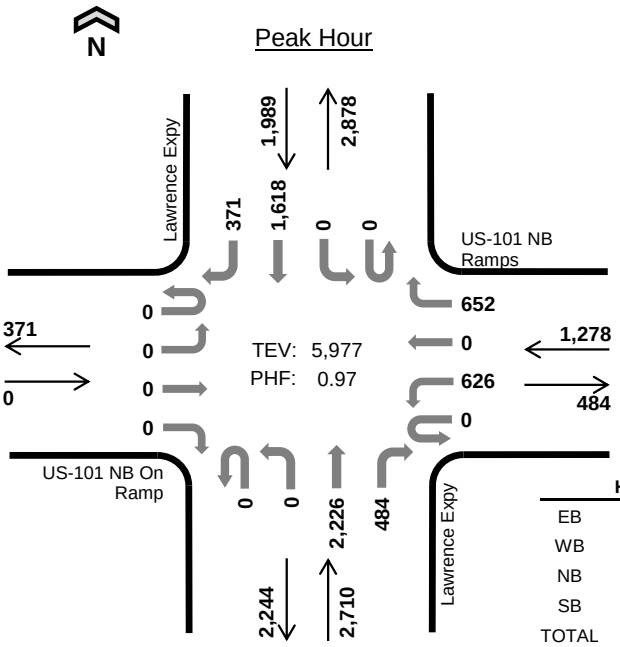
Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				COMMERCIAL ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	3	130	0	0	0	81	3					0	103	0	6	326	1,308	0	0		1
4:15 PM	0	4	112	0	0	0	85	4					0	97	0	11	313	1,361	0	0		0
4:30 PM	0	8	125	0	0	0	96	7					0	66	0	8	310	1,388	0	0		1
4:45 PM	0	1	117	0	0	0	120	4					0	105	0	12	359	1,430	0	0		0
5:00 PM	0	4	167	0	0	0	134	5					0	55	0	14	379	1,368	0	0		0
5:15 PM	0	3	118	0	0	0	146	2					0	64	0	7	340		0	0		0
5:30 PM	0	4	140	0	0	0	133	4					0	57	0	14	352		0	0		0
5:45 PM	0	13	83	0	0	0	136	8					0	45	0	12	297		0	0		0

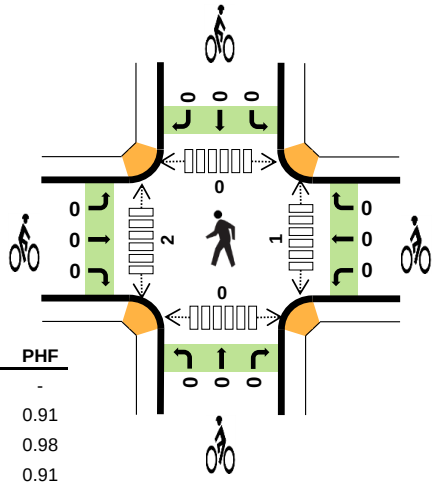
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	11	533	0	0	0	523	15					0	277	0	46	1,405
Mediums	0	1	9	0	0	0	10	0					0	4	0	1	25
Total	0	12	542	0	0	0	533	15					0	281	0	47	1,430

Lawrence Expy
US-101 NB Ramps

Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	-	-
WB	1.6%	0.91
NB	2.1%	0.98
SB	3.7%	0.91
TOTAL	2.5%	0.97

Two-Hour Count Summaries

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	103	0	110	0	0	328	73	0	0	334	87	1,035	0
7:15 AM	0	0	0	0	0	117	0	119	0	0	403	129	0	0	362	123	1,253	0
7:30 AM	0	0	0	0	0	128	0	139	0	0	470	63	0	0	394	137	1,331	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**173**	**0**	**180**	**0**	**0**	**564**	**130**	**0**	**0**	**366**	**124**	**1,537**	5,156
8:00 AM	**0**	**0**	**0**	**0**	**0**	**145**	**0**	**137**	**0**	**0**	**575**	**94**	**0**	**0**	**430**	**114**	**1,495**	5,616
8:15 AM	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**167**	**0**	**0**	**526**	**142**	**0**	**0**	**405**	**69**	**1,464**	5,827
8:30 AM	**0**	**0**	**0**	**0**	**0**	**153**	**0**	**168**	**0**	**0**	**561**	**118**	**0**	**0**	**417**	**64**	**1,481**	**5,977**
8:45 AM	0	0	0	0	0	172	0	136	0	0	526	111	0	0	422	81	1,448	5,888
Count Total	0	0	0	0	0	1,146	0	1,156	0	0	3,953	860	0	0	3,130	799	11,044	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**626**	**0**	**652**	**0**	**0**	**2,226**	**484**	**0**	**0**	**1,618**	**371**	**5,977**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**9**	**0**	**0**	**45**	**12**	**0**	**0**	**71**	**3**	**152**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**2%**	**-**	**1%**	**-**	**-**	**2%**	**2%**	**-**	**-**	**4%**	**1%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	8	11	21	*40*	0	0	0	0	*0*	1	1	0	0	*2*
7:15 AM	0	6	12	16	*34*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	7	11	27	*45*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**0**	**5**	**15**	**16**	***36***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:00 AM	**0**	**3**	**13**	**16**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**6**	**14**	**18**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**0**	**7**	**15**	**24**	***46***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	***2***
8:45 AM	0	10	14	12	*36*	0	0	0	1	*1*	0	0	0	0	*0*
Count Total	0	52	105	150	*307*	0	0	0	1	*1*	2	4	0	0	*6*
Peak Hour	**0**	**21**	**57**	**74**	***152***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**0**	***3***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	4	0	4	0	0	10	1	0	0	21	0	40	0
7:15 AM	0	0	0	0	0	3	0	3	0	0	10	2	0	0	15	1	34	0
7:30 AM	0	0	0	0	0	6	0	1	0	0	9	2	0	0	22	5	45	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**14**	**1**	**0**	**0**	**16**	**0**	**36**	155
8:00 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**9**	**4**	**0**	**0**	**15**	**1**	**32**	147
8:15 AM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**11**	**3**	**0**	**0**	**17**	**1**	**38**	151
8:30 AM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**11**	**4**	**0**	**0**	**23**	**1**	**46**	**152**
8:45 AM	0	0	0	0	0	5	0	5	0	0	12	2	0	0	11	1	36	152
Count Total	0	0	0	0	0	30	0	22	0	0	86	19	0	0	140	10	307	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**9**	**0**	**0**	**45**	**12**	**0**	**0**	**71**	**3**	**152**	**0**

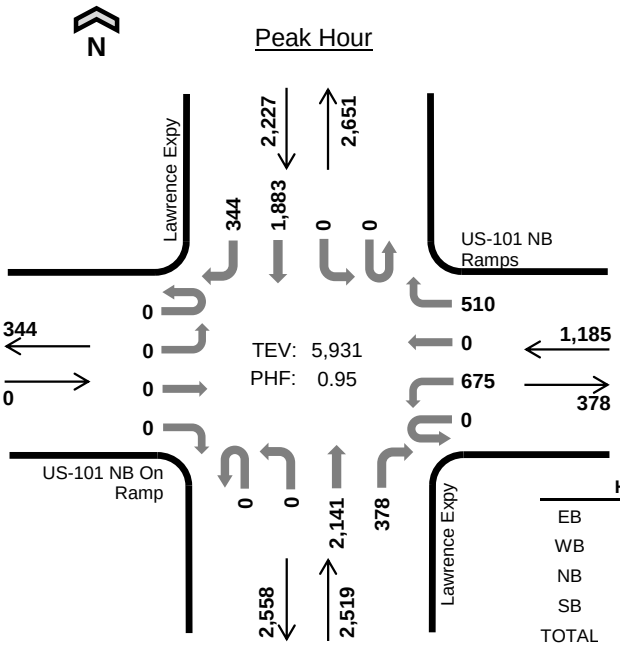
Two-Hour Count Summaries - Bikes

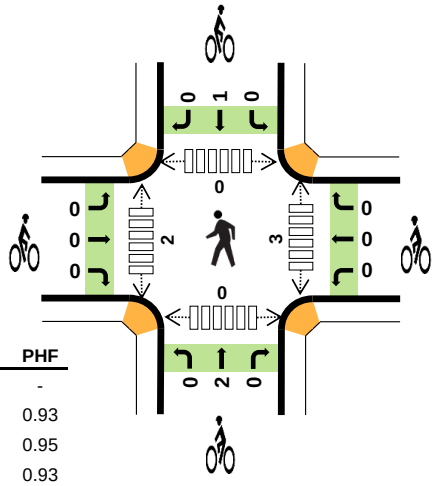
Interval Start	US-101 NB On Ramp			US-101 NB Ramps			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 NB Ramps

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	-	-
WB	1.4%	0.93
NB	1.2%	0.95
SB	0.9%	0.93
TOTAL	1.1%	0.95

Two-Hour Count Summaries

Interval Start	US-101 NB On Ramp Eastbound				US-101 NB Ramps Westbound				Lawrence Expy Northbound				Lawrence Expy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	143	0	97	0	0	333	100	0	0	404	65	1,142	0
4:15 PM	0	0	0	0	0	151	0	82	0	0	423	79	0	0	510	74	1,319	0
4:30 PM	0	0	0	0	0	126	0	119	0	0	453	90	0	0	487	58	1,333	0
4:45 PM	0	0	0	0	0	126	0	96	0	0	502	79	0	0	468	65	1,336	5,130
5:00 PM	**0**	**0**	**0**	**0**	**0**	**171**	**0**	**148**	**0**	**0**	**528**	**102**	**0**	**0**	**490**	**83**	**1,522**	5,510
5:15 PM	**0**	**0**	**0**	**0**	**0**	**173**	**0**	**131**	**0**	**0**	**549**	**112**	**0**	**0**	**510**	**88**	**1,563**	5,754
5:30 PM	**0**	**0**	**0**	**0**	**0**	**154**	**0**	**114**	**0**	**0**	**554**	**70**	**0**	**0**	**465**	**91**	**1,448**	5,869
5:45 PM	**0**	**0**	**0**	**0**	**0**	**177**	**0**	**117**	**0**	**0**	**510**	**94**	**0**	**0**	**418**	**82**	**1,398**	**5,931**
Count Total	0	0	0	0	0	1,221	0	904	0	0	3,852	726	0	0	3,752	606	11,061	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**675**	**0**	**510**	**0**	**0**	**2,141**	**378**	**0**	**0**	**1,883**	**344**	**5,931**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**2**	**0**	**0**	**28**	**3**	**0**	**0**	**17**	**2**	**66**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**2%**	**-**	**0%**	**-**	**-**	**1%**	**1%**	**-**	**-**	**1%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	5	12	9	*26*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	8	12	5	*25*	0	0	0	0	*0*	1	0	0	0	*1*
4:30 PM	0	9	15	1	*25*	0	0	0	0	*0*	2	0	0	0	*2*
4:45 PM	0	5	5	2	*12*	0	0	1	0	*1*	1	0	0	0	*1*
5:00 PM	**0**	**7**	**11**	**6**	***24***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**4**	**15**	**5**	***24***	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**0**	**0**	*1*
5:30 PM	**0**	**2**	**1**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**0**	*3*
5:45 PM	**0**	**3**	**4**	**4**	***11***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	0	43	75	36	*154*	0	0	3	1	*4*	7	2	0	0	*9*
Peak Hour	**0**	**16**	**31**	**19**	***66***	**0**	**0**	**2**	**1**	***3***	**3**	**2**	**0**	**0**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	3	0	2	0	0	9	3	0	0	8	1	26	0
4:15 PM	0	0	0	0	0	7	0	1	0	0	12	0	0	0	3	2	25	0
4:30 PM	0	0	0	0	0	8	0	1	0	0	13	2	0	0	1	0	25	0
4:45 PM	0	0	0	0	0	4	0	1	0	0	4	1	0	0	1	1	12	88
5:00 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**10**	**1**	**0**	**0**	**6**	**0**	**24**	86
5:15 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**5**	**0**	**24**	85
5:30 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**1**	**7**	67
5:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**3**	**1**	**0**	**0**	**3**	**1**	**11**	**66**
Count Total	0	0	0	0	0	36	0	7	0	0	66	9	0	0	30	6	154	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**2**	**0**	**0**	**28**	**3**	**0**	**0**	**17**	**2**	**66**	**0**

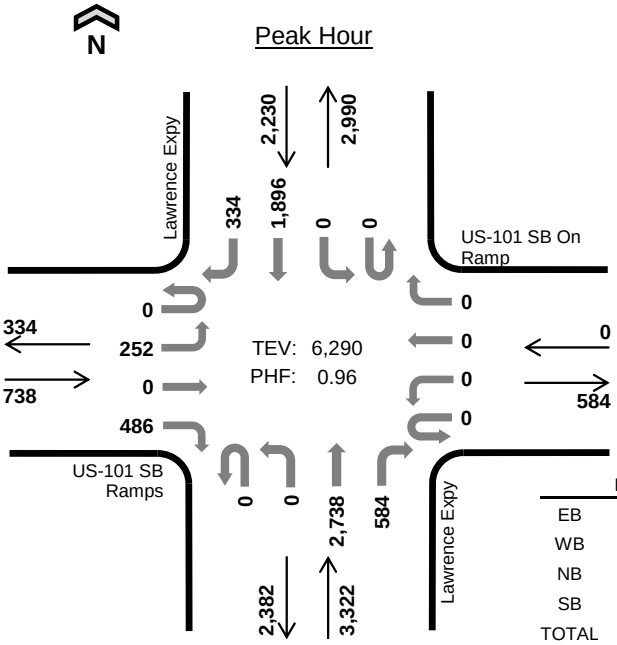
Two-Hour Count Summaries - Bikes

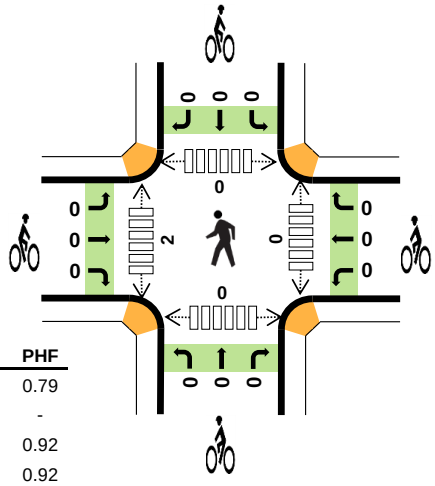
Interval Start	US-101 NB On Ramp			US-101 NB Ramps			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**
Count Total	0	0	0	0	0	0	0	3	0	0	1	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 SB Ramps

Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	1.1%	0.79
WB	-	-
NB	2.1%	0.92
SB	4.1%	0.92
TOTAL	2.7%	0.96

Two-Hour Count Summaries

Interval Start	US-101 SB Ramps (Eastbound)				US-101 SB On Ramp (Westbound)				Lawrence Expy (Northbound)				Lawrence Expy (Southbound)				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	28	0	93	0	0	0	0	0	0	364	69	0	0	355	60	969	0
7:15 AM	0	42	0	109	0	0	0	0	0	0	520	127	0	0	405	71	1,274	0
7:30 AM	0	68	0	103	0	0	0	0	0	0	515	137	0	0	428	97	1,348	0
7:45 AM	**0**	**116**	**0**	**117**	**0**	**0**	**0**	**0**	**0**	**0**	**668**	**127**	**0**	**0**	**448**	**89**	**1,565**	5,156
8:00 AM	**0**	**60**	**0**	**108**	**0**	**0**	**0**	**0**	**0**	**0**	**652**	**139**	**0**	**0**	**518**	**90**	**1,567**	5,754
8:15 AM	**0**	**34**	**0**	**150**	**0**	**0**	**0**	**0**	**0**	**0**	**684**	**150**	**0**	**0**	**427**	**73**	**1,518**	5,998
8:30 AM	**0**	**42**	**0**	**111**	**0**	**0**	**0**	**0**	**0**	**0**	**734**	**168**	**0**	**0**	**503**	**82**	**1,640**	**6,290**
8:45 AM	0	57	0	130	0	0	0	0	0	0	601	146	0	0	501	78	1,513	6,238
Count Total	0	447	0	921	0	0	0	0	0	0	4,738	1,063	0	0	3,585	640	11,394	0
Peak Hour All	**0**	**252**	**0**	**486**	**0**	**0**	**0**	**0**	**0**	**0**	**2,738**	**584**	**0**	**0**	**1,896**	**334**	**6,290**	**0**
Peak Hour HV	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**16**	**0**	**0**	**77**	**15**	**169**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**3%**	**-**	**-**	**4%**	**4%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	0	12	25	*41*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	7	0	13	17	*37*	0	0	0	0	*0*	0	1	0	0	*1*
7:30 AM	2	0	15	23	*40*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**4**	**0**	**16**	**24**	***44***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:00 AM	**2**	**0**	**14**	**21**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**0**	**19**	**18**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**1**	**0**	**20**	**29**	***50***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
8:45 AM	4	0	19	29	*52*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	25	0	128	186	*339*	1	0	0	0	*1*	0	4	1	0	*5*
Peak Hour	**8**	**0**	**69**	**92**	***169***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	2	0	0	0	0	0	0	10	2	0	0	24	1	41	0
7:15 AM	0	2	0	5	0	0	0	0	0	0	8	5	0	0	15	2	37	0
7:30 AM	0	0	0	2	0	0	0	0	0	0	11	4	0	0	18	5	40	0
7:45 AM	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**2**	**0**	**0**	**21**	**3**	**44**	162
8:00 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**3**	**0**	**0**	**16**	**5**	**37**	158
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**5**	**0**	**0**	**16**	**2**	**38**	159
8:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**6**	**0**	**0**	**24**	**5**	**50**	**169**
8:45 AM	0	1	0	3	0	0	0	0	0	0	10	9	0	0	23	6	52	177
Count Total	0	5	0	20	0	0	0	0	0	0	92	36	0	0	157	29	339	0
Peak Hour	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**16**	**0**	**0**	**77**	**15**	**169**	**0**

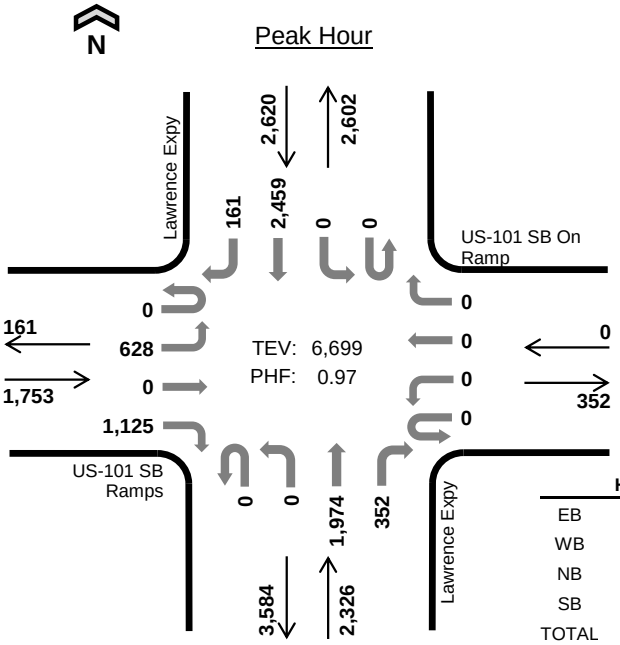
Two-Hour Count Summaries - Bikes

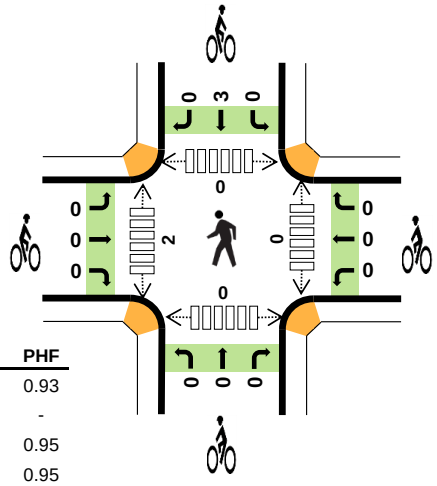
Interval Start	US-101 SB Ramps			US-101 SB On Ramp			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 SB Ramps

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	0.9%	0.93
WB	-	-
NB	1.2%	0.95
SB	1.1%	0.95
TOTAL	1.1%	0.97

Two-Hour Count Summaries

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	178	0	253	0	0	0	0	0	0	330	69	0	0	510	32	1,372	0
4:15 PM	0	109	0	243	0	0	0	0	0	0	418	77	0	0	544	38	1,429	0
4:30 PM	0	158	0	249	0	0	0	0	0	0	405	88	0	0	590	45	1,535	0
4:45 PM	0	132	0	200	0	0	0	0	0	0	442	93	0	0	586	31	1,484	5,820
5:00 PM	**0**	**172**	**0**	**233**	**0**	**0**	**0**	**0**	**0**	**0**	**478**	**89**	**0**	**0**	**640**	**52**	**1,664**	6,112
5:15 PM	**0**	**157**	**0**	**256**	**0**	**0**	**0**	**0**	**0**	**0**	**533**	**80**	**0**	**0**	**606**	**34**	**1,666**	6,349
5:30 PM	**0**	**145**	**0**	**324**	**0**	**0**	**0**	**0**	**0**	**0**	**498**	**94**	**0**	**0**	**617**	**41**	**1,719**	6,533
5:45 PM	**0**	**154**	**0**	**312**	**0**	**0**	**0**	**0**	**0**	**0**	**465**	**89**	**0**	**0**	**596**	**34**	**1,650**	**6,699**
Count Total	0	1,205	0	2,070	0	0	0	0	0	0	3,569	679	0	0	4,689	307	12,519	0
Peak Hour All	**0**	**628**	**0**	**1,125**	**0**	**0**	**0**	**0**	**0**	**0**	**1,974**	**352**	**0**	**0**	**2,459**	**161**	**6,699**	**0**
Peak Hour HV	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**25**	**4**	**73**	**0**
Peak Hour HV%	**-**	**1%**	**-**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0%**	**-**	**-**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	11	10	*24*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	4	0	7	9	*20*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	5	0	9	10	*24*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	3	0	5	6	*14*	0	0	0	0	*0*	0	1	0	0	*1*
5:00 PM	**3**	**0**	**8**	**10**	***21***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**6**	**0**	**12**	**8**	***26***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	*1*
5:30 PM	**3**	**0**	**6**	**6**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**3**	**0**	**3**	**5**	***11***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	30	0	61	64	*155*	0	0	0	3	*3*	0	3	0	0	*3*
Peak Hour	**15**	**0**	**29**	**29**	***73***	**0**	**0**	**0**	**3**	***3***	**0**	**2**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	3	0	0	0	0	0	0	9	2	0	0	7	3	24	0
4:15 PM	0	2	0	2	0	0	0	0	0	0	7	0	0	0	9	0	20	0
4:30 PM	0	3	0	2	0	0	0	0	0	0	9	0	0	0	9	1	24	0
4:45 PM	0	1	0	2	0	0	0	0	0	0	4	1	0	0	6	0	14	82
5:00 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**9**	**1**	**21**	79
5:15 PM	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**7**	**1**	**26**	85
5:30 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**1**	**15**	76
5:45 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**1**	**11**	**73**
Count Total	0	10	0	20	0	0	0	0	0	0	58	3	0	0	56	8	155	0
Peak Hour	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**25**	**4**	**73**	**0**

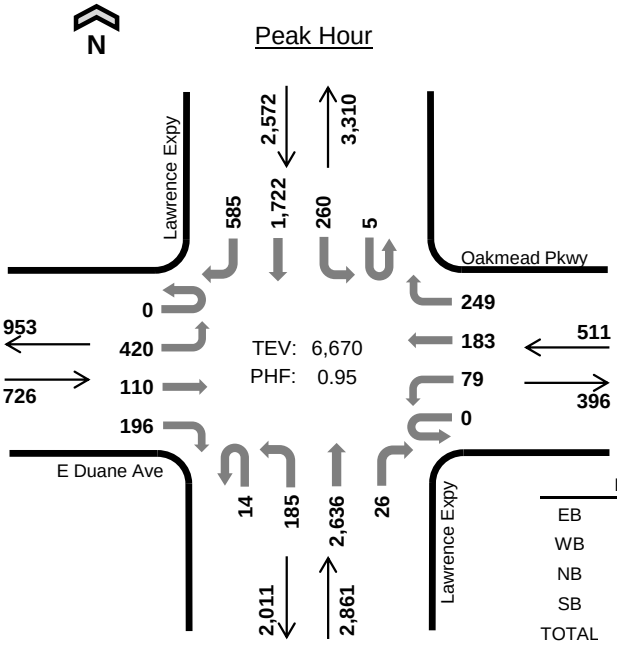
Two-Hour Count Summaries - Bikes

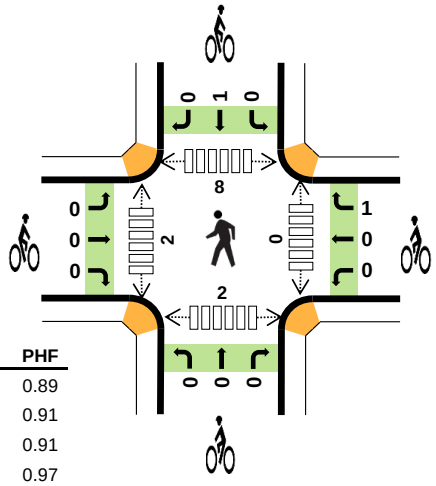
Interval Start	US-101 SB Ramps			US-101 SB On Ramp			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**
Count Total	0	0	0	0	0	0	0	0	0	0	3	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
E Duane Ave

Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	1.4%	0.89
WB	0.8%	0.91
NB	2.4%	0.91
SB	3.3%	0.97
TOTAL	2.5%	0.95

Two-Hour Count Summaries

Interval Start		E Duane Ave Eastbound				Oakmead Pkwy Westbound				Lawrence Expy Northbound				Lawrence Expy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	24	12	10	1	4	11	29	2	27	445	5	1	60	262	82	975	0
7:15 AM		0	49	14	32	0	12	13	40	3	28	544	10	2	44	372	92	1,255	0
7:30 AM		0	64	13	36	0	5	30	43	1	16	594	16	1	41	399	84	1,343	0
7:45 AM		0	79	17	42	0	10	41	38	1	42	703	5	0	51	406	149	1,584	5,157
8:00 AM		**0**	**87**	**18**	**62**	**0**	**15**	**48**	**59**	**5**	**58**	**656**	**6**	**2**	**70**	**418**	**167**	**1,671**	5,853
8:15 AM		**0**	**124**	**34**	**45**	**0**	**16**	**56**	**52**	**3**	**45**	**641**	**3**	**0**	**68**	**368**	**161**	**1,616**	6,214
8:30 AM		**0**	**105**	**26**	**52**	**0**	**19**	**49**	**72**	**2**	**40**	**737**	**9**	**3**	**54**	**449**	**146**	**1,763**	6,634
8:45 AM		**0**	**104**	**32**	**37**	**0**	**29**	**30**	**66**	**4**	**42**	**602**	**8**	**0**	**68**	**487**	**111**	**1,620**	**6,670**
Count Total		0	636	166	316	1	110	278	399	21	298	4,922	62	9	456	3,161	992	11,827	0
Peak Hour	**All**	**0**	**420**	**110**	**196**	**0**	**79**	**183**	**249**	**14**	**185**	**2,636**	**26**	**5**	**260**	**1,722**	**585**	**6,670**	**0**
	HV	**0**	**9**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**0**	**67**	**1**	**0**	**9**	**59**	**18**	**168**	**0**
	HV%	**-**	**2%**	**0%**	**1%**	**-**	**1%**	**0%**	**1%**	**0%**	**0%**	**3%**	**4%**	**0%**	**3%**	**3%**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	2	13	24	*40*	0	0	0	1	*1*	0	1	1	1	*3*
7:15 AM	2	1	12	22	*37*	0	0	1	0	*1*	0	1	3	0	*4*
7:30 AM	3	2	10	23	*38*	0	0	0	0	*0*	0	1	3	2	*6*
7:45 AM	3	2	11	22	*38*	0	0	0	1	*1*	0	1	3	1	*5*
8:00 AM	**3**	**0**	**14**	**18**	***35***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**0**	*3*
8:15 AM	**4**	**0**	**14**	**20**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	*3*
8:30 AM	**0**	**1**	**21**	**19**	***41***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**2**	**0**	*2*
8:45 AM	**3**	**3**	**19**	**29**	***54***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**1**	**2**	***4***
Count Total	19	11	114	177	*321*	0	1	1	3	*5*	0	6	18	6	*30*
Peak Hour	**10**	**4**	**68**	**86**	***168***	**0**	**1**	**0**	**1**	***2***	**0**	**2**	**8**	**2**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Duane Ave				Oakmead Pkwy				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	1	1	0	0	13	0	0	0	21	3	40	0
7:15 AM	0	2	0	0	0	0	0	1	1	0	11	0	0	1	19	2	37	0
7:30 AM	0	1	2	0	0	1	0	1	0	0	10	0	0	1	17	5	38	0
7:45 AM	0	3	0	0	0	0	0	2	0	0	11	0	0	1	18	3	38	153
8:00 AM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**1**	**11**	**6**	**35**	148
8:15 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**4**	**11**	**5**	**38**	149
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**21**	**0**	**0**	**2**	**15**	**2**	**41**	152
8:45 AM	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**18**	**1**	**0**	**2**	**22**	**5**	**54**	**168**
Count Total	0	16	2	1	0	2	1	8	1	0	112	1	0	12	134	31	321	0
Peak Hour	**0**	**9**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**0**	**67**	**1**	**0**	**9**	**59**	**18**	**168**	**0**

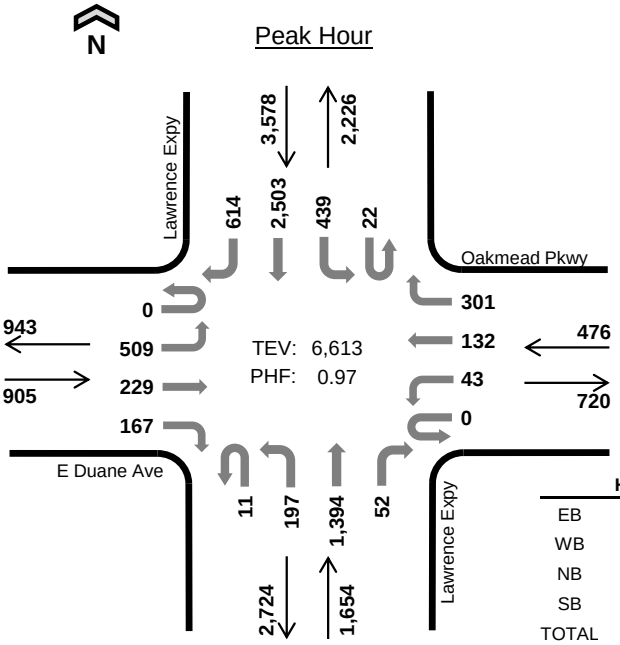
Two-Hour Count Summaries - Bikes

Interval Start	E Duane Ave			Oakmead Pkwy			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**
Count Total	0	0	0	0	0	1	0	1	0	0	3	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

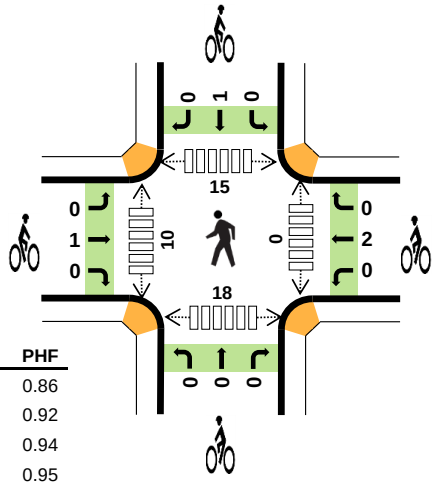
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
E Duane Ave

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.0%	0.86
WB	0.6%	0.92
NB	1.3%	0.94
SB	1.0%	0.95
TOTAL	1.1%	0.97



Two-Hour Count Summaries

Interval Start	E Duane Ave Eastbound				Oakmead Pkwy Westbound				Lawrence Expy Northbound				Lawrence Expy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	82	36	46	0	12	13	67	3	43	272	9	2	80	701	79	1,445	0
4:15 PM	0	90	40	47	1	9	14	54	1	40	312	5	1	75	716	95	1,500	0
4:30 PM	0	91	39	45	0	17	10	58	4	38	355	10	4	65	758	111	1,605	0
4:45 PM	0	107	45	43	0	13	23	43	7	51	344	13	1	69	668	105	1,532	6,082
5:00 PM	**0**	**148**	**68**	**48**	**0**	**8**	**31**	**91**	**8**	**48**	**302**	**6**	**0**	**90**	**629**	**131**	**1,608**	6,245
5:15 PM	**0**	**134**	**60**	**45**	**0**	**15**	**32**	**76**	**2**	**46**	**357**	**19**	**5**	**94**	**705**	**116**	**1,706**	6,451
5:30 PM	**0**	**111**	**46**	**44**	**0**	**11**	**28**	**64**	**0**	**52**	**376**	**14**	**11**	**124**	**626**	**178**	**1,685**	6,531
5:45 PM	**0**	**116**	**55**	**30**	**0**	**9**	**41**	**70**	**1**	**51**	**359**	**13**	**6**	**131**	**543**	**189**	**1,614**	**6,613**
Count Total	0	879	389	348	1	94	192	523	26	369	2,677	89	30	728	5,346	1,004	12,695	0
Peak Hour All	**0**	**509**	**229**	**167**	**0**	**43**	**132**	**301**	**11**	**197**	**1,394**	**52**	**22**	**439**	**2,503**	**614**	**6,613**	**0**
Peak Hour HV	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**22**	**0**	**0**	**3**	**23**	**11**	**71**	**0**
Peak Hour HV%	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**0%**	**0%**	**2%**	**0%**	**0%**	**1%**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	9	7	*21*	0	0	0	0	*0*	0	0	7	2	*9*
4:15 PM	2	1	4	14	*21*	0	0	0	0	*0*	0	3	4	0	*7*
4:30 PM	5	2	4	10	*21*	0	0	0	0	*0*	0	3	1	9	*13*
4:45 PM	1	0	5	7	*13*	0	1	0	0	*1*	0	0	2	1	*3*
5:00 PM	**3**	**1**	**7**	**10**	***21***	**1**	**0**	**0**	**1**	***2***	**0**	**1**	**2**	**1**	*4*
5:15 PM	**3**	**1**	**7**	**12**	***23***	**0**	**1**	**0**	**0**	***1***	**0**	**5**	**6**	**1**	*12*
5:30 PM	**2**	**0**	**5**	**9**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**5**	**5**	*12*
5:45 PM	**1**	**1**	**3**	**6**	***11***	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**2**	**11**	***15***
Count Total	20	8	44	75	*147*	1	3	0	1	*5*	0	16	29	30	*75*
Peak Hour	**9**	**3**	**22**	**37**	***71***	**1**	**2**	**0**	**1**	***4***	**0**	**10**	**15**	**18**	***43***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Duane Ave				Oakmead Pkwy				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	3	0	0	0	0	0	2	0	0	9	0	0	2	4	1	21	0
4:15 PM	0	2	0	0	0	0	0	1	0	0	4	0	0	2	10	2	21	0
4:30 PM	0	5	0	0	0	0	0	2	0	0	4	0	0	1	6	3	21	0
4:45 PM	0	1	0	0	0	0	0	0	0	2	3	0	0	0	5	2	13	76
5:00 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**9**	**1**	**21**	76
5:15 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**1**	**6**	**5**	**23**	78
5:30 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**5**	**2**	**16**	73
5:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**3**	**11**	**71**
Count Total	0	19	1	0	0	0	0	8	0	2	42	0	0	8	48	19	147	0
Peak Hour	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**22**	**0**	**0**	**3**	**23**	**11**	**71**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	E Duane Ave			Oakmead Pkwy			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	1
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	3
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
Count Total	0	1	0	0	2	1	0	0	0	0	1	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

National Data and Surveying Services

City of Sunnyvale
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7255-028 Lawrence Expy & Arques Ave
Date : 4/4/2017

Unshifted Count = All Vehicles & Uturns

	Lawrence Expy Southbound					Arques Ave Westbound					Lawrence Expy Northbound					Arques Ave Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	5	302	78	4	389	16	37	10	0	63	26	419	17	3	465	20	16	27	0	63	980	7
7:15	17	375	55	6	453	17	42	22	0	81	54	515	34	2	605	19	12	19	1	51	1190	9
7:30	17	347	44	4	412	37	52	21	1	111	49	649	52	5	755	42	26	24	0	92	1370	10
7:45	22	347	75	6	450	28	98	30	0	156	55	727	68	0	850	34	29	38	0	101	1557	6
Total	61	1371	252	20	1704	98	229	83	1	411	184	2310	171	10	2675	115	83	108	1	307	5097	32
8:00	19	371	74	5	469	35	86	11	0	132	88	746	88	6	928	31	31	41	0	103	1632	11
8:15	21	328	75	1	425	25	85	17	0	127	80	709	95	6	890	34	45	40	0	119	1561	7
8:30	17	318	90	0	425	32	77	15	0	124	90	796	64	2	952	36	35	38	0	109	1610	2
8:45	29	277	84	5	395	33	84	16	0	133	79	756	54	3	892	36	44	34	0	114	1534	8
Total	86	1294	323	11	1714	125	332	59	0	516	337	3007	301	17	3662	137	155	153	0	445	6337	28
9:00	26	305	101	10	442	28	67	11	0	106	108	787	111	3	1009	42	25	37	1	105	1662	14
9:15	21	310	103	5	439	34	79	12	1	126	123	800	103	6	1032	56	36	35	0	127	1724	12
9:30	24	315	113	7	459	32	53	25	0	110	137	686	83	9	915	45	48	51	0	144	1628	16
9:45	20	303	105	11	439	33	73	24	0	130	120	623	101	1	845	48	32	49	0	129	1543	12
Total	91	1233	422	33	1779	127	272	72	1	472	488	2896	398	19	3801	191	141	172	1	505	6557	54
16:00	26	638	42	4	710	51	48	16	1	116	44	298	38	5	385	60	77	146	2	285	1496	12
16:15	16	696	41	10	763	71	41	17	0	129	53	262	33	4	352	42	94	129	0	265	1509	14
16:30	32	713	37	12	794	96	47	28	0	171	53	302	28	5	388	80	112	157	0	349	1702	17
16:45	18	656	47	11	732	79	48	25	0	152	50	345	41	6	442	80	96	160	0	336	1662	17
Total	92	2703	167	37	2999	297	184	86	1	568	200	1207	140	20	1567	262	379	592	2	1235	6369	60
17:00	21	694	49	8	772	93	39	31	0	163	63	323	29	7	422	88	93	199	0	380	1737	15
17:15	26	741	43	14	824	114	55	27	0	196	36	330	36	4	406	63	126	192	1	382	1808	19
17:30	25	617	49	10	701	107	72	32	1	212	67	344	31	9	451	73	113	174	0	360	1724	20
17:45	15	544	44	12	615	108	59	29	1	197	57	356	41	3	457	68	134	158	0	360	1629	16
Total	87	2596	185	44	2912	422	225	119	2	768	223	1353	137	23	1736	292	466	723	1	1482	6898	70
18:00	25	664	57	8	754	71	45	32	1	149	57	369	32	2	460	90	80	156	0	326	1689	11
18:15	40	685	44	18	787	90	59	26	1	176	49	344	42	3	438	57	121	147	0	325	1726	22
18:30	11	584	45	18	658	98	56	21	1	176	47	319	26	7	399	81	96	145	0	322	1555	26
18:45	15	648	51	13	727	66	37	16	0	119	64	349	18	7	438	86	92	134	0	312	1596	20
Total	91	2581	197	57	2926	325	197	95	3	620	217	1381	118	19	1735	314	389	582	0	1285	6566	79
Grand Total	508	11778	1546	202	14034	1394	1439	514	8	3355	1649	12154	1265	108	15176	1311	1613	2330	5	5259	37824	323
Apprch %	3.6%	83.9%	11.0%	1.4%		41.5%	42.9%	15.3%	0.2%		10.9%	80.1%	8.3%	0.7%		24.9%	30.7%	44.3%	0.1%			
Total %	1.3%	31.1%	4.1%	0.5%	37.1%	3.7%	3.8%	1.4%	0.0%	8.9%	4.4%	32.1%	3.3%	0.3%	40.1%	3.5%	4.3%	6.2%	0.0%	13.9%	100.0%	

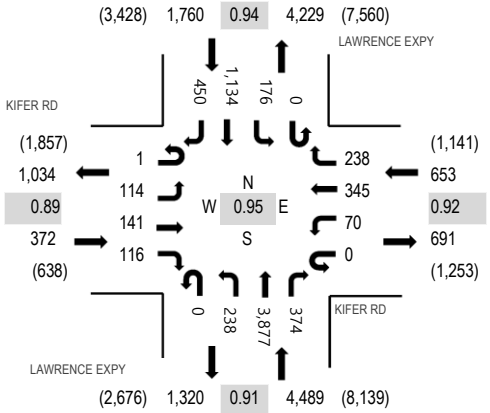
AM PEAK HOUR	Lawrence Expy Southbound					Arques Ave Westbound					Lawrence Expy Northbound					Arques Ave Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 09:00 to 10:00																					
Peak Hour For Entire Intersection Begins at 09:00																					
9:00	26	305	101	10	442	28	67	11	0	106	108	787	111	3	1009	42	25	37	1	105	1662
9:15	21	310	103	5	439	34	79	12	1	126	123	800	103	6	1032	56	36	35	0	127	1724
9:30	24	315	113	7	459	32	53	25	0	110	137	686	83	9	915	45	48	51	0	144	1628
9:45	20	303	105	11	439	33	73	24	0	130	120	623	101	1	845	48	32	49	0	129	1543
Total Volume	91	1233	422	33	1779	127	272	72	1	472	488	2896	398	19	3801	191	141	172	1	505	6557
% App Total	5.1%	69.3%	23.7%	1.9%		26.9%	57.6%	15.3%	0.2%		12.8%	76.2%	10.5%	0.5%		37.8%	27.9%	34.1%	0.2%		
PHF	.875	.979	.934	.750	.969	.934	.861	.720	.250	.908	.891	.905	.896	.528	.921	.853	.734	.843	.250	.877	.951

PM PEAK HOUR	Lawrence Expy Southbound					Arques Ave Westbound					Lawrence Expy Northbound					Arques Ave Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	18	656	47	11	732	79	48	25	0	152	50	345	41	6	442	80	96	160	0	336	1662
17:00	21	694	49	8	772	93	39	31	0	163	63	323	29	7	422	88	93	199	0	380	1737
17:15	26	741	43	14	824	114	55	27	0	196	36	330	36	4	406	63	126	192	1	382	1808
17:30	25	617	49	10	701	107	72	32	1	212	67	344	31	9	451	73	113	174	0	360	1724
Total Volume	90	2708	188	43	3029	393	214	115	1	723	216	1342	137	26	1721	304	428	725	1	1458	6931
% App Total	3.0%	89.4%	6.2%	1.4%		54.4%	29.6%	15.9%	0.1%		12.6%	78.0%	8.0%	1.5%		20.9%	29.4%	49.7%	0.1%		
PHF	.865	.914	.959	.768	.919	.862	.743	.898	.250	.853	.806	.972	.835	.722	.954	.864	.849	.911	.250	.954	.958

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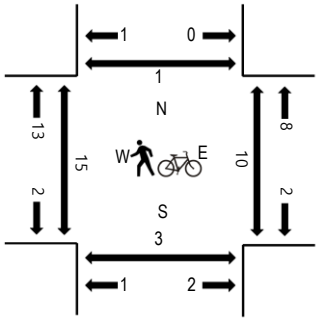
Location: 1 LAWRENCE EXPY & KIFER RD AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	10	14	38	0	11	43	32	0	44	531	80	1	34	278	82	1,198	6,072	1	0	0	0
7:15 AM	0	16	12	34	0	16	54	33	0	51	661	82	2	35	276	78	1,350	6,621	0	2	0	0
7:30 AM	0	26	17	23	0	18	85	47	0	44	937	108	2	33	284	92	1,716	7,059	3	1	0	0
7:45 AM	0	22	28	26	0	18	83	48	0	61	962	89	1	30	334	106	1,808	7,167	0	0	0	0
8:00 AM	1	21	29	29	0	24	77	46	0	69	879	91	0	56	319	106	1,747	7,274	5	5	0	0
8:15 AM	0	33	39	33	0	19	86	60	0	52	975	77	0	43	275	96	1,788		3	3	0	1
8:30 AM	0	28	36	26	0	21	88	68	0	51	946	112	0	33	292	123	1,824		0	1	0	0
8:45 AM	0	32	37	28	0	6	94	64	0	66	1,077	94	0	44	248	125	1,915		4	1	2	0

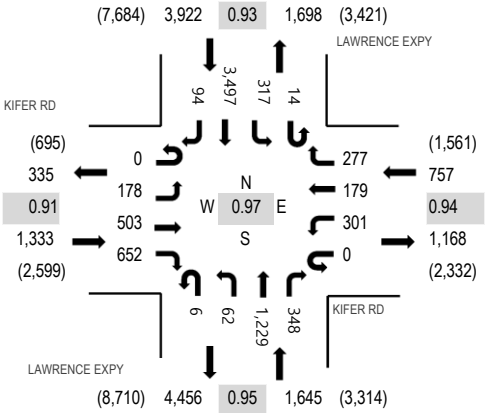
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	3	0	0	0	0	0	1	0	0	5	1	0	0	5	0	15
Lights	1	107	137	112	0	60	338	230	0	237	3,851	371	0	175	1,095	438	7,152
Mediums	0	4	4	4	0	10	7	7	0	1	21	2	0	1	34	12	107
Total	1	114	141	116	0	70	345	238	0	238	3,877	374	0	176	1,134	450	7,274

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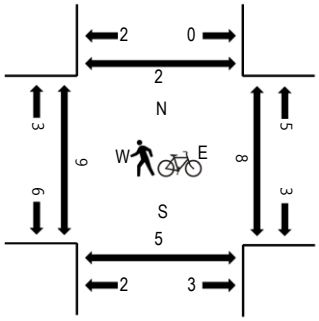
Location: 1 LAWRENCE EXPY & KIFER RD PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	37	162	185	0	67	38	74	2	16	289	97	0	69	782	30	1,848	7,572	3	1	2	0
4:15 PM	0	37	114	156	0	63	40	75	2	7	356	99	2	94	845	27	1,917	7,657	1	1	0	0
4:30 PM	0	48	130	161	0	74	28	68	1	13	300	90	5	87	935	28	1,968	7,650	1	0	2	1
4:45 PM	0	45	147	175	0	77	48	57	2	20	272	66	3	68	838	21	1,839	7,542	3	1	1	1
5:00 PM	0	48	112	160	0	87	63	77	1	22	301	93	4	68	879	18	1,933	7,586	1	2	0	0
5:15 PM	0	38	117	139	0	66	66	80	0	10	344	87	4	60	879	20	1,910		5	1	2	0
5:30 PM	0	38	110	133	0	71	48	82	1	11	297	102	2	74	857	34	1,860		4	4	0	0
5:45 PM	0	47	131	129	0	75	55	82	0	15	303	95	6	60	868	17	1,883		3	2	2	0

Peak Rolling Hour Flow Rates

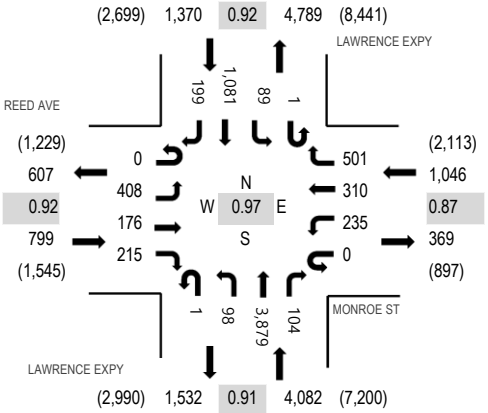
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	1	0	0	3	0	0	0	3	0	9
Lights	0	175	499	651	0	301	175	273	6	62	1,214	339	14	315	3,475	86	7,585
Mediums	0	2	3	1	0	0	4	3	0	0	12	9	0	2	19	8	63
Total	0	178	503	652	0	301	179	277	6	62	1,229	348	14	317	3,497	94	7,657

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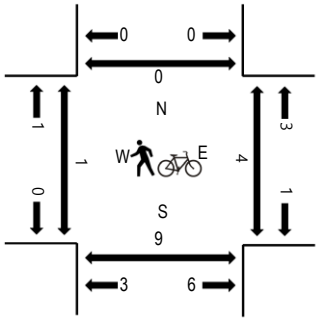
Location: 2 LAWRENCE EXPY & MONROE ST AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				MONROE ST Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	52	76	39	0	33	54	106	1	28	510	39	1	47	175	41	1,202	6,260	1	0	7	0
7:15 AM	0	88	99	27	0	69	110	143	0	21	612	66	0	32	266	38	1,571	6,936	0	4	4	0
7:30 AM	0	85	34	44	0	83	82	116	0	43	854	22	0	26	329	37	1,755	7,193	0	1	1	0
7:45 AM	0	112	33	57	0	55	90	126	1	48	847	26	0	28	279	30	1,732	7,140	1	0	3	0
8:00 AM	0	111	44	65	0	53	82	106	1	31	988	26	0	25	302	44	1,878	7,297	0	0	1	0
8:15 AM	0	78	42	62	0	57	78	129	0	28	987	33	0	34	249	51	1,828		0	1	2	0
8:30 AM	0	130	50	44	0	67	71	152	0	19	829	19	1	14	259	47	1,702		0	3	2	0
8:45 AM	0	89	40	44	0	58	79	114	0	20	1,075	26	0	16	271	57	1,889		1	0	1	0

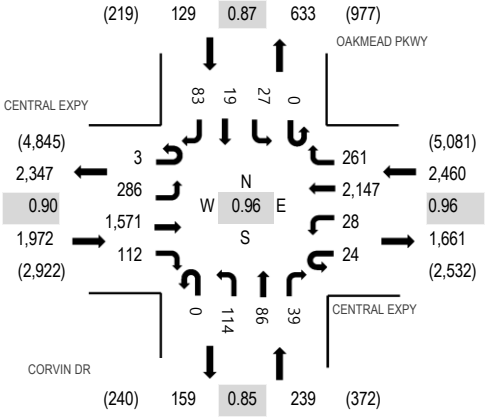
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	0	2	0	0	0	2	0	2	2	0	0	0	4	5	19
Lights	0	401	173	210	0	231	304	496	1	95	3,860	100	1	89	1,039	190	7,190
Mediums	0	5	3	3	0	4	6	3	0	1	17	4	0	0	38	4	88
Total	0	408	176	215	0	235	310	501	1	98	3,879	104	1	89	1,081	199	7,297

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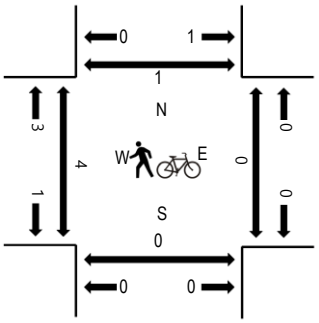
Location: 19 CORVIN DR & CENTRAL EXPY AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				CORVIN DR Northbound				OAKMEAD PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	9	139	5	6	10	565	40	0	8	4	7	0	2	4	6	806	3,794	0	0	0	0
7:15 AM	1	20	169	6	6	6	626	47	0	5	9	13	0	5	3	11	927	4,162	0	1	0	0
7:30 AM	1	28	218	14	4	6	618	48	0	15	8	9	0	4	1	12	986	4,449	1	0	0	0
7:45 AM	3	44	274	18	4	2	565	68	0	30	19	6	0	5	6	31	1,075	4,622	4	0	0	0
8:00 AM	1	70	351	20	8	4	569	57	0	23	16	14	0	8	2	31	1,174	4,800	0	0	0	0
8:15 AM	2	71	395	32	3	5	546	55	0	36	25	6	0	9	5	24	1,214		1	0	0	0
8:30 AM	0	73	391	19	7	11	509	75	0	20	18	11	0	3	8	14	1,159		2	0	0	1
8:45 AM	0	72	434	41	6	8	523	74	0	35	27	8	0	7	4	14	1,253		1	0	0	0

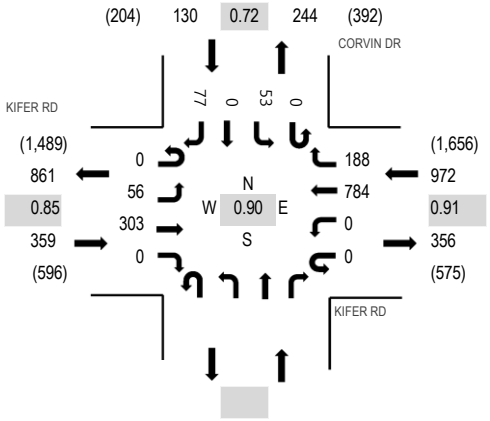
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	5	1	0	0	10	0	0	0	1	2	0	0	0	0	19
Lights	3	283	1,542	111	24	28	2,094	259	0	113	81	37	0	26	17	83	4,701
Mediums	0	3	24	0	0	0	43	2	0	1	4	0	0	1	2	0	80
Total	3	286	1,571	112	24	28	2,147	261	0	114	86	39	0	27	19	83	4,800

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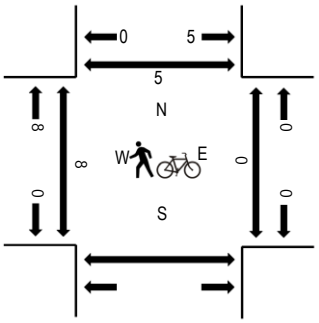
Location: 20 CORVIN DR & KIFER RD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				CORVIN DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	41	0	0	0	92	18					0	4	0	10	170	995	0	0		0
7:15 AM	0	9	50	0	0	0	98	15					0	4	0	7	183	1,147	0	0		0
7:30 AM	0	15	41	0	0	0	170	30					0	6	0	13	275	1,323	1	0		0
7:45 AM	0	16	60	0	0	0	221	40					0	13	0	17	367	1,424	0	0		0
8:00 AM	0	13	57	0	0	0	180	49					0	11	0	12	322	1,461	1	0		0
8:15 AM	0	13	79	0	0	0	187	40					0	16	0	24	359		6	0		4
8:30 AM	0	19	87	0	0	0	208	40					0	7	0	15	376		0	0		0
8:45 AM	0	11	80	0	0	0	209	59					0	19	0	26	404		0	0		0

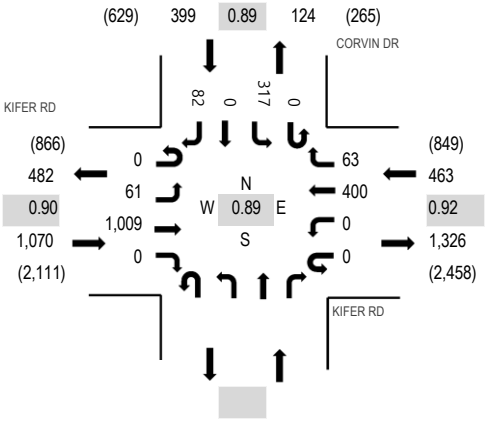
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	4	0	0	0	6	2					0	0	0	1	14
Lights	0	54	291	0	0	0	763	183					0	53	0	73	1,417
Mediums	0	1	8	0	0	0	15	3					0	0	0	3	30
Total	0	56	303	0	0	0	784	188					0	53	0	77	1,461

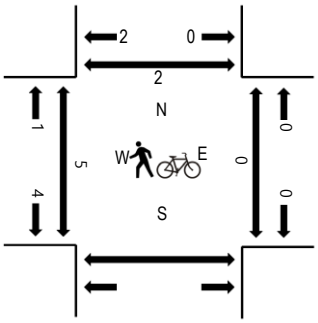
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Location: 20 CORVIN DR & KIFER RD PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				CORVIN DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	13	222	0	0	0	87	16					0	41	0	11	390	1,657	2	0		0
4:15 PM	0	14	237	0	0	0	68	11					0	33	0	13	376	1,809	0	0		0
4:30 PM	0	26	242	0	0	0	85	16					0	47	0	12	428	1,892	2	0		2
4:45 PM	0	29	258	0	0	0	87	16					0	52	0	21	463	1,922	0	0		0
5:00 PM	0	21	291	0	0	0	107	19					0	86	0	18	542	1,932	2	0		1
5:15 PM	0	5	235	0	0	0	110	13					0	73	0	23	459		2	0		0
5:30 PM	0	20	258	0	0	0	80	13					0	71	0	16	458		1	0		0
5:45 PM	0	15	225	0	0	0	103	18					0	87	0	25	473		0	0		0

Peak Rolling Hour Flow Rates

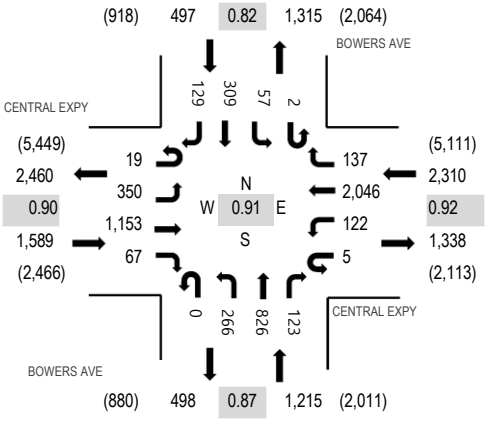
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0					0	0	0	1	2
Lights	0	59	1,005	0	0	0	393	60					0	315	0	80	1,912
Mediums	0	1	4	0	0	0	7	3					0	2	0	1	18
Total	0	61	1,009	0	0	0	400	63					0	317	0	82	1,932

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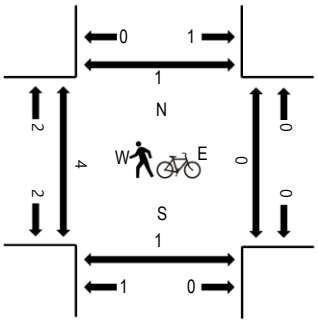
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Location: 23 BOWERS AVE & CENTRAL EXPY AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	16	117	8	4	30	686	44	0	34	78	17	0	5	44	17	1,101	4,895	0	0	0	0
7:15 AM	6	30	127	13	1	27	640	41	0	61	100	21	0	10	40	47	1,164	5,015	0	0	0	0
7:30 AM	9	37	185	16	2	25	636	21	0	80	114	19	0	7	43	60	1,254	5,243	0	0	0	0
7:45 AM	9	56	220	27	1	26	583	34	0	69	178	25	0	14	83	51	1,376	5,445	1	0	0	0
8:00 AM	2	63	255	19	2	24	487	25	0	60	154	25	0	13	66	26	1,221	5,611	1	0	1	0
8:15 AM	3	92	311	21	2	34	504	31	0	67	190	27	1	10	70	29	1,392		1	0	0	1
8:30 AM	7	93	271	13	0	37	524	38	0	75	226	41	1	16	77	37	1,456		1	0	0	0
8:45 AM	7	102	316	14	1	27	531	43	0	64	256	30	0	18	96	37	1,542		1	0	0	0

Peak Rolling Hour Flow Rates

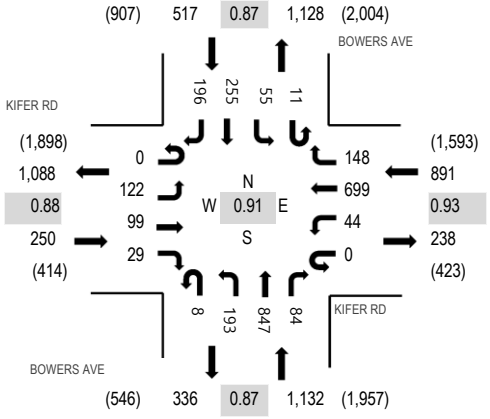
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	0	7	0	0	0	5	2	0	0	2	0	22
Lights	19	349	1,124	66	5	119	1,997	136	0	265	801	119	2	47	295	125	5,469
Mediums	0	1	23	1	0	3	42	1	0	1	20	2	0	10	12	4	120
Total	19	350	1,153	67	5	122	2,046	137	0	266	826	123	2	57	309	129	5,611

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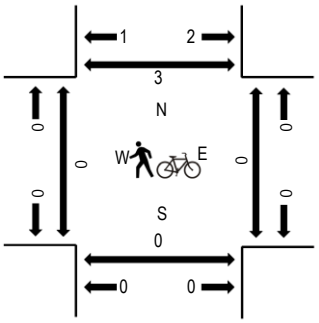
Location: 24 BOWERS AVE & KIFER RD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	19	16	3	0	2	83	15	1	14	134	11	0	14	30	39	381	2,081	0	0	0	0
7:15 AM	0	20	20	5	0	3	105	21	1	21	154	6	0	18	38	28	440	2,314	2	0	2	0
7:30 AM	0	12	12	6	0	6	175	40	3	31	194	12	5	12	40	41	589	2,553	1	0	0	2
7:45 AM	0	16	27	8	0	7	197	48	2	30	198	13	0	24	55	46	671	2,732	2	1	2	3
8:00 AM	0	30	14	5	0	9	195	40	1	33	159	19	2	13	55	39	614	2,790	0	0	0	0
8:15 AM	0	32	30	9	0	9	161	29	4	36	228	14	3	13	59	52	679		0	0	0	0
8:30 AM	0	30	30	7	0	14	185	44	1	65	234	25	3	13	71	46	768		0	0	0	3
8:45 AM	0	30	25	8	0	12	158	35	2	59	226	26	3	16	70	59	729		0	0	0	0

Peak Rolling Hour Flow Rates

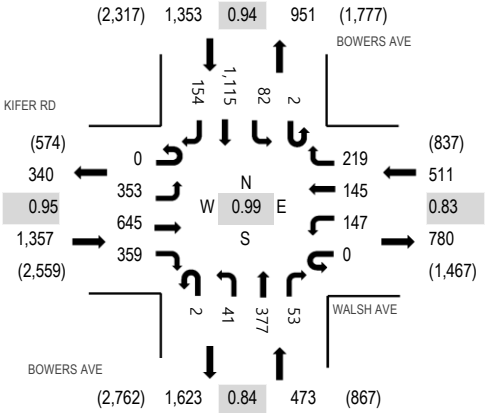
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	3	1	0	0	0	4	1	0	0	2	0	0	0	0	3	14
Lights	0	112	95	29	0	42	685	138	8	192	837	83	11	51	250	188	2,721
Mediums	0	7	3	0	0	2	10	9	0	1	8	1	0	4	5	5	55
Total	0	122	99	29	0	44	699	148	8	193	847	84	11	55	255	196	2,790

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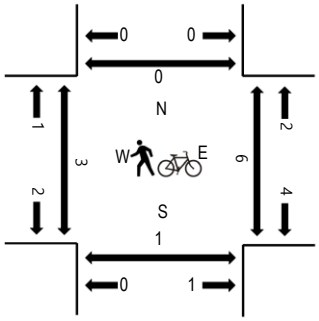
Location: 8 BOWERS AVE & WALSH AVE PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				WALSH AVE Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	97	123	57	0	17	25	24	2	4	85	11	1	9	150	14	619	2,886	0	0	1	1
4:15 PM	0	97	124	46	0	18	30	22	1	8	85	8	2	14	199	18	672	3,190	1	0	1	0
4:30 PM	0	89	169	71	3	12	30	45	1	11	72	6	0	21	198	21	749	3,443	0	0	1	0
4:45 PM	0	97	153	79	1	26	37	36	1	11	74	14	0	31	261	25	846	3,626	0	1	0	1
5:00 PM	0	92	176	77	0	36	41	76	1	9	87	17	0	17	260	34	923	3,694	0	2	0	0
5:15 PM	0	96	169	96	0	43	49	49	1	14	71	10	1	24	273	29	925		1	1	0	0
5:30 PM	0	78	171	88	0	30	28	41	0	10	116	15	1	20	292	42	932		0	2	1	0
5:45 PM	0	87	129	98	0	38	27	53	0	8	103	11	0	21	290	49	914		2	0	0	0

Peak Rolling Hour Flow Rates

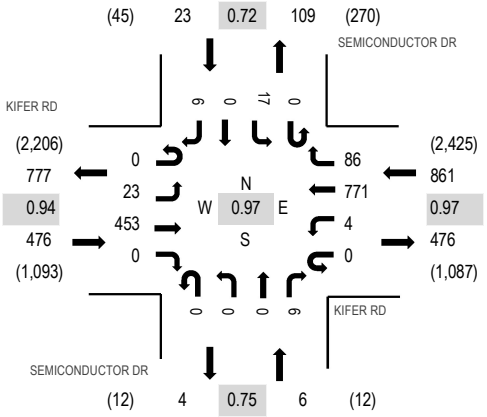
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	349	643	359	0	145	143	218	2	41	370	52	2	81	1,111	151	3,667
Mediums	0	3	2	0	0	2	2	1	0	0	7	1	0	1	4	3	26
Total	0	353	645	359	0	147	145	219	2	41	377	53	2	82	1,115	154	3,694

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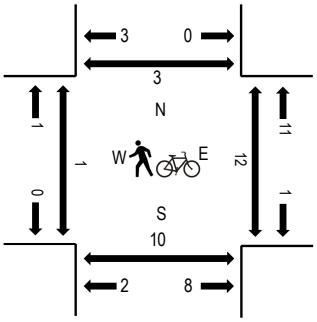
Location: 1 SEMICONDUCTOR DR & KIFER RD AM
Date: Tuesday, September 11, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

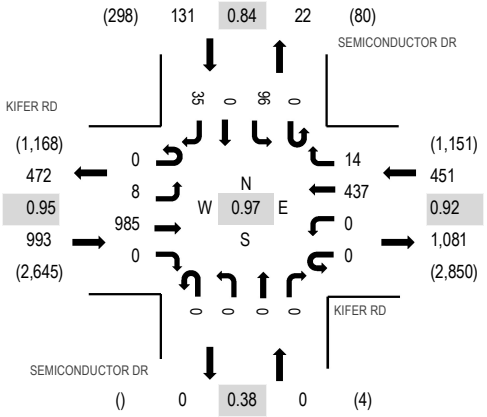
Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				SEMICONDUCTOR DR Northbound				SEMICONDUCTOR DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	26	1	0	0	121	10	0	0	0	1	0	3	0	0	162	966	1	0	4	0
7:15 AM	0	2	42	0	0	1	168	14	0	0	0	0	0	0	0	1	228	1,123	0	5	3	1
7:30 AM	0	2	62	0	0	1	184	15	0	0	0	2	0	1	0	1	268	1,196	0	1	3	2
7:45 AM	0	1	65	0	0	0	220	16	0	0	0	1	0	2	0	3	308	1,225	0	1	2	0
8:00 AM	0	7	90	1	0	0	192	26	0	0	0	2	0	1	0	0	319	1,269	1	1	0	0
8:15 AM	0	6	93	1	0	1	184	14	0	0	0	0	0	1	0	1	301	1,290	1	4	1	1
8:30 AM	0	5	84	0	0	0	190	15	0	0	0	0	0	3	0	0	297	1,324	0	1	1	3
8:45 AM	0	7	112	0	0	2	200	21	0	0	0	2	0	7	0	1	352	1,366	1	1	2	0
9:00 AM	0	7	118	0	0	1	188	22	0	0	0	2	0	1	0	1	340	1,340	0	8	0	3
9:15 AM	0	4	112	0	0	1	191	19	0	0	0	1	0	5	0	2	335		0	1	0	0
9:30 AM	0	5	111	0	0	0	192	24	0	0	0	1	0	4	0	2	339		0	2	5	0
9:45 AM	0	2	127	0	0	2	164	26	0	0	0	0	0	5	0	0	326		1	3	6	0
Count Total	0	48	1,042	3	0	9	2,194	222	0	0	0	12	0	33	0	12	3,575		5	28	27	10
Peak Hour	0	23	453	0	0	4	771	86	0	0	0	6	0	17	0	6	#####		1	12	7	3

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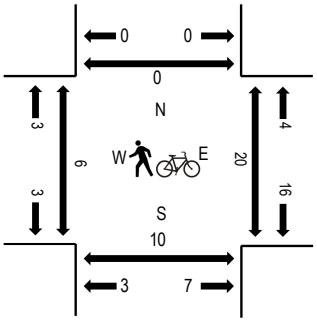
Location: 1 SEMICONDUCTOR DR & KIFER RD PM
Date: Tuesday, September 11, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				SEMICONDUCTOR DR Northbound				SEMICONDUCTOR DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	236	0	1	0	85	4	0	1	0	1	0	24	0	3	355	1,426	4	6	7	0
4:15 PM	0	2	238	0	0	0	82	2	0	0	0	1	0	14	0	1	340	1,462	0	4	3	0
4:30 PM	0	1	235	0	0	0	89	8	0	0	0	0	0	14	0	5	352	1,530	1	6	2	1
4:45 PM	0	3	235	0	0	0	111	2	0	0	0	0	0	21	0	7	379	1,575	2	1	1	0
5:00 PM	0	1	236	0	0	0	114	1	0	0	0	0	0	27	0	12	391	1,545	1	8	2	0
5:15 PM	0	3	257	0	0	0	117	5	0	0	0	0	0	19	0	7	408	1,489	0	5	0	0
5:30 PM	0	1	257	0	0	0	95	6	0	0	0	0	0	29	0	9	397	1,363	3	5	4	0
5:45 PM	0	1	237	0	0	0	83	9	0	0	0	0	0	12	0	7	349	1,247	1	2	2	0
6:00 PM	1	3	206	0	0	0	90	11	0	0	0	1	0	17	0	6	335	1,127	2	5	3	1
6:15 PM	0	0	173	0	0	0	84	8	0	0	0	0	0	13	0	4	282		0	1	0	0
6:30 PM	0	1	171	0	0	0	76	8	0	0	0	0	0	17	0	8	281		1	6	2	2
6:45 PM	0	0	147	0	0	0	60	0	0	0	0	0	0	11	0	11	229		0	1	1	0
Count Total	1	16	2,628	0	1	0	1,086	64	0	1	0	3	0	218	0	80	4,098		15	50	27	4
Peak Hour	0	8	985	0	0	0	437	14	0	0	0	0	0	96	0	35	#####		6	19	7	0

Appendix B
Volume Summary

Intersection Number: 1
Traffix Node Number: 5320
Intersection Name: Mary Avenue & Central Expressway
Peak Hour: AM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	110	104	58	161	1770	181	463	378	613	163	713	90	4804
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr					3						3		6
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					8						23		31
830 W Evelyn Ave									1	1			2
1081 Innovation Way					1						60		61
1111 Lockheed Martin Way					2						6		8
1152 Bordeaux Dr					3						14		17
1194 N. Mathilda Ave					1	1	7				4		13
1230 Oakmead Pkwy											2		2
1260 N Mathilda Ave							1				1		2
215 Moffett Park Dr					2						5		7
265 Sobrante Way		1	1				1	1	2	4	6		16
275 N Mathilda Ave									1			5	6
824 San Aleso Ave													
445 N Mary Ave	3	2	7	36				12				12	72
589 W. Java Dr		2						12					14
610 N Mary Ave	26	20	45	258				117				147	613
615 N. Mathilda Ave	-4	-4			-5			10			2	22	21
623 N Pastoria Ave	1											5	6
684 W. Maude Ave		4			10			28			25	48	115
810 W Maude Ave		2			6			17			15	30	70
901 Kifer Rd					1								1
1120 Kifer Rd					13								13
1155 Aster Ave					15						2		17
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave					3						1		4
520 Almanor Ave	3	2			1			10			5	20	41
675 Almanor Avenue		2						8					10
803 W El Camino Real													
871 and 895 E Fremont Ave					3						1		4
223 N Mathilda Ave									3		12		15
456 W Olive Ave					-4						-13		-17
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave	2											-3	-1
1 AMD Place					19						-5		14
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					6			-1			-1		4
915 De Guigne Dr					3						-7		-4
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					6						28		34
4301, 4401, 4551 Great America Pkwy											24		24
2620-2727 Augustine Dr					73						-48		25

2600, 2800 San Tomas Expy & 2400 Condensa St					12						98		110
5010 Old Ironsides Dr					18						139		157
3000 Bowers Ave					3						37		40
3700 El Camino Real													
2950 Lakeside Dr					4						5		9
3607 Kifer Rd					1						6		7
City Place					11						10		21
3226 Scott Blvd					1						5		6
2041 Mission College Blvd					3						4		7
3100-3200 Coronado Dr					3						19		22
1 Great America Pkwy					1						2		3
3375 Scott Blvd					4						23		27
3001 Tasman Dr					1						5		6
Santa Clara LSAP				4	19	4					-1		26
2350 & 2305 Mission College Blvd					6						28		34
3625 Peterson Way					5						28		33
3402 El Camino Real													
3045 Stender Way					2						1		3
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	31	31	53	298	264	5	9	214	7	5	574	286	1777
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	141	135	111	459	2034	186	472	592	620	168	1287	376	6581
Project Trips	0	0	0	0	10	0	0	0	0	0	54	0	64
Existing + Project	110	104	58	161	1780	181	463	378	613	163	767	90	4868
Background + Project	141	135	111	459	2044	186	472	592	620	168	1341	376	6645

Traffix Node Number: 57
Intersection Name: Fair Oaks Avenue & US 101 NB Ramps
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Future Volume Reduction	148	0	0	0	0	0	0	0	0	0	0	0	
Existing Conditions	522	747	0	181	4	229	0	822	537	0	0	0	3042
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						8					11
1120 Innovation Way													
1235 Bordeaux Dr		15		14									29
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real						4			3				7
840 E El Camino Real													
861 E. El Camino Real						5			4				9
1050 Kifer Rd									11				11
830 W Evelyn Ave													
1081 Innovation Way									53				53
1111 Lockheed Martin Way		6						21					27
1152 Bordeaux Dr		7						35					42
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						4					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		16						18					34
445 N Mary Ave													
589 W. Java Dr		7		17				17					41
610 N Mary Ave	10	4						2					16
615 N. Mathilda Ave		3						-2					1
623 N Pastoria Ave													
684 W. Maude Ave		7						1					8
810 W Maude Ave		4						1					5
901 Kifer Rd									1				1
1120 Kifer Rd		6						20	11				37
1155 Aster Ave		2						15	23				40
1250 Lakeside Dr													
2502 Town Center Ln		10				8		7					25
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		1				1		4	4				10
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave	1	1		-1				-1					
1111, 1139 Karlstad Dr	27	47		-20				-29					25
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr	2	3		-2				-3					
370 San Aleso Ave													
1 AMD Place		5						42	41				88
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave		-2				-1		2	1				
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr		-15						13	20				18
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													

2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													
3607 Kifer Rd		5						1					6
City Place	4	8		3	8	8		17	5				53
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP									4				4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	44	156	0	11	8	25	0	219	181	0	0	0	644
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Future Volume Reduction	165	0	0	0	0	0	0	0	0	0	0	0	
Background Conditions	566	903	0	192	12	254	0	1041	718	0	0	0	3686
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	0	0	0	0	0	0	0	7	0	0	0	7
Future Volume Reduction	148	0	0	0	0	0	0	0	0	0	0	0	
Existing + Project	522	747	0	181	4	229	0	822	544	0	0	0	3049
Future Volume Reduction	165	0	0	0	0	0	0	0	0	0	0	0	
Background + Project	566	903	0	192	12	254	0	1041	725	0	0	0	3693
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 91
Intersection Name: Fair Oaks Avenue & Ahwanee Avenue
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	266	733	37	234	65	30	13	1376	66	51	16	212	3099
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd		69						11					80
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		6						21					27
1152 Bordeaux Dr		7						35					42
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						4					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		16				8				48	7	18	97
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave		4						2					6
615 N. Mathilda Ave		3						-2					1
623 N Pastoria Ave													
684 W. Maude Ave		7						1					8
810 W Maude Ave		4						1					5
901 Kifer Rd		9						1					10
1120 Kifer Rd		4						30					34
1155 Aster Ave		6						38					44
1250 Lakeside Dr													
2502 Town Center Ln		18						20					38
311 S Mathilda Ave													
520 Almanor Ave									2				2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						11					14
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		17						-11					6
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		11						83					94
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave		-4						4					
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave									1	4			5
915 De Guigne Dr		-37						33					-4
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd		5						1					6
City Place		1	3		2	3	2	2		5	5		23
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP								4					4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	187	3	0	2	11	2	401	3	57	12	18	696
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	266	920	40	234	67	41	15	1777	69	108	28	230	3795
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	40	0	0	0	0	0	7	0	0	0	0	47
Existing + Project	266	773	37	234	65	30	13	1383	66	51	16	212	3146
Background + Project	266	960	40	234	67	41	15	1784	69	108	28	230	3842
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Intersection Number: 4
Traffix Node Number: 41
Intersection Name: Fair Oaks Avenue & Duane Avenue
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	48	700	153	237	121	167	201	943	6	13	102	99	2790
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd		69						11					80
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way	2	4						14				7	27
1152 Bordeaux Dr		7						35					42
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						4					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		72				8					7		87
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave		4						2					6
615 N. Mathilda Ave		3						-2					1
623 N Pastoria Ave													
684 W. Maude Ave		7						1					8
810 W Maude Ave		4						1					5
901 Kifer Rd		9						1					10
1120 Kifer Rd		4						30					34
1155 Aster Ave		6						38					44
1250 Lakeside Dr													
2502 Town Center Ln		18				5	3	20					46
311 S Mathilda Ave													
520 Almanor Ave				1				1					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						11					14
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		17						-11					6
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		-3	14	62		26	6	21		-1	-1		124
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave		-4						4					
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2	2					1					5
915 De Guigne Dr		-16	-21	22				11					-4
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													

5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													
3607 Kifer Rd		5						1					6
City Place	6	4	6	1	7	2	9	7	7	7	3	4	63
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP								4					4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	8	253	1	86	7	41	18	317	7	6	9	11	764
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	56	953	154	323	128	208	219	1260	13	19	111	110	3554
Project Trips	0	40	0	0	0	0	3	7	0	0	0	0	50
Existing + Project	48	740	153	237	121	167	204	950	6	13	102	99	2840
Background + Project	56	993	154	323	128	208	222	1267	13	19	111	110	3604

Traffix Node Number: 92
Intersection Name: Fair Oaks Avenue & Wolfe Road
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	574	334	0	0	0	0	0	561	0	4	0	770	2243
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr	3										5		8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real	3										2		5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real	7										5		12
840 E El Camino Real													
861 E. El Camino Real	9										7		16
1050 Kifer Rd		69						11					80
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr	4	4						18			18		44
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr	1	1						2			2		6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave	56	24											80
445 N Mary Ave													
589 W. Java Dr	4										17		21
610 N Mary Ave	4										2		6
615 N. Mathilda Ave	3										-2		1
623 N Pastoria Ave													
684 W. Maude Ave	7										1		8
810 W Maude Ave	4										1		5
901 Kifer Rd		9						1					10
1120 Kifer Rd		4						30					34
1155 Aster Ave		6						38					44
1250 Lakeside Dr													
2502 Town Center Ln	24										23		47
311 S Mathilda Ave													
520 Almanor Ave								1					1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave	2	1						4			7		14
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr	11	6						-4			-7		6
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr	1										-1		
370 San Aleso Ave													
1 AMD Place	26	-4						21			6		49
617 E. Evelyn Ave	2										8		10
625 E. Taylor Ave	-4										4		
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2						1					3
915 De Guigne Dr		-16						11					-5
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													

5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													
3607 Kifer Rd	5											1	6
City Place		2						5				5	12
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP								4					4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	172	119	0	0	0	0	0	226	0	0	0	104	621
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	746	453	0	0	0	0	0	787	0	4	0	874	2864
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	40	0	0	0	0	0	10	0	0	0	0	50
Existing + Project	574	374	0	0	0	0	0	571	0	4	0	770	2293
Background + Project	746	493	0	0	0	0	0	797	0	4	0	874	2914
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 42
Intersection Name: Fair Oaks Avenue & Arques Avenue
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	99	495	20	47	187	188	165	717	230	66	89	60	2363
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr					2						2		4
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd													
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy											1		1
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		24						23					47
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		2						7					9
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20			12			6			-5		33
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave			1	-1									
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1	1										2
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					2						8		10
4301, 4401, 4551 Great America Pkwy					1						8		9
2620-2727 Augustine Dr					17						-11		6
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave											7		7
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd		5						1					6
City Place	7	5	1	7	7		7	5	9	2	1	9	60
3226 Scott Blvd					1						5		6
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr					1						5		6
1 Great America Pkwy													
3375 Scott Blvd					1						4		5
3001 Tasman Dr													
Santa Clara LSAP					17								17
2350 & 2305 Mission College Blvd					2						8		10
3625 Peterson Way					1						8		9
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	7	126	3	6	65	0	7	125	9	2	42	9	401
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	106	621	23	53	252	188	172	842	239	68	131	69	2764
Project Trips	0	0	0	0	0	0	0	0	5	0	0	0	5
Existing + Project	99	495	20	47	187	188	165	717	235	66	89	60	2368
Background + Project	106	621	23	53	252	188	172	842	244	68	131	69	2769

Traffix Node Number: 95
Intersection Name: Fair Oaks Avenue & California Avenue
Peak Hour: AM
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	77	702	38	0	0	0	294	941	92	33	30	35	2242
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd									4				4
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		24						23					47
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		2						7					9
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20						6					26
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1											1
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd		5						1					6
City Place		7						21					28
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	128	0	0	0	0	0	141	4	0	0	0	273
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	77	830	38	0	0	0	294	1082	96	33	30	35	2515
Project Trips	0	0	0	0	0	0	0	5	0	0	0	0	5
Existing + Project	77	702	38	0	0	0	294	946	92	33	30	35	2247
Background + Project	77	830	38	0	0	0	294	1087	96	33	30	35	2520

Traffix Node Number: 96
Intersection Name: Fair Oaks Avenue & Kifer Road
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	590	74	137	0	117	202	1363	0	0	0	0	2483
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd				4		5	32						41
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd							4						4
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		24						23					47
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		2				1	1	7					11
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20						6					26
617 E. Evelyn Ave		2						8					10
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave			1										1
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave						1							1
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd			5	1									6
City Place		7						21					28
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	122	6	5	0	7	37	140	0	0	0	0	317
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	0	712	80	142	0	124	239	1503	0	0	0	0	2800
Project Trips	0	0	0	5	0	11	59	0	0	0	0	0	75
Existing + Project	0	590	74	142	0	128	261	1363	0	0	0	0	2558
Background + Project	0	712	80	147	0	135	298	1503	0	0	0	0	2875

Traffix Node Number: 62
Intersection Name: Fair Oaks Avenue & Evelyn Avenue
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	129	567	29	233	337	26	45	1415	62	35	112	191	3181
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd		4						4					8
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						2					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd	1	4						28				5	38
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave					1								1
589 W. Java Dr		4						17					21
610 N Mary Ave					10						2		12
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave					2								2
810 W Maude Ave					1								1
901 Kifer Rd								4					4
1120 Kifer Rd					17						-1		16
1155 Aster Ave					8						1		9
1250 Lakeside Dr													
2502 Town Center Ln	24											23	47
311 S Mathilda Ave													
520 Almanor Ave					1								1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						8					11
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20						6					26
617 E. Evelyn Ave			2	8									10
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave		1											1
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd					1						5		6
City Place	2	1	1	4	7	7	4	4	8	4	3	6	51
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	27	100	3	12	48	7	4	129	8	4	10	34	386
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	156	667	32	245	385	33	49	1544	70	39	122	225	3567
Project Trips	0	11	0	0	0	0	0	59	0	0	0	0	70
Existing + Project	129	578	29	233	337	26	45	1474	62	35	112	191	3251
Background + Project	156	678	32	245	385	33	49	1603	70	39	122	225	3637

Traffix Node Number: 63
Intersection Name: Fair Oaks Avenue & Old SF Road
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	76	419	34	146	230	147	76	934	39	49	123	123	2396
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd		4						4					8
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real	3											2	5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						5					12
840 E El Camino Real													
861 E. El Camino Real		9						7					16
1050 Kifer Rd		4										28	32
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave													
589 W. Java Dr		4						17					21
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd								4					4
1120 Kifer Rd											-4		-4
1155 Aster Ave					15						2		17
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						8					11
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct					6						3		9
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20						6					26
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					2						8		10
4301, 4401, 4551 Great America Pkwy					16						2		18
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					2						16		18
5010 Old Ironsides Dr													
3000 Bowers Ave		1											1
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd					2						10		12
City Place		12						16					28
3226 Scott Blvd													
2041 Mission College Blvd											1		1
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					7								7
2350 & 2305 Mission College Blvd					2						8		10
3625 Peterson Way					1						8		9
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	3	108	0	0	53	0	0	111	0	0	54	30	359
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	79	527	34	146	283	147	76	1045	39	49	177	153	2755
Project Trips	5	4	0	0	0	0	0	22	0	0	0	27	58
Existing + Project	81	423	34	146	230	147	76	956	39	49	123	150	2454
Background + Project	84	531	34	146	283	147	76	1067	39	49	177	180	2813

Traffix Node Number: 1404
Intersection Name: Fair Oaks Avenue & El Camino Real
Peak Hour: AM
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	152	469	104	142	1211	168	127	594	104	68	422	148	3709
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd		4				4	4	4					16
1080 Stewart Dr													
1101 Elko Dr		3						5					8
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real					3						2		5
750 Lakeway Dr													
830 E. El Camino Real			7	5	17	4	5				22		60
840 E El Camino Real					2						1		3
861 E. El Camino Real			9	7	21	5	6				28		76
1050 Kifer Rd	4												4
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way					6						2		8
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						27					51
445 N Mary Ave					5						1		6
589 W. Java Dr		4						17					21
610 N Mary Ave					53						9		62
615 N. Mathilda Ave					10						-4		6
623 N Pastoria Ave					2								2
684 W. Maude Ave					22						4		26
810 W Maude Ave					14						2		16
901 Kifer Rd												4	4
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln					18						20		38
311 S Mathilda Ave					1						3		4
520 Almanor Ave					15						2		17
675 Almanor Avenue													
803 W El Camino Real					2						4		6
871 and 895 E Fremont Ave		3						8					11
223 N Mathilda Ave													
456 W Olive Ave					-11						-4		-15
1008 E El Camino Real					7						3		10
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		11						-7					4
1122 Aster Ave													
1142 Dahlia Ct					4						1		5
160 Persian Dr		1						-1					
370 San Aleso Ave													
1 AMD Place		20						6					26
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					-1								-1
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave		1											1
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd City Place 3226 Scott Blvd 2041 Mission College Blvd 3100-3200 Coronado Dr 1 Great America Pkwy 3375 Scott Blvd 3001 Tasman Dr Santa Clara LSAP 2350 & 2305 Mission College Blvd 3625 Peterson Way 3402 El Camino Real 3045 Stender Way 2931 El Camino Real 2343 Calle Del Mundo		12			9			16			3		28 12
Total Approved Trips	4	88	16	12	199	13	15	95	0	0	99	4	545
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	156	557	120	154	1410	181	142	689	104	68	521	152	4254
Project Trips	0	4	0	0	0	0	0	22	0	0	0	0	26
Existing + Project	152	473	104	142	1211	168	127	616	104	68	422	148	3735
Background + Project	156	561	120	154	1410	181	142	711	104	68	521	152	4280

Traffix Node Number: 1402
Intersection Name: Sunnyvale-Saratoga & Remington Drive
Peak Hour: AM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	98	512	31	65	268	361	257	2376	150	87	298	170	4673
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd			4		25			4			26		59
1080 Stewart Dr													
1101 Elko Dr					3						5		8
1120 Innovation Way		25						34					59
1235 Bordeaux Dr		15						27					42
590 W El Camino Real		2						3					5
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real						4	5						9
840 E El Camino Real													
861 E. El Camino Real						5	6						11
1050 Kifer Rd													
830 W Evelyn Ave		1						1					2
1081 Innovation Way		1						75					76
1111 Lockheed Martin Way		2						8					10
1152 Bordeaux Dr		10			4			49			18		81
1194 N. Mathilda Ave		3						13					16
1230 Oakmead Pkwy													
1260 N Mathilda Ave		1						2					3
215 Moffett Park Dr					1						2		3
265 Sobrante Way		2						9					11
275 N Mathilda Ave		2						8					10
824 San Aleso Ave		36			24			41			27		128
445 N Mary Ave		2						8					10
589 W. Java Dr		6			4			29			17		56
610 N Mary Ave		26						147					173
615 N. Mathilda Ave		-8						24					16
623 N Pastoria Ave								3					3
684 W. Maude Ave		10						72					82
810 W Maude Ave		6						44					50
901 Kifer Rd													
1120 Kifer Rd								-1					-1
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave		3						1					4
520 Almanor Ave		4						25					29
675 Almanor Avenue		2						13					15
803 W El Camino Real		2						1					3
871 and 895 E Fremont Ave		4				3	8	12					27
223 N Mathilda Ave		3						15					18
456 W Olive Ave		-23						-75					-98
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		3			11			-2			-7		5
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr					1						-1		
370 San Aleso Ave		1						-2					-1
1 AMD Place					20						6		26
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		3						-1					2
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave					1								1
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd													
City Place					12						16		28
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	144	4	0	106	12	19	587	0	0	109	0	981
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	98	656	35	65	374	373	276	2963	150	87	407	170	5654
Project Trips	0	0	0	0	0	4	22	0	0	0	0	0	26
Existing + Project	98	512	31	65	268	365	279	2376	150	87	298	170	4699
Background + Project	98	656	35	65	374	377	298	2963	150	87	407	170	5680

Traffix Node Number: 93
Intersection Name: Wolfe Road & Maude Avenue
Peak Hour: AM
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	5	299	2	2	1	2	4	541	185	76	2	11	1130
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr									6	8			14
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		69						11					80
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24							14				38
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave									13	2			15
615 N. Mathilda Ave									1				1
623 N Pastoria Ave													
684 W. Maude Ave									7	1			8
810 W Maude Ave									4	1			5
901 Kifer Rd		9						1					10
1120 Kifer Rd		4						31					35
1155 Aster Ave		6						38					44
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								1	1				2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		1						4					5
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave									-2	2			
1 AMD Place		-4						21	26	-2			41
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2						1		3			6
915 De Guigne Dr		-16						11	20	-22			-7
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		2						5					7
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP								4					4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	119	0	0	0	0	0	227	90	-7	0	0	429
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	5	418	2	2	1	2	4	768	275	69	2	11	1559
Project Trips	0	40	0	0	0	0	0	10	0	0	0	0	50
Existing + Project	5	339	2	2	1	2	4	551	185	76	2	11	1180
Background + Project	5	458	2	2	1	2	4	778	275	69	2	11	1609

Traffix Node Number: 58
Intersection Name: Wolfe Road & Stewart Drive
Peak Hour: AM
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	5	295	99	66	1	66	233	651	4	5	1	4	1430
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr			8	6									14
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		69				14	2	11					96
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						14					38
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave		2						13					15
615 N. Mathilda Ave								1					1
623 N Pastoria Ave													
684 W. Maude Ave		1						7					8
810 W Maude Ave		1						4					5
901 Kifer Rd		9				2		1					12
1120 Kifer Rd		4						31					35
1155 Aster Ave		6				2	2	38					48
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		1						4					5
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		2						-2					
1 AMD Place			-6	47		22	2						65
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		5						1					6
915 De Guigne Dr			-38	31		6	-10						-11
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		2						5					7
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr							3						3
Santa Clara LSAP								4					4
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	148	-36	84	0	46	-1	233	0	0	0	0	474
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	5	443	63	150	1	112	232	884	4	5	1	4	1904
Project Trips	0	40	0	0	0	0	0	10	0	0	0	0	50
Existing + Project	5	335	99	66	1	66	233	661	4	5	1	4	1480
Background + Project	5	483	63	150	1	112	232	894	4	5	1	4	1954

Traffix Node Number: 43
Intersection Name: Wolfe Road & Arques Avenue
Peak Hour: AM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	27	233	92	85	165	91	270	823	21	10	176	64	2057
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr					2						2		4
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		83						13					96
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy											1		1
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						14					38
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave		2						13					15
615 N. Mathilda Ave								1					1
623 N Pastoria Ave													
684 W. Maude Ave		1						7					8
810 W Maude Ave		1						4					5
901 Kifer Rd		11						1					12
1120 Kifer Rd		4						31					35
1155 Aster Ave		8				2	2	40					52
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		1						4					5
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		1	1	-1				-1					
1 AMD Place		22			12	10		2			-5		41
617 E. Evelyn Ave						1	3						4
625 E. Taylor Ave					-1						1		
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		4	1					1			1		7
915 De Guigne Dr		6				3	-3	-10					-4
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					2						8		10
4301, 4401, 4551 Great America Pkwy					1						8		9
2620-2727 Augustine Dr					17						-11		6
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave											7		7
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		2			14			5			9		30
3226 Scott Blvd					1						5		6
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr					1						5		6
1 Great America Pkwy													
3375 Scott Blvd					1						4		5
3001 Tasman Dr								3					3
Santa Clara LSAP					17			4					21
2350 & 2305 Mission College Blvd					2						8		10
3625 Peterson Way					1						8		9
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	192	2	-1	71	16	2	233	0	0	52	0	567
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	27	425	94	84	236	107	272	1056	21	10	228	64	2624
Project Trips	0	40	0	0	0	0	0	10	0	0	0	0	50
Existing + Project	27	273	92	85	165	91	270	833	21	10	176	64	2107
Background + Project	27	465	94	84	236	107	272	1066	21	10	228	64	2674

Traffix Node Number: 97
Intersection Name: Wolfe Road & Central Expressway Ramps
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	229	362	29	98	2	123	458	1222	176	138	0	134	2971
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		83						13	4	23			123
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		12	12					14	14	12			64
445 N Mary Ave									6	1			7
589 W. Java Dr													
610 N Mary Ave		2						13					15
615 N. Mathilda Ave								1					1
623 N Pastoria Ave									2				2
684 W. Maude Ave		1						7					8
810 W Maude Ave		1						4					5
901 Kifer Rd		11						1	1				13
1120 Kifer Rd		4					12	31	13				60
1155 Aster Ave		11						43	15	2			71
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		1				1	3	4	3	1			13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave		2						6					8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		1						-1	-2	1			-1
1 AMD Place	7	17	8	1				1					34
617 E. Evelyn Ave		1						3					4
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		4						1					5
915 De Guigne Dr	3	5						-6				-7	-5
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy						10	1						11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd									1	6			7
City Place		2						5					7
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr								3					3
Santa Clara LSAP								4	16				20
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	10	178	20	1	0	11	16	242	73	46	0	-7	590
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	239	540	49	99	2	134	474	1464	249	184	0	127	3561
Project Trips	0	40	0	0	0	0	0	10	5	0	0	0	55
Existing + Project	229	402	29	98	2	123	458	1232	181	138	0	134	3026
Background + Project	239	580	49	99	2	134	474	1474	254	184	0	127	3616

Traffix Node Number: 44
Intersection Name: Wolfe Road & Kifer Road
Peak Hour: AM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	90	336	101	51	244	41	275	1882	114	30	142	29	3335
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		106		17	9	7	46				32		217
830 W Evelyn Ave													
1081 Innovation Way	1							53					54
1111 Lockheed Martin Way	4							14					18
1152 Bordeaux Dr	4							18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr	1							2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave	24							28					52
445 N Mary Ave	1							6					7
589 W. Java Dr													
610 N Mary Ave	2							13					15
615 N. Mathilda Ave								1					1
623 N Pastoria Ave								2					2
684 W. Maude Ave	1							7					8
810 W Maude Ave	1							4					5
901 Kifer Rd		11	2		1	6					4		24
1120 Kifer Rd		2	58		36	-4							92
1155 Aster Ave	13							58					71
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave	3				1	2		9					15
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr	6							-4					2
1122 Aster Ave	2							6					8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave	1	1	-1					-2					-1
1 AMD Place	17				-1	-6	1						11
617 E. Evelyn Ave	1							3					4
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave	3	1						1			1		6
915 De Guigne Dr	5							-6					-1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy	10							1					11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St											4		4
5010 Old Ironsides Dr													
3000 Bowers Ave					1								1
3700 El Camino Real	4							10					14
2950 Lakeside Dr													

3607 Kifer Rd			6	1	1	2	16				5		31
City Place		2			17			5			8		32
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr								3					3
Santa Clara LSAP				20		21	-1						40
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	106	127	97	28	67	59	235	0	0	54	0	773
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	90	442	228	148	272	108	334	2117	114	30	196	29	4108
Project Trips	0	0	40	15	16	6	32	0	0	0	59	0	168
Existing + Project	90	336	141	66	260	47	307	1882	114	30	201	29	3503
Background + Project	90	442	268	163	288	114	366	2117	114	30	255	29	4276

Traffix Node Number: 64
Intersection Name: Wolfe Road & Evelyn Avenue
Peak Hour: AM
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	33	374	46	363	282	64	24	1757	65	100	105	70	3283
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		5	2	14				32					53
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						28					52
445 N Mary Ave		1			1			6					8
589 W. Java Dr													
610 N Mary Ave		2			10			13			2		27
615 N. Mathilda Ave								1					1
623 N Pastoria Ave								2					2
684 W. Maude Ave		1			2			7					10
810 W Maude Ave		1			1			4					6
901 Kifer Rd		1						6					7
1120 Kifer Rd	17	19						-3				-1	32
1155 Aster Ave			13	58	8						1		80
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave					1			2					3
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		4						11					15
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave			2	6									8
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		1						-2					-1
1 AMD Place		16						-5					11
617 E. Evelyn Ave	1									1		3	5
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		3						1					4
915 De Guigne Dr		5						-6					-1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		10						1					11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd	1	1						11				5	18
City Place		2			18			5			8		33
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr								3					3
Santa Clara LSAP		21						-1					20
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	19	137	17	78	41	0	0	209	0	1	11	7	520
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	52	511	63	441	323	64	24	1966	65	101	116	77	3803
Project Trips	0	6	0	0	0	0	0	32	0	0	0	0	38
Existing + Project	33	380	46	363	282	64	24	1789	65	100	105	70	3321
Background + Project	52	517	63	441	323	64	24	1998	65	101	116	77	3841

Traffix Node Number: 45
Intersection Name: Wolfe Road & Reed Avenue
Peak Hour: AM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	80	398	27	90	329	100	61	1511	83	43	232	120	3074
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		5						32					37
830 W Evelyn Ave													
1081 Innovation Way		1						53					54
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						18					22
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		1						2					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		24						28					52
445 N Mary Ave		1						6					7
589 W. Java Dr													
610 N Mary Ave		2						13					15
615 N. Mathilda Ave								1					1
623 N Pastoria Ave								2					2
684 W. Maude Ave		1						7					8
810 W Maude Ave		1						4					5
901 Kifer Rd		1						6					7
1120 Kifer Rd		19										-4	15
1155 Aster Ave					15	30	25				2		72
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		4						11					15
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr		6						-4					2
1122 Aster Ave													
1142 Dahlia Ct					6						3		9
160 Persian Dr													
370 San Aleso Ave		1						-2					-1
1 AMD Place		16						-5					11
617 E. Evelyn Ave		1											1
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		3						1					4
915 De Guigne Dr		5						-6					-1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					2						8		10
4301, 4401, 4551 Great America Pkwy	10				6						1	1	18
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					2						16		18
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		4						10					14
2950 Lakeside Dr													

3607 Kifer Rd	1	1			1	1	5	5			5	5	24
City Place		2						5					7
3226 Scott Blvd													
2041 Mission College Blvd											1		1
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr								3					3
Santa Clara LSAP	5	15			2			-1					21
2350 & 2305 Mission College Blvd					2						8		10
3625 Peterson Way					1						8		9
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	16	122	0	0	37	31	30	205	0	0	52	2	495
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	96	520	27	90	366	131	91	1716	83	43	284	122	3569
Project Trips	0	3	3	16	0	0	0	16	0	0	0	0	38
Existing + Project	80	401	30	106	329	100	61	1527	83	43	232	120	3112
Background + Project	96	523	30	106	366	131	91	1732	83	43	284	122	3607

Traffix Node Number: 98
Intersection Name: Commercial Street & Kifer Road
Peak Hour: AM
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	21	0	69	55	418	0	0	0	0	0	375	26	964
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd			24		33						184		241
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd	3		3	35								22	63
1120 Kifer Rd					94						-2		92
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave					1						2		3
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					-1						1		
1 AMD Place					-1						-6		-7
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					1						2		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St											4		4

5010 Old Ironsides Dr													
3000 Bowers Ave					1								1
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					4						28		32
City Place					17						8		25
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					40						-1		39
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	3	0	27	35	189	0	0	0	0	0	220	22	496
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	24	0	96	90	607	0	0	0	0	0	595	48	1460
Project Trips	0	26	28	1	4	171	46	9	33	64	68	0	450
Driveway Volume Reduction	0	0	0	0	0	0	1	0	0	0	0	0	
Existing + Project	21	26	97	56	422	171	46	9	33	64	443	26	1414
Background + Project	24	26	124	91	611	171	46	9	33	64	663	48	1910
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 67
Intersection Name: Lawrence Expressw & US 101 NB Ramps
Peak Hour: AM
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	371	1618	0	652	0	626	484	2226	0	0	0	0	5977
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr						11	4						15
1101 Elko Dr	2	3		5				11					21
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4					3	3					10
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		46				69		7					122
830 W Evelyn Ave													
1081 Innovation Way							15						15
1111 Lockheed Martin Way		7						23					30
1152 Bordeaux Dr		12						47					59
1194 N. Mathilda Ave		2						11					13
1230 Oakmead Pkwy		1					1						2
1260 N Mathilda Ave								1					1
215 Moffett Park Dr		6		6				9					21
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		5						25					30
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		4				6	1						11
1120 Kifer Rd							16	35					51
1155 Aster Ave		3				2		23					28
1250 Lakeside Dr		30				18	39	39					126
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave	2												2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		2				1		5					8
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		1						2					3
1142 Dahlia Ct		1				2		4					7
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		-12				10		39					37
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr		-15				-30		13					-32
5402 & 5450 Great America Pkwy		3						24					27
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		1						7					8
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		14						2					16
5010 Old Ironsides Dr		21						190					211
3000 Bowers Ave		7						1					8
3700 El Camino Real		12						31					43

2950 Lakeside Dr		8						7					15
3607 Kifer Rd		17				43	6	2					68
City Place	6	6		5		8	11	197					233
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy						1							1
3375 Scott Blvd		8						6					14
3001 Tasman Dr		3						20					23
Santa Clara LSAP		-1					74	26					99
2350 & 2305 Mission College Blvd													
3625 Peterson Way		15					11	2					28
3402 El Camino Real							5						5
3045 Stender Way													
2931 El Camino Real		5					6	5					16
2343 Calle Del Mundo													
Total Approved Trips	10	219	0	16	0	141	192	817	0	0	0	0	1395
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	381	1837	0	668	0	767	676	3043	0	0	0	0	7372
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	54	0	0	0	40	0	10	0	0	0	0	104
Existing + Project	371	1672	0	652	0	666	484	2236	0	0	0	0	6081
Background + Project	381	1891	0	668	0	807	676	3053	0	0	0	0	7476
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 68
Intersection Name: Lawrence Expressw & US 101 SB Ramps
Peak Hour: AM
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	334	1896	0	0	0	0	584	2738	0	486	0	252	6290
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		11					3	4		11			29
1101 Elko Dr	3							11					14
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4						6		4			14
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		115					11	7					133
830 W Evelyn Ave													
1081 Innovation Way								15					15
1111 Lockheed Martin Way		7						23					30
1152 Bordeaux Dr		12						56					68
1194 N. Mathilda Ave		2						11					13
1230 Oakmead Pkwy		1						1		4			6
1260 N Mathilda Ave								1					1
215 Moffett Park Dr		4						9					13
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		5						25					30
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		10					1	1		6			18
1120 Kifer Rd		-17					16	51		-4			46
1155 Aster Ave		6					15	23					44
1250 Lakeside Dr		47					23	77		30			177
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3					2	5					10
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		1						2					3
1142 Dahlia Ct		3					4	8		2			17
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		-2					83	60		-2			139
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr		-45					27	13					-5
5402 & 5450 Great America Pkwy		3						24					27
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		1						7					8
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		14						2					16
5010 Old Ironsides Dr		21						152				38	211
3000 Bowers Ave		7						1					8
3700 El Camino Real		12						31					43

2950 Lakeside Dr		8						7					15
3607 Kifer Rd		60					6	8		43			117
City Place	3	2					4	70		6		83	168
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy		1					2						3
3375 Scott Blvd		41						6					47
3001 Tasman Dr		3						20					23
Santa Clara LSAP		-1						100		-4			95
2350 & 2305 Mission College Blvd													
3625 Peterson Way		15						13		63			91
3402 El Camino Real								5		2			7
3045 Stender Way													
2931 El Camino Real		5						11		8			24
2343 Calle Del Mundo													
Total Approved Trips	6	359	0	0	0	0	197	866	0	169	0	121	1718
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	340	2255	0	0	0	0	781	3604	0	655	0	373	8008
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	94	0	0	0	0	0	17	0	40	0	0	151
Existing + Project	334	1990	0	0	0	0	584	2755	0	526	0	252	6441
Background + Project	340	2349	0	0	0	0	781	3621	0	695	0	373	8159
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 49
Intersection Name: Lawrence Expressw & Oakmead Parkway
Peak Hour: AM
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	585	1722	265	249	183	79	26	2636	199	196	110	420	6670
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr	22									5		7	34
1101 Elko Dr								11					11
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr			8	6	2	4	6				2		28
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		115						18					133
830 W Evelyn Ave													
1081 Innovation Way								15					15
1111 Lockheed Martin Way		7						23					30
1152 Bordeaux Dr		12						56					68
1194 N. Mathilda Ave		2						11					13
1230 Oakmead Pkwy			5	1		1	5						12
1260 N Mathilda Ave								1					1
215 Moffett Park Dr		4						9					13
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		5						25					30
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		16						2					18
1120 Kifer Rd		-21						68					47
1155 Aster Ave		6						38					44
1250 Lakeside Dr			77	100		48	37						262
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave									1				1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						7					10
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		1						2					3
1142 Dahlia Ct		5						12					17
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place	-6	2			-4			18	-3	56	4	126	193
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave										2			2
915 De Guigne Dr	-30	-15			-4			4	-9	8	3	36	-7
5402 & 5450 Great America Pkwy		3						24					27
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy	1								1	8		7	17
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		14						2					16
5010 Old Ironsides Dr	2	17	2	13				126				13	173
3000 Bowers Ave		7						1					8
3700 El Camino Real		12						31					43
2950 Lakeside Dr			8	7									15

3607 Kifer Rd		103						14					117
City Place	5		4	6	9	2	9	91	1	4	1	17	149
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy	1											2	3
3375 Scott Blvd		14	27	4				2					47
3001 Tasman Dr	1	2						14				6	23
Santa Clara LSAP		-4						100					96
2350 & 2305 Mission College Blvd													
3625 Peterson Way		23	54	9	1			4			8		99
3402 El Camino Real		2						5					7
3045 Stender Way													
2931 El Camino Real		13						11					24
2343 Calle Del Mundo													
Total Approved Trips	-4	348	185	146	4	55	57	745	-9	83	18	214	1842
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	581	2070	450	395	187	134	83	3381	190	279	128	634	8512
Project Trips	0	135	0	0	0	0	0	24	0	16	0	0	175
Existing + Project	585	1857	265	249	183	79	26	2660	199	212	110	420	6845
Background + Project	581	2205	450	395	187	134	83	3405	190	295	128	634	8687

Traffix Node Number: 5611
Intersection Name: Lawrence Expressw & Arques Avenue
Peak Hour: AM
Count Date: 04/04/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	0.87	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	1.00	1.00	
Existing Conditions	314	1364	91	73	346	120	315	2978	327	157	140	135	6360
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		5							11				16
1101 Elko Dr								11					11
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4			2			6			2		14
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		115						18					133
830 W Evelyn Ave													
1081 Innovation Way								15					15
1111 Lockheed Martin Way		4	2	8				14					28
1152 Bordeaux Dr		7	4	21				35					67
1194 N. Mathilda Ave		2						11					13
1230 Oakmead Pkwy		1						4				1	6
1260 N Mathilda Ave								1					1
215 Moffett Park Dr		4						9					13
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		5						25					30
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		16						2					18
1120 Kifer Rd		-21						68					47
1155 Aster Ave		6						38					44
1250 Lakeside Dr		48				10	7	37					102
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								1					1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		3						7					10
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		1						2					3
1142 Dahlia Ct		5						12					17
160 Persian Dr													
370 San Aleso Ave					-1						1		
1 AMD Place	2	32	24	1	-1			-4		10	14	18	96
617 E. Evelyn Ave													
625 E. Taylor Ave					-1						1		
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2			1						2		5
915 De Guigne Dr	-15	8			-4			-9	-4	13	3	4	-4
5402 & 5450 Great America Pkwy		3						24					27
2350 & 2305 Mission College Blvd					2						8		10
4301, 4401, 4551 Great America Pkwy			8	1	1	2	12				8		32
2620-2727 Augustine Dr					17	40	-26				-11		20
2600, 2800 San Tomas Expy & 2400 Condensa St		15						2					17

5010 Old Ironsides Dr		17						126					143
3000 Bowers Ave		7						1			7		15
3700 El Camino Real		12						31					43
2950 Lakeside Dr						9	11						20
3607 Kifer Rd		103						14					117
City Place	4	9	9	5	1	9	6	9	6	1	8	4	71
3226 Scott Blvd					1						5		6
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr					1						5		6
1 Great America Pkwy						1	1						2
3375 Scott Blvd			14	2	1	3	19				4		43
3001 Tasman Dr		2					1	14					17
Santa Clara LSAP		-4						100	17				113
2350 & 2305 Mission College Blvd					2						8		10
3625 Peterson Way			23	4	1	6	33				8		75
3402 El Camino Real		2						5					7
3045 Stender Way							1						1
2931 El Camino Real		13						11					24
2343 Calle Del Mundo													
Total Approved Trips	-9	426	84	42	24	80	65	640	30	24	74	27	1507
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	305	1790	175	115	370	200	380	3618	357	181	214	162	7867
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	151	0	0	0	0	0	24	0	0	0	0	175
Existing + Project	314	1515	91	73	346	120	315	3002	327	157	140	135	6535
Background + Project	305	1941	175	115	370	200	380	3642	357	181	214	162	8042

Traffix Node Number: 51
Intersection Name: Lawrence Expressw & Kifer Road
Peak Hour: AM
Count Date: 03/07/18
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	450	1134	176	238	345	70	374	3877	238	116	141	115	7274
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		5						11					16
1101 Elko Dr								11					11
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4						6					10
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd	87		74		9		38		45	13	1	26	293
830 W Evelyn Ave													
1081 Innovation Way								15					15
1111 Lockheed Martin Way		4						14					18
1152 Bordeaux Dr		4						21					25
1194 N. Mathilda Ave		2						11					13
1230 Oakmead Pkwy		1						3					4
1260 N Mathilda Ave								1					1
215 Moffett Park Dr		4						9					13
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave		1						6					7
589 W. Java Dr		5						25					30
610 N Mary Ave		12						70					82
615 N. Mathilda Ave		-5						13					8
623 N Pastoria Ave								2					2
684 W. Maude Ave		6						42					48
810 W Maude Ave		4						26					30
901 Kifer Rd	22				1				11	1		2	37
1120 Kifer Rd	-18					-12	-26		3	10		78	35
1155 Aster Ave		11						46					57

1250 Lakeside Dr		39						30						69
2502 Town Center Ln														
311 S Mathilda Ave														
520 Almanor Ave		1						8						9
675 Almanor Avenue														
803 W El Camino Real														
871 and 895 E Fremont Ave		3						7						10
223 N Mathilda Ave														
456 W Olive Ave														
1008 E El Camino Real														
1023 N Fair Oaks Ave														
1111, 1139 Karlstad Dr														
1122 Aster Ave		1						2						3
1142 Dahlia Ct		5						12						17
160 Persian Dr														
370 San Aleso Ave		1			-1			-2			1			-1
1 AMD Place	-1	25						1				-6		19
617 E. Evelyn Ave														
625 E. Taylor Ave														
669 Old San Francisco Rd														
728, 740, 750, 760, and 814 San Aleso Ave		3			1						2			6
915 De Guigne Dr		21						-13						8
5402 & 5450 Great America Pkwy		3						24						27
2350 & 2305 Mission College Blvd		3						16						19
4301, 4401, 4551 Great America Pkwy		4				2	12	29						47
2620-2727 Augustine Dr		40						-26						14
2600, 2800 San Tomas Expy & 2400 Condensa St		2	2			1	6	33			2	2		48
5010 Old Ironsides Dr		17						126						143
3000 Bowers Ave				2	1	2	14							19
3700 El Camino Real		12						31						43
2950 Lakeside Dr		9						11						20
3607 Kifer Rd	133				17				36	5	3	16		210
City Place	7	1	1	3	9	9	2	6	1	8				47
3226 Scott Blvd														
2041 Mission College Blvd		2					1	3						6
3100-3200 Coronado Dr														
1 Great America Pkwy		2						2						4
3375 Scott Blvd		3						24						27
3001 Tasman Dr		1						9						10
Santa Clara LSAP			4	88	40	37	-2				-2			165
2350 & 2305 Mission College Blvd		3						16						19
3625 Peterson Way		8						46						54
3402 El Camino Real		2						5						7
3045 Stender Way								1						1
2931 El Camino Real		13						11						24
2343 Calle Del Mundo														
Total Approved Trips	230	282	81	93	77	39	45	744	96	37	7	118		1849
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
Background Conditions	680	1416	257	331	422	109	419	4621	334	153	148	233		9123
Project Trips	205	0	0	0	51	0	0	0	97	18	9	24		404
Existing + Project	655	1134	176	238	396	70	374	3877	335	134	150	139		7678
Background + Project	885	1416	257	331	473	109	419	4621	431	171	157	257		9527

Traffix Node Number: 5613
Intersection Name: Lawrence Expressw & Monroe Street
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 03/07/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	0.87	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	1.00	1.00	
Existing Conditions	199	1081	90	501	310	235	104	3879	99	215	176	408	7297
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Approved Project Trips														
1040 Sunnyvale-Saratoga Rd														
1080 Stewart Dr		5						11						16
1101 Elko Dr								11						11
1120 Innovation Way														

1235 Bordeaux Dr														
590 W El Camino Real														
696 W El Camino Real														
750 Lakeway Dr		4						6						10
830 E. El Camino Real														
840 E El Camino Real														
861 E. El Camino Real														
1050 Kifer Rd		13						83						96
830 W Evelyn Ave														
1081 Innovation Way								15						15
1111 Lockheed Martin Way		4						14						18
1152 Bordeaux Dr		4						21						25
1194 N. Mathilda Ave		2						11						13
1230 Oakmead Pkwy		1						3						4
1260 N Mathilda Ave								1						1
215 Moffett Park Dr		4						9						13
265 Sobrante Way														
275 N Mathilda Ave														
824 San Aleso Ave														
445 N Mary Ave		1			1			6						8
589 W. Java Dr		5						25						30
610 N Mary Ave		12	1	4	10			66			2			95
615 N. Mathilda Ave		-4	-1	2				11						8
623 N Pastoria Ave								2						2
684 W. Maude Ave		5	1	5	2			37						50
810 W Maude Ave		3	1	3	1			23						31
901 Kifer Rd		1						11						12
1120 Kifer Rd		5						-23						-18
1155 Aster Ave	11				7				3		23	17	46	107
1250 Lakeside Dr		39						30						69
2502 Town Center Ln														
311 S Mathilda Ave														
520 Almanor Ave		1		2	1			6						10
675 Almanor Avenue														
803 W El Camino Real														
871 and 895 E Fremont Ave		3						7						10
223 N Mathilda Ave														
456 W Olive Ave														
1008 E El Camino Real														
1023 N Fair Oaks Ave														
1111, 1139 Karlstad Dr														
1122 Aster Ave	1									1			2	4
1142 Dahlia Ct	5				1			1				2	11	20
160 Persian Dr														
370 San Aleso Ave		1						-2						-1
1 AMD Place		25						1						26
617 E. Evelyn Ave														
625 E. Taylor Ave														
669 Old San Francisco Rd														
728, 740, 750, 760, and 814 San Aleso Ave		3												3
915 De Guigne Dr		21						-13						8
5402 & 5450 Great America Pkwy		3						24						27
2350 & 2305 Mission College Blvd		3			2			16			8			29
4301, 4401, 4551 Great America Pkwy		6			6			41			1			54
2620-2727 Augustine Dr		40						-26						14
2600, 2800 San Tomas Expy & 2400 Condensa St		3			2			39			16			60
5010 Old Ironsides Dr		17						126						143
3000 Bowers Ave		2						14						16
3700 El Camino Real		12						31						43
2950 Lakeside Dr		9						11						20
3607 Kifer Rd	1	3	1	4				21					11	41
City Place		4	9	11	4	5	9	148	2		5	6	29	232
3226 Scott Blvd														
2041 Mission College Blvd		2						3				1		6
3100-3200 Coronado Dr														
1 Great America Pkwy		2						2						4
3375 Scott Blvd		3						24						27
3001 Tasman Dr		1						9						10
Santa Clara LSAP	2	36						-2						36
2350 & 2305 Mission College Blvd		3			2			16			8			29
3625 Peterson Way	1	6						38					8	53
3402 El Camino Real		2						5						7
3045 Stender Way								1						1
2931 El Camino Real		13						11						24
2343 Calle Del Mundo														
Total Approved Trips	21	328	12	31	39	5	9	925	5		29	61	107	1572

Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	220	1409	102	532	349	240	113	4804	104	244	237	515	8869
Project Trips	0	18	0	0	0	0	0	97	0	0	0	0	115
Existing + Project	199	1099	90	501	310	235	104	3976	99	215	176	408	7412
Background + Project	220	1427	102	532	349	240	113	4901	104	244	237	515	8984

Traffix Node Number: 5325
Intersection Name: Oakmead Parkway & Central Expressway
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	83	19	27	261	2147	52	39	86	114	112	1571	289	4800
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr	1		2	3								1	7
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					46						8		54
830 W Evelyn Ave					1						1		2
1081 Innovation Way													
1111 Lockheed Martin Way					6						2		8
1152 Bordeaux Dr					28						6		34
1194 N. Mathilda Ave					9						2		11
1230 Oakmead Pkwy				2				1					3
1260 N Mathilda Ave					1								1
215 Moffett Park Dr					2						1		3
265 Sobrante Way					55						10		65
275 N Mathilda Ave					5						1		6
824 San Aleso Ave					27						24		51
445 N Mary Ave					16						3		19
589 W. Java Dr													
610 N Mary Ave					187						33		220
615 N. Mathilda Ave					31						-11		20
623 N Pastoria Ave					6						1		7
684 W. Maude Ave					91						13		104
810 W Maude Ave					56						8		64
901 Kifer Rd					6						1		7
1120 Kifer Rd					3						10		13
1155 Aster Ave					5						8		13
1250 Lakeside Dr			19	15									34
2502 Town Center Ln					18						20		38
311 S Mathilda Ave					1						3		4
520 Almanor Ave					32						5		37
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave					1						3		4
223 N Mathilda Ave					10						2		12
456 W Olive Ave					-13						-4		-17
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place			2	-4	3						19		20
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr			3	-4									-1

5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					7						36		43
4301, 4401, 4551 Great America Pkwy					6						41		47
2620-2727 Augustine Dr					56						-37		19
2600, 2800 San Tomas Expy & 2400 Condensa St			2		14						131		147
5010 Old Ironsides Dr	3				15						114	25	157
3000 Bowers Ave			3		2				1		37		43
3700 El Camino Real													
2950 Lakeside Dr	4											5	9
3607 Kifer Rd					21		1				2		24
City Place					11						10		21
3226 Scott Blvd													
2041 Mission College Blvd					4						6		10
3100-3200 Coronado Dr					2						14		16
1 Great America Pkwy					2						3		5
3375 Scott Blvd	3											19	22
3001 Tasman Dr													
Santa Clara LSAP		-2				-3	9	6			46	44	100
2350 & 2305 Mission College Blvd					7						36		43
3625 Peterson Way	6											33	39
3402 El Camino Real													
3045 Stender Way					2						1		3
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	17	-2	31	12	782	-3	10	7	1	0	609	127	1591
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	100	17	58	273	2929	49	49	93	115	112	2180	416	6391
Project Trips	0	0	0	0	54	0	0	0	0	0	10	0	64
Existing + Project	83	19	27	261	2201	52	39	86	114	112	1581	289	4864
Background + Project	100	17	58	273	2983	49	49	93	115	112	2190	416	6455

Traffix Node Number: 85
Intersection Name: Corvin Drive & Kifer Road
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	77	0	53	188	784	0	0	0	0	0	303	56	1461
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					9						1		10
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy				1									1
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													

615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd					1								1
1120 Kifer Rd					-12						-26		-38
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					-1						1		
1 AMD Place													
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					1						2		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy					2						12		14
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					1						10		11
5010 Old Ironsides Dr													
3000 Bowers Ave	7		8	37								27	79
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					17						3	1	21
City Place					21						3		24
3226 Scott Blvd													
2041 Mission College Blvd											1		1
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP	3		2		-3						68	9	79
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	10	0	10	38	36	0	0	0	0	0	75	37	206
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	87	0	63	226	820	0	0	0	0	0	378	93	1667
Project Trips	0	0	0	0	51	0	0	0	0	0	9	0	60
Existing + Project	77	0	53	188	835	0	0	0	0	0	312	56	1521
Background + Project	87	0	63	226	871	0	0	0	0	0	387	93	1727

Traffix Node Number: 5329
Intersection Name: Bowers Avenue & Central Expressway
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	129	309	59	137	2046	127	123	826	266	67	1153	369	5611

Approved Project Trips
1040 Sunnyvale-Saratoga Rd

1080 Stewart Dr														
1101 Elko Dr														
1120 Innovation Way														
1235 Bordeaux Dr														
590 W El Camino Real														
696 W El Camino Real														
750 Lakeway Dr					3						2		5	
830 E. El Camino Real														
840 E El Camino Real														
861 E. El Camino Real														
1050 Kifer Rd					46						8		54	
830 W Evelyn Ave					1						1		2	
1081 Innovation Way														
1111 Lockheed Martin Way					6						2		8	
1152 Bordeaux Dr					28						6		34	
1194 N. Mathilda Ave					9						2		11	
1230 Oakmead Pkwy					2								2	
1260 N Mathilda Ave					1								1	
215 Moffett Park Dr					2						1		3	
265 Sobrante Way					55						10		65	
275 N Mathilda Ave					5						1		6	
824 San Aleso Ave					27						24		51	
445 N Mary Ave					16						3		19	
589 W. Java Dr														
610 N Mary Ave					187						33		220	
615 N. Mathilda Ave					31						-11		20	
623 N Pastoria Ave					6						1		7	
684 W. Maude Ave					91						13		104	
810 W Maude Ave					56						8		64	
901 Kifer Rd					6						1		7	
1120 Kifer Rd					3						10		13	
1155 Aster Ave					5						8		13	
1250 Lakeside Dr					15						19		34	
2502 Town Center Ln					18						20		38	
311 S Mathilda Ave					1						3		4	
520 Almanor Ave					32						5		37	
675 Almanor Avenue														
803 W El Camino Real														
871 and 895 E Fremont Ave					1						3		4	
223 N Mathilda Ave					10						2		12	
456 W Olive Ave					-13						-4		-17	
1008 E El Camino Real														
1023 N Fair Oaks Ave														
1111, 1139 Karlstad Dr														
1122 Aster Ave														
1142 Dahlia Ct														
160 Persian Dr														
370 San Aleso Ave														
1 AMD Place		8						-1			20		27	
617 E. Evelyn Ave														
625 E. Taylor Ave														
669 Old San Francisco Rd														
728, 740, 750, 760, and 814 San Aleso Ave														
915 De Guigne Dr					-4						3		-1	
5402 & 5450 Great America Pkwy		3						24					27	
2350 & 2305 Mission College Blvd	7	3						16				36	62	
4301, 4401, 4551 Great America Pkwy	6	7	2	16				53				41	125	
2620-2727 Augustine Dr	56	28						-18				-37	29	
2600, 2800 San Tomas Expy & 2400 Condensa St		17	29	2	12		7	3	3		133		206	
5010 Old Ironsides Dr	15	20	22	158				145				114	474	
3000 Bowers Ave		140				70	1	14			5	7	237	
3700 El Camino Real														
2950 Lakeside Dr			3	4									7	
3607 Kifer Rd					21		1				2		24	
City Place	6	2	5	30	2	9	9	47	3	3	3	4	123	
3226 Scott Blvd								24					24	
2041 Mission College Blvd		1			4			1			5	1	12	
3100-3200 Coronado Dr					2	4		32				14	52	
1 Great America Pkwy	2	2	1	1				2				3	11	
3375 Scott Blvd		1			17			3	3				24	
3001 Tasman Dr		2		1				12					15	
Santa Clara LSAP	-1	-1			-2		4	17			45	11	73	
2350 & 2305 Mission College Blvd	7	3						16				36	62	
3625 Peterson Way		2		27				13					42	
3402 El Camino Real														
3045 Stender Way					2							1	3	

2931 El Camino Real		10						9					19
2343 Calle Del Mundo		2											2
Total Approved Trips	98	250	62	239	704	83	22	412	9	3	387	231	2500
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	227	559	121	376	2750	210	145	1238	275	70	1540	600	8111
Project Trips	0	0	0	0	54	0	0	0	0	0	10	0	64
Existing + Project	129	309	59	137	2100	127	123	826	266	67	1163	369	5675
Background + Project	227	559	121	376	2804	210	145	1238	275	70	1550	600	8175

Traffix Node Number: 84
Intersection Name: Bowers Avenue & Kifer Road
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	196	255	66	148	699	44	84	847	201	29	99	122	2790
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					9						1		10
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy									1				1
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd					1								1
1120 Kifer Rd					-12						-26		-38
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													

370 San Aleso Ave													
1 AMD Place		8						-1					7
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					1						2		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy		3						24					27
2350 & 2305 Mission College Blvd		3						16					19
4301, 4401, 4551 Great America Pkwy	2	6						41				12	61
2620-2727 Augustine Dr		28						-18					10
2600, 2800 San Tomas Expy & 2400 Condensa St			17	6	1	3	20	7			10		64
5010 Old Ironsides Dr		20						145					165
3000 Bowers Ave		4	7		10				47	2	3	9	82
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					11				6	1	1	1	20
City Place	7	1	2	8	3	6		43	4	6	6	2	88
3226 Scott Blvd								24					24
2041 Mission College Blvd								1				1	2
3100-3200 Coronado Dr		4						32					36
1 Great America Pkwy		2						2					4
3375 Scott Blvd		1						6					7
3001 Tasman Dr		1		3				9					13
Santa Clara LSAP	-1				-1				-2	30	19	21	66
2350 & 2305 Mission College Blvd		3						16					19
3625 Peterson Way		2						13					15
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real		10						9					19
2343 Calle Del Mundo		2											2
Total Approved Trips	8	98	26	17	23	9	20	369	56	39	16	46	727
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	204	353	92	165	722	53	104	1216	257	68	115	168	3517
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	0	0	0	51	0	0	0	0	0	9	0	60
Existing + Project	196	255	66	148	750	44	84	847	201	29	108	122	2850
Background + Project	204	353	92	165	773	53	104	1216	257	68	124	168	3577

Traffix Node Number: 99
Intersection Name: Semiconductor Drive & Kifer Road
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 09/11/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	6	0	17	86	771	4	6	0	0	0	453	23	1366
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					141						34		175
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													

824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd					35						3		38
1120 Kifer Rd					4	23	42		100	14			183
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					-1						1		
1 AMD Place					-1						-6		-7
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					1						2		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St											4		4
5010 Old Ironsides Dr													
3000 Bowers Ave					1								1
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd	4		17	19	1						3	25	69
City Place					17						8		25
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					40						-1		39
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	4	0	17	19	238	23	42	0	100	14	48	25	530
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	10	0	34	105	1009	27	48	0	100	14	501	48	1896
Project Trips	0	0	0	0	353	0	0	0	0	0	51	0	404
Existing + Project	6	0	17	86	1124	4	6	0	0	0	504	23	1770
Background + Project	10	0	34	105	1362	27	48	0	100	14	552	48	2300

Traffix Node Number: 100
Intersection Name: 1020 Kifer Rd Driveway & Kifer Road
Peak Hour: AM
Date of Analysis: 10/17/19
Count Date: 01/00/00
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*

Existing Conditions	0	0	0	0	473	0	0	0	0	0	444	0	917
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd						181	14		34	172			401
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd					94						-2		92
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					-1						1		
1 AMD Place					-1						-6		-7
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					1						2		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St											4		4
5010 Old Ironsides Dr													
3000 Bowers Ave					1								1
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					4						28		32
City Place					17						8		25
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					40						-1		39

2350 & 2305 Mission College Blvd 3625 Peterson Way 3402 El Camino Real 3045 Stender Way 2931 El Camino Real 2343 Calle Del Mundo													
Total Approved Trips	0	0	0	0	155	181	14	0	34	172	34	0	590
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	0	0	0	0	628	181	14	0	34	172	478	0	1507
Project Trips	27	0	30	229	124	0	0	0	0	0	22	120	552
Existing + Project	27	0	30	229	597	0	0	0	0	0	466	120	1469
Background + Project	27	0	30	229	752	181	14	0	34	172	500	120	2059

Traffix Node Number: 5320
Intersection Name: Mary Avenue & Central Expressway
Peak Hour: PM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	200	625	466	86	1165	657	633	141	199	606	1464	34	6276
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr					2						3		5
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					42						4		46
830 W Evelyn Ave									1	1			2
1081 Innovation Way					38						9		47
1111 Lockheed Martin Way					4						1		5
1152 Bordeaux Dr					14						2		16
1194 N. Mathilda Ave					4	6	1				1		12
1230 Oakmead Pkwy					1								1
1260 N Mathilda Ave					1	1							2
215 Moffett Park Dr					4						2		6
265 Sobrante Way								2	9	1	1		13
275 N Mathilda Ave									5			1	6
824 San Aleso Ave													
445 N Mary Ave	13	12	37	7				2				2	73
589 W. Java Dr		11						2					13
610 N Mary Ave	127	103	223	43				20				25	541
615 N. Mathilda Ave	12	11			14								37
623 N Pastoria Ave	5											1	6
684 W. Maude Ave		23			59			4			4	8	98
810 W Maude Ave		14			36			2			2	5	59
901 Kifer Rd					7								7
1120 Kifer Rd					5						3		8
1155 Aster Ave					9						17		26
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave					2						4		6
520 Almanor Ave	18	9			4			1			1	3	36
675 Almanor Avenue		7						1					8
803 W El Camino Real													
871 and 895 E Fremont Ave					2						3		5
223 N Mathilda Ave									13		2		15
456 W Olive Ave					-15						-7		-22
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave	-2											2	
1 AMD Place					-5						19		14
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		-1									5		4
915 De Guigne Dr					-3						7		4
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					25						6		31
4301, 4401, 4551 Great America Pkwy					11						3		14
2620-2727 Augustine Dr					-10						77		67
2600, 2800 San Tomas Expy & 2400 Condensa St					115						24		139

5010 Old Ironsides Dr					160						33		193
3000 Bowers Ave					21						6		27
3700 El Camino Real													
2950 Lakeside Dr					1						1		2
3607 Kifer Rd					9						1		10
City Place					89						14		103
3226 Scott Blvd					4						1		5
2041 Mission College Blvd					5						7		12
3100-3200 Coronado Dr					17						4		21
1 Great America Pkwy					3						4		7
3375 Scott Blvd					21						5		26
3001 Tasman Dr					4						1		5
Santa Clara LSAP			5	2	8	2	5				21		43
2350 & 2305 Mission College Blvd					25						6		31
3625 Peterson Way					32						6		38
3402 El Camino Real													
3045 Stender Way					2						1		3
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	173	189	265	52	767	9	6	34	28	2	304	47	1876
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	373	814	731	138	1932	666	639	175	227	608	1768	81	8152
Project Trips	0	0	0	0	62	0	0	0	0	0	6	0	68
Existing + Project	200	625	466	86	1227	657	633	141	199	606	1470	34	6344
Background + Project	373	814	731	138	1994	666	639	175	227	608	1774	81	8220

Traffix Node Number: 57
Intersection Name: Fair Oaks Avenue & US 101 NB Ramps
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	190	1209	0	270	0	624	0	1042	231	0	0	0	3566
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr	-1	7						11					17
1120 Innovation Way													
1235 Bordeaux Dr		19		12									31
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real						3			3				6
840 E El Camino Real													
861 E. El Camino Real						4			4				8
1050 Kifer Rd									62				62
830 W Evelyn Ave													
1081 Innovation Way									7				7
1111 Lockheed Martin Way		16						5					21
1152 Bordeaux Dr		34						4					38
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		4						2					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		3						5					8
445 N Mary Ave													
589 W. Java Dr		34		3				3					40
610 N Mary Ave	2	1						12					15
615 N. Mathilda Ave								3					3
623 N Pastoria Ave													
684 W. Maude Ave		1						6					7
810 W Maude Ave		1						4					5
901 Kifer Rd									11				11
1120 Kifer Rd		21						12	4				37
1155 Aster Ave		17						9	14				40
1250 Lakeside Dr													
2502 Town Center Ln		45				14		49					108
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5				4		3	3				15
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave	-4	-8		-10				-14					-36
1111, 1139 Karlstad Dr	-11	-19		29				44					43
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr	-1	-2		2				3					2
370 San Aleso Ave													
1 AMD Place		38						12	15				65
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave		2				1		-1	-1				1
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave						3							3
915 De Guigne Dr		14						-11	-16				-13
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													

5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													
3607 Kifer Rd		1						6					7
City Place		27		5	9	7		27	5				80
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP									2				2
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	-15	285	0	41	9	36	0	211	113	0	0	0	680
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	175	1494	0	311	9	660	0	1253	344	0	0	0	4246
Project Trips	0	0	0	0	0	0	0	0	47	0	0	0	47
Existing + Project	190	1209	0	270	0	624	0	1042	278	0	0	0	3613
Background + Project	175	1494	0	311	9	660	0	1253	391	0	0	0	4293

Traffix Node Number: 91
Intersection Name: Fair Oaks Avenue & Ahwanee Avenue
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	150	2339	71	58	12	26	36	831	43	74	48	102	3790
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd		12						62					74
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		16						5					21
1152 Bordeaux Dr		34						4					38
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		4						2					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		3				2				12	2	5	24
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave		1						12					13
615 N. Mathilda Ave								3					3
623 N Pastoria Ave													
684 W. Maude Ave		1						6					7
810 W Maude Ave		1						4					5
901 Kifer Rd		2						11					13
1120 Kifer Rd		33						16					49
1155 Aster Ave		43						24					67
1250 Lakeside Dr													
2502 Town Center Ln		59						59					118
311 S Mathilda Ave													
520 Almanor Ave										2			2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		12						7					19
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-3						-5					-8
1111, 1139 Karlstad Dr		-6						17					11
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		76						28	-1				103
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave		4						-3					1
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave	3								4	2			9
915 De Guigne Dr		34						-26					8
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													

5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													
3607 Kifer Rd		1						6					7
City Place	3	20	5	6	8	1	9	6	3	4	8	7	80
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP		4						2					6
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	6	448	5	6	8	3	9	292	6	20	10	12	825
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	156	2787	76	64	20	29	45	1123	49	94	58	114	4615
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	5	0	0	0	0	0	47	0	0	0	0	52
Existing + Project	150	2344	71	58	12	26	36	878	43	74	48	102	3842
Background + Project	156	2792	76	64	20	29	45	1170	49	94	58	114	4667
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Intersection Number: 4
Traffix Node Number: 41
Intersection Name: Fair Oaks Avenue & Duane Avenue
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Existing Conditions	94	1921	225	143	110	228	179	692	4	26	99	63	3784
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd		12						62					74
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way	6	10						4				1	21
1152 Bordeaux Dr		34						4					38
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		4						2					6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		17				2					2		21
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave		1						12					13
615 N. Mathilda Ave								3					3
623 N Pastoria Ave													
684 W. Maude Ave		1						6					7
810 W Maude Ave		1						4					5
901 Kifer Rd		2						11					13
1120 Kifer Rd		33						16					49
1155 Aster Ave		43						24					67
1250 Lakeside Dr													
2502 Town Center Ln		59				23	25	59					166
311 S Mathilda Ave													
520 Almanor Ave		1	1										2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		12						7					19
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-3						-5					-8
1111, 1139 Karlstad Dr		-6						17					11
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		17	58	29	-1	13	25	-3	-2				136
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave		4						-3					1
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave		1	1	2				2					6
915 De Guigne Dr		15	19	-17				-9					8
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													

5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													
3607 Kifer Rd		1						6					7
City Place	13	39	8	3	8	4	3	5	9	5	4	1	102
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP		4						2					6
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	19	399	87	17	7	42	53	278	7	5	6	2	922
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	113	2320	312	160	117	270	232	970	11	31	105	65	4706
Project Trips	0	5	0	0	0	0	19	47	0	0	0	0	71
Existing + Project	94	1926	225	143	110	228	198	739	4	26	99	63	3855
Background + Project	113	2325	312	160	117	270	251	1017	11	31	105	65	4777

Traffix Node Number: 92
Intersection Name: Fair Oaks Avenue & Wolfe Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	1080	1043	0	0	0	0	0	399	0	6	0	581	3109
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr	7											6	13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real	3											3	6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real	7											7	14
840 E El Camino Real	2											2	4
861 E. El Camino Real	8											9	17
1050 Kifer Rd		12						62					74
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr	17	17						2				2	38
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr	2	2						1				1	6
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave	12	6											18
445 N Mary Ave													
589 W. Java Dr	17											3	20
610 N Mary Ave	1											12	13
615 N. Mathilda Ave												3	3
623 N Pastoria Ave													
684 W. Maude Ave	1											6	7
810 W Maude Ave	1											4	5
901 Kifer Rd		2						11					13
1120 Kifer Rd		33						16					49
1155 Aster Ave		43						24					67
1250 Lakeside Dr													
2502 Town Center Ln	82											84	166
311 S Mathilda Ave													
520 Almanor Ave		1											1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave	7	5						3				5	20
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave	-2	-1						-2				-4	-9
1111, 1139 Karlstad Dr	-4	-2						6				11	11
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr	-1											1	
370 San Aleso Ave													
1 AMD Place	13	17						-5				25	50
617 E. Evelyn Ave	4											3	7
625 E. Taylor Ave	4											-3	1
669 Old San Francisco Rd	1												1
728, 740, 750, 760, and 814 San Aleso Ave		1						2					3
915 De Guigne Dr		15						-9					6
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd	1											6	7
City Place	9	36						5		4		2	56
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP		4						2					6
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	192	250	0	0	0	0	0	140	0	4	0	188	774
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	1272	1293	0	0	0	0	0	539	0	10	0	769	3883
Project Trips	0	5	0	0	0	0	0	65	0	0	0	0	70
Existing + Project	1080	1048	0	0	0	0	0	464	0	6	0	581	3179
Background + Project	1272	1298	0	0	0	0	0	604	0	10	0	769	3953

Traffix Node Number: 42
Intersection Name: Fair Oaks Avenue & Arques Avenue
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	104	1000	55	50	182	440	151	466	150	167	131	106	3002
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr					1						2		3
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd													
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		82						84					166
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		7						5					12
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5			-7			25			12		35
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave				1									1
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave		1		1				1			1		4
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					7						2		9
4301, 4401, 4551 Great America Pkwy					7						2		9
2620-2727 Augustine Dr					-2						18		16
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave					2						1		3
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd		1						6					7
City Place	6	4	1	6	6	4		8	4	2	2	3	46
3226 Scott Blvd					4						1		5
2041 Mission College Blvd					2						2		4
3100-3200 Coronado Dr					4						1		5
1 Great America Pkwy													
3375 Scott Blvd					4						1		5
3001 Tasman Dr													
Santa Clara LSAP					7								7
2350 & 2305 Mission College Blvd					7						2		9
3625 Peterson Way					9						2		11
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	6	167	1	8	51	4	0	178	4	2	49	3	473
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	110	1167	56	58	233	444	151	644	154	169	180	109	3475
Project Trips	0	0	0	0	0	0	0	0	31	0	0	0	31
Existing + Project	104	1000	55	50	182	440	151	466	181	167	131	106	3033
Background + Project	110	1167	56	58	233	444	151	644	185	169	180	109	3506

Traffix Node Number: 95
Intersection Name: Fair Oaks Avenue & California Avenue
Peak Hour: PM
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	116	1438	38	0	0	0	64	743	49	182	70	76	2776
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd									21				21
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		82						84					166
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		7						5					12
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5						25					30
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave													
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave		1						1					2
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd		1						6					7
City Place		10						12					22
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	173	0	0	0	0	0	182	21	0	0	0	376
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	116	1611	38	0	0	0	64	925	70	182	70	76	3152
Project Trips	0	0	0	0	0	0	0	31	0	0	0	0	31
Existing + Project	116	1438	38	0	0	0	64	774	49	182	70	76	2807
Background + Project	116	1611	38	0	0	0	64	956	70	182	70	76	3183

Traffix Node Number: 96
Intersection Name: Fair Oaks Avenue & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	1455	125	161	0	201	136	650	0	0	0	0	2728
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd				21		29	6						56
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd						5	1						6
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln		82						84					166
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		7				1	1	5					14
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5						25					30
617 E. Evelyn Ave		4						3					7
625 E. Taylor Ave													
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave			1	1									2
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave						4	1						5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd			1	6									7
City Place		10						12					22
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	171	2	28	0	39	9	175	0	0	0	0	424
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	0	1626	127	189	0	240	145	825	0	0	0	0	3152
Project Trips	0	0	0	31	0	69	7	0	0	0	0	0	107
Existing + Project	0	1455	125	192	0	270	143	650	0	0	0	0	2835
Background + Project	0	1626	127	220	0	309	152	825	0	0	0	0	3259

Traffix Node Number: 62
Intersection Name: Fair Oaks Avenue & Evelyn Avenue
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	244	1280	89	46	186	48	86	638	54	67	413	146	3297
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd	4	25						5				1	35
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave											1		1
589 W. Java Dr		17						3					20
610 N Mary Ave					2						9		11
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave											2		2
810 W Maude Ave											1		1
901 Kifer Rd		5						1					6
1120 Kifer Rd					3						6		9
1155 Aster Ave					5						9		14
1250 Lakeside Dr													
2502 Town Center Ln	82											84	166
311 S Mathilda Ave													
520 Almanor Ave											1		1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5						25					30
617 E. Evelyn Ave			4	3									7
625 E. Taylor Ave													
669 Old San Francisco Rd		1											1
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave		4						1					5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd					5						1		6
City Place	3	18	5	9	9	8		6		3	1	3	65
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	89	128	9	12	24	8	0	89	0	3	31	88	481
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	333	1408	98	58	210	56	86	727	54	70	444	234	3778
Project Trips	0	69	0	0	0	0	0	7	0	0	0	0	76
Existing + Project	244	1349	89	46	186	48	86	645	54	67	413	146	3373
Background + Project	333	1477	98	58	210	56	86	734	54	70	444	234	3854

Traffix Node Number: 63
Intersection Name: Fair Oaks Avenue & Old SF Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	158	941	125	107	188	127	198	507	45	48	366	114	2924
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real	3											3	6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real		7						7					14
840 E El Camino Real		2						2					4
861 E. El Camino Real		8						9					17
1050 Kifer Rd		25										5	30
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave													
589 W. Java Dr		17						3					20
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		5						1					6
1120 Kifer Rd											13		13
1155 Aster Ave					9						17		26
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct					4						7		11
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5						25					30
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd			1										1
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					7						2		9
4301, 4401, 4551 Great America Pkwy					3						15		18
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					19						4		23
5010 Old Ironsides Dr													
3000 Bowers Ave		4						1					5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd					10						2		12
City Place		29						6					35
3226 Scott Blvd													
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					3						8		11
2350 & 2305 Mission College Blvd					7						2		9
3625 Peterson Way					9						2		11
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	3	135	1	0	72	0	0	81	0	0	73	8	373
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	161	1076	126	107	260	127	198	588	45	48	439	122	3297
Project Trips	31	25	0	0	0	0	0	2	0	0	0	3	61
Existing + Project	189	966	125	107	188	127	198	509	45	48	366	117	2985
Background + Project	192	1101	126	107	260	127	198	590	45	48	439	125	3358

Traffix Node Number: 1404
Intersection Name: Fair Oaks Avenue & El Camino Real
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/08/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	145	736	161	173	773	181	258	554	119	189	1515	237	5041
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr		7						6					13
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real					9						10		19
750 Lakeway Dr													
830 E. El Camino Real			7	7	21	5	4				19		63
840 E El Camino Real			2	2	5						5		14
861 E. El Camino Real			8	9	26	6	6				25		80
1050 Kifer Rd	25												25
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way					1						4		5
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						5					11
445 N Mary Ave					1						5		6
589 W. Java Dr		17						3					20
610 N Mary Ave					9						47		56
615 N. Mathilda Ave											11		11
623 N Pastoria Ave											2		2
684 W. Maude Ave					4						22		26
810 W Maude Ave					2						14		16
901 Kifer Rd	5											1	6
1120 Kifer Rd													
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln					59						59		118
311 S Mathilda Ave					4						2		6
520 Almanor Ave					2						13		15
675 Almanor Avenue													
803 W El Camino Real					-1						-2		-3
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave					-11						-16		-27
1008 E El Camino Real					4						6		10
1023 N Fair Oaks Ave		-2						-4					-6
1111, 1139 Karlstad Dr		-4						11					7
1122 Aster Ave													
1142 Dahlia Ct					3						5		8
160 Persian Dr		-1						1					
370 San Aleso Ave													
1 AMD Place		5						25					30
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave											-1		-1
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave		4						1					5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		29						6					35
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real					7						9		16
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	30	88	17	18	145	11	10	62	0	0	239	1	621
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	175	824	178	191	918	192	268	616	119	189	1754	238	5662
Project Trips	0	25	0	0	0	0	0	2	0	0	0	0	27
Existing + Project	145	761	161	173	773	181	258	556	119	189	1515	237	5068
Background + Project	175	849	178	191	918	192	268	618	119	189	1754	238	5689

Traffix Node Number: 1402
Intersection Name: Sunnyvale-Saratoga & Remington Drive
Peak Hour: PM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	134	1906	141	40	274	372	336	942	162	138	401	162	5008
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd					1						2		3
1080 Stewart Dr													
1101 Elko Dr					7						6		13
1120 Innovation Way		32						35					67
1235 Bordeaux Dr		19						24					43
590 W El Camino Real		3						3					6
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real						5	4						9
840 E El Camino Real													
861 E. El Camino Real						6	6						12
1050 Kifer Rd													
830 W Evelyn Ave		1						1					2
1081 Innovation Way		47						11					58
1111 Lockheed Martin Way		6						2					8
1152 Bordeaux Dr		48			17			6			2		73
1194 N. Mathilda Ave		12						2					14
1230 Oakmead Pkwy													
1260 N Mathilda Ave		2						1					3
215 Moffett Park Dr					2						1		3
265 Sobrante Way		8						1					9
275 N Mathilda Ave		8						2					10
824 San Aleso Ave		9			6			8			5		28
445 N Mary Ave		8						2					10
589 W. Java Dr		28			17			5			3		53
610 N Mary Ave		127						25					152
615 N. Mathilda Ave		28						-1					27
623 N Pastoria Ave		3											3
684 W. Maude Ave		59						11					70
810 W Maude Ave		36						7					43
901 Kifer Rd													
1120 Kifer Rd								6					6
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave		2						4					6
520 Almanor Ave		22						3					25
675 Almanor Avenue		12						2					14
803 W El Camino Real		-1											-1
871 and 895 E Fremont Ave		14				8	5	8					35
223 N Mathilda Ave		16						3					19
456 W Olive Ave		-77						-33					-110
1008 E El Camino Real													
1023 N Fair Oaks Ave					-2			-1			-4		-7
1111, 1139 Karlstad Dr		-1			-4			3			11		9
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr					-1						1		
370 San Aleso Ave		-1						1					
1 AMD Place					5						25		30
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		-1						2					1
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave					4						1		5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd													
City Place					29						6		35
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP													
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	469	0	0	81	19	15	143	0	0	59	0	786
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	134	2375	141	40	355	391	351	1085	162	138	460	162	5794
Project Trips	0	0	0	0	0	25	2	0	0	0	0	0	27
Existing + Project	134	1906	141	40	274	397	338	942	162	138	401	162	5035
Background + Project	134	2375	141	40	355	416	353	1085	162	138	460	162	5821

Traffix Node Number:	93		
Intersection Name:	Wolfe Road	& Maude Avenue	
Peak Hour:	PM	Date of Analysis:	10/17/19
Count Date:	12/06/17		
Scenario:	Intuitive Surgical 2019		

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	7	998	9	10	3	3	5	384	148	251	4	8	1830
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr									8	7			15
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		12						62					74
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6							3				9
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave									2	12			14
615 N. Mathilda Ave										1			1
623 N Pastoria Ave													
684 W. Maude Ave									1	6			7
810 W Maude Ave									1	4			5
901 Kifer Rd		2						11					13
1120 Kifer Rd		33						15					48
1155 Aster Ave		43						24					67
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		1								1			2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5						3					8
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave									2	-2			
1 AMD Place		17						-5	1	23			36
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1						2	3	1			7
915 De Guigne Dr		15						-9	-16	21			11
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		40						5					45
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP		4						2					6
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	254	0	0	0	0	0	139	5	74	0	0	472
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	7	1252	9	10	3	3	5	523	153	325	4	8	2302
Project Trips	0	5	0	0	0	0	0	65	0	0	0	0	70
Existing + Project	7	1003	9	10	3	3	5	449	148	251	4	8	1900
Background + Project	7	1257	9	10	3	3	5	588	153	325	4	8	2372

Traffix Node Number: 58
Intersection Name: Wolfe Road & Stewart Drive
Peak Hour: PM
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	10	1095	177	95	7	243	170	380	20	5	1	4	2207
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr			7	8									15
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		12				2	12	62					88
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						3					9
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave		12						2					14
615 N. Mathilda Ave		1											1
623 N Pastoria Ave													
684 W. Maude Ave		6						1					7
810 W Maude Ave		4						1					5
901 Kifer Rd		2					2	11					15
1120 Kifer Rd		33						15					48
1155 Aster Ave		43				1	1	24					69
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2											2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5						3					8
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		-2						2					
1 AMD Place			40	-4		6	22						64
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2						5					7
915 De Guigne Dr			35	-25		-5	10						15
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		40						5					45
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr						2	1						3
Santa Clara LSAP		4						2					6
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	245	82	-21	0	6	48	165	0	0	0	0	525
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	10	1340	259	74	7	249	218	545	20	5	1	4	2732
Project Trips	0	5	0	0	0	0	0	65	0	0	0	0	70
Existing + Project	10	1100	177	95	7	243	170	445	20	5	1	4	2277
Background + Project	10	1345	259	74	7	249	218	610	20	5	1	4	2802

Traffix Node Number: 43
Intersection Name: Wolfe Road & Arques Avenue
Peak Hour: PM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	35	1104	134	103	492	147	127	425	25	37	262	85	2976
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr					1						2		3
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		14						75					89
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						3					9
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave		12						2					14
615 N. Mathilda Ave		1											1
623 N Pastoria Ave													
684 W. Maude Ave		6						1					7
810 W Maude Ave		4						1					5
901 Kifer Rd		2						13					15
1120 Kifer Rd		33						15					48
1155 Aster Ave		44				1	1	24					70
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2											2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5						3					8
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		-1	-1	1				1					
1 AMD Place		6			-7	4	2	22			12		39
617 E. Evelyn Ave						1	1						2
625 E. Taylor Ave					1								1
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2	1	1	1			4			1		10
915 De Guigne Dr		-5				-2	3	10					6
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					7						2		9
4301, 4401, 4551 Great America Pkwy					7						2		9
2620-2727 Augustine Dr					-2						18		16
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave					2						1		3
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd													
City Place		40			16			5			3		64
3226 Scott Blvd					4						1		5
2041 Mission College Blvd					2						2		4
3100-3200 Coronado Dr					4						1		5
1 Great America Pkwy													
3375 Scott Blvd					4						1		5
3001 Tasman Dr		2						1					3
Santa Clara LSAP		4			7			2					13
2350 & 2305 Mission College Blvd					7						2		9
3625 Peterson Way					9						2		11
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	252	0	2	63	4	7	211	0	0	50	0	589
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	35	1356	134	105	555	151	134	636	25	37	312	85	3565
Project Trips	0	5	0	0	0	0	0	65	0	0	0	0	70
Existing + Project	35	1109	134	103	492	147	127	490	25	37	262	85	3046
Background + Project	35	1361	134	105	555	151	134	701	25	37	312	85	3635

Traffix Node Number: 97
Intersection Name: Wolfe Road & Central Expressway Ramps
Peak Hour: PM Date of Analysis: 10/17/19
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	82	1333	59	55	0	520	63	500	114	693	4	75	3498
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		14						75	21	4			114
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		3	3					3	3	3			15
445 N Mary Ave									1	6			7
589 W. Java Dr													
610 N Mary Ave		12						2					14
615 N. Mathilda Ave		1											1
623 N Pastoria Ave										2			2
684 W. Maude Ave		6						1					7
810 W Maude Ave		4						1					5
901 Kifer Rd		2						13	7				22
1120 Kifer Rd		33				3	5	15	5	3			64
1155 Aster Ave		45						25	9	17			96
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2											2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5				3	2	3	2	3			18
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		-1						1	1	-1			
1 AMD Place	2	4	4	3				15				7	35
617 E. Evelyn Ave		1						1					2
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		2						4					6
915 De Guigne Dr	-3	-4						5				7	5
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy						2	9						11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17

2950 Lakeside Dr													
3607 Kifer Rd									9	1			10
City Place		40						5					45
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr		2						1					3
Santa Clara LSAP		4						2	7				13
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	-1	250	7	3	0	8	16	201	65	38	0	14	601
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	81	1583	66	58	0	528	79	701	179	731	4	89	4099
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	5	0	0	0	0	0	65	31	0	0	0	101
Existing + Project	82	1338	59	55	0	520	63	565	145	693	4	75	3599
Background + Project	81	1588	66	58	0	528	79	766	210	731	4	89	4200
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number:	44		
Intersection Name:	Wolfe Road	& Kifer Road	
Peak Hour:	PM	Date of Analysis:	10/17/19
Count Date:	11/14/17		
Scenario:	Intuitive Surgical 2019		

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	49	2367	140	139	301	220	58	402	50	223	298	63	4310
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd			18	96	50	42	8				6		220
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						6					12
445 N Mary Ave		6						1					7
589 W. Java Dr													
610 N Mary Ave		12						2					14
615 N. Mathilda Ave		1											1
623 N Pastoria Ave		2											2
684 W. Maude Ave		6						1					7
810 W Maude Ave		4						1					5
901 Kifer Rd			2	21	5	7	1				1		37
1120 Kifer Rd			63	25		11	39						138
1155 Aster Ave		62						34					96
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2											2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		10				2	1	6					19
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave		6						4					10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		-1	-1	1				1					
1 AMD Place		4				-9	-2	15					8
617 E. Evelyn Ave		1						1					2
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1	1	1	1			3			1		8
915 De Guigne Dr		-4						5					1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		2						9					11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					5						1		6
5010 Old Ironsides Dr													
3000 Bowers Ave					4						1		5
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd			1	9	6	14	3				1		34
City Place		40			16			5			1		62
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr		2						1					3
Santa Clara LSAP			4	9		9	20						42
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	231	88	162	87	76	70	120	0	0	12	0	846
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	49	2598	228	301	388	296	128	522	50	223	310	63	5156
Project Trips	0	0	5	97	100	37	4	0	0	0	7	0	250
Existing + Project	49	2367	145	236	401	257	62	402	50	223	305	63	4560
Background + Project	49	2598	233	398	488	333	132	522	50	223	317	63	5406

Traffix Node Number:	64		
Intersection Name:	Wolfe Road	& Evelyn Avenue	
Peak Hour:	PM	Date of Analysis:	10/17/19
Count Date:	11/15/17		
Scenario:	Intuitive Surgical 2019		

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	102	2001	535	85	127	29	53	400	93	114	493	35	4067
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		29	12	2				6					49
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						6					12
445 N Mary Ave		6						1			1		8
589 W. Java Dr													
610 N Mary Ave		12			2			2			9		25
615 N. Mathilda Ave		1											1
623 N Pastoria Ave		2											2
684 W. Maude Ave		6						1			2		9
810 W Maude Ave		4						1			1		6
901 Kifer Rd		7						1					8
1120 Kifer Rd	17	19						33				6	75
1155 Aster Ave			62	34	5						9		110
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2									1		3
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		12						7					19
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave			6	4									10
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave		-1						1					
1 AMD Place		-5						13					8
617 E. Evelyn Ave	1								1			1	3
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1						3					4
915 De Guigne Dr		-4						5					1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		2						9					11
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St													
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd	5	10						2				1	18
City Place		40			26			5			6		77
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr		2						1					3
Santa Clara LSAP		9						20					29
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	23	229	80	40	33	0	0	142	1	0	29	8	585
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	125	2230	615	125	160	29	53	542	94	114	522	43	4652
Project Trips	0	37	0	0	0	0	0	4	0	0	0	0	41
Existing + Project	102	2038	535	85	127	29	53	404	93	114	493	35	4108
Background + Project	125	2267	615	125	160	29	53	546	94	114	522	43	4693

Traffix Node Number: 45
Intersection Name: Wolfe Road & Reed Avenue
Peak Hour: PM
Count Date: 11/14/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	192	1734	191	38	217	102	117	370	99	65	498	76	3699
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		29						6					35
830 W Evelyn Ave													
1081 Innovation Way		33						7					40
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		17						2					19
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr		2						1					3
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave		6						6					12
445 N Mary Ave		6						1					7
589 W. Java Dr													
610 N Mary Ave		12						2					14
615 N. Mathilda Ave		1											1
623 N Pastoria Ave		2											2
684 W. Maude Ave		6						1					7
810 W Maude Ave		4						1					5
901 Kifer Rd		7						1					8
1120 Kifer Rd		8						20				13	41
1155 Aster Ave					9	13	17				17		56
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		2											2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		12						7					19
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave		-1						-2					-3
1111, 1139 Karlstad Dr		-2						6					4
1122 Aster Ave													
1142 Dahlia Ct					4						7		11
160 Persian Dr													
370 San Aleso Ave		-1						1					
1 AMD Place		-5						13					8
617 E. Evelyn Ave								1					1
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1						3					4
915 De Guigne Dr		-4						5					1
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					7						2		9
4301, 4401, 4551 Great America Pkwy	2				1						6	9	18
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					19						4		23
5010 Old Ironsides Dr													
3000 Bowers Ave													
3700 El Camino Real		10						7					17
2950 Lakeside Dr													

3607 Kifer Rd	5	5			5	5	1	1			1	1	24
City Place		40						5					45
3226 Scott Blvd													
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr		2						1					3
Santa Clara LSAP	2	6			1			17			6	3	35
2350 & 2305 Mission College Blvd					7						2		9
3625 Peterson Way					9						2		11
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	9	208	0	0	63	18	18	117	0	0	48	26	507
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	201	1942	191	38	280	120	135	487	99	65	546	102	4206
Project Trips	0	19	19	2	0	0	0	2	0	0	0	0	42
Existing + Project	192	1753	210	40	217	102	117	372	99	65	498	76	3741
Background + Project	201	1961	210	40	280	120	135	489	99	65	546	102	4248

Traffix Node Number: 98
Intersection Name: Commercial Street & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 12/06/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	47	0	281	15	533	0	0	0	0	0	542	12	1430
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd			4		187						32		223
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd	33		33	6								4	76
1120 Kifer Rd					36						102		138
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave					2						1		3
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					1						-1		
1 AMD Place					-9						-2		-11
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2						1		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					5						1		6
5010 Old Ironsides Dr													
3000 Bowers Ave					4						1		5
3700 El Camino Real													
2950 Lakeside Dr													

3607 Kifer Rd					29						6		35
City Place					16						1		17
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					17						24		41
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	33	0	37	6	290	0	0	0	0	0	166	4	536
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	80	0	318	21	823	0	0	0	0	0	708	16	1966
Project Trips	0	6	0	28	104	40	181	35	129	15	0	0	538
Existing + Project	47	6	281	43	637	40	181	35	129	15	542	12	1968
Background + Project	80	6	318	49	927	40	181	35	129	15	708	16	2504
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 67
Intersection Name: Lawrence Expressw & US 101 NB Ramps
Peak Hour: PM
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	344	1883	0	510	0	675	378	2141	0	0	0	0	5931
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr						10	5						15
1101 Elko Dr	1	9		6				9					25
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4					4	4					12
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		8				12		42					62
830 W Evelyn Ave													
1081 Innovation Way							2						2
1111 Lockheed Martin Way		16						6					22
1152 Bordeaux Dr	-29	46						6					23
1194 N. Mathilda Ave		10						2					12
1230 Oakmead Pkwy						1	4	1					6
1260 N Mathilda Ave		1						1					2
215 Moffett Park Dr		13		3				4					20
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		23						4					27
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		1				1	7	5					14
1120 Kifer Rd		20				27	4	8					59
1155 Aster Ave		26				17		14					57
1250 Lakeside Dr		42				25	32	32					131
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave								2					2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		5				3		3					11
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		2						1					3
1142 Dahlia Ct		3				5		2					10
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		32				76		-14					94
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr		14				27		-11					30
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		6						1					7
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		3						19					22
5010 Old Ironsides Dr		175						45					220
3000 Bowers Ave		1						6					7
3700 El Camino Real		31						20					51
2950 Lakeside Dr		1						2					3

3607 Kifer Rd		3				8	39	15					65
City Place	235	150		9		75	3	56					528
3226 Scott Blvd													
2041 Mission College Blvd		1											1
3100-3200 Coronado Dr													
1 Great America Pkwy						3							3
3375 Scott Blvd		5						17					22
3001 Tasman Dr		17						4					21
Santa Clara LSAP		29					33	11					73
2350 & 2305 Mission College Blvd													
3625 Peterson Way		3					67	16					86
3402 El Camino Real							4						4
3045 Stender Way													
2931 El Camino Real		5					8	5					18
2343 Calle Del Mundo													
Total Approved Trips	207	725	0	18	0	290	212	342	0	0	0	0	1794
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	551	2608	0	528	0	965	590	2483	0	0	0	0	7725
Project Trips	0	6	0	0	0	5	0	62	0	0	0	0	73
Existing + Project	344	1889	0	510	0	680	378	2203	0	0	0	0	6004
Background + Project	551	2614	0	528	0	970	590	2545	0	0	0	0	7798

Traffix Node Number: 68
Intersection Name: Lawrence Expressw & US 101 SB Ramps
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	161	2459	0	0	0	0	352	1974	0	1125	0	628	6699
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		10					5	5		10			30
1101 Elko Dr	9							9					18
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		4						8		4			16
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		20					62	42					124
830 W Evelyn Ave													
1081 Innovation Way								2		9			11
1111 Lockheed Martin Way		16						6					22
1152 Bordeaux Dr		55						7					62
1194 N. Mathilda Ave		10						2					12
1230 Oakmead Pkwy		1						5		1			7
1260 N Mathilda Ave		1						1					2
215 Moffett Park Dr		8						4					12
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		23						4					27
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		2					7	12		1			22
1120 Kifer Rd		47					-1	12		27			85
1155 Aster Ave		43					9	14					66
1250 Lakeside Dr		68					19	64		42			193
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave												2	2
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8					2	3					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		2						1					3
1142 Dahlia Ct		8					3	5		5			21
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		107					25	-15		18			135
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr		41					-21	-11					9
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy		6						1					7
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		3						19					22
5010 Old Ironsides Dr		175						36				9	220
3000 Bowers Ave		1						6					7
3700 El Camino Real		31						20					51
2950 Lakeside Dr		1						2					3

3607 Kifer Rd		11					39	54		8			112
City Place	8	280					11	76		4		8	387
3226 Scott Blvd													
2041 Mission College Blvd		1											1
3100-3200 Coronado Dr													
1 Great America Pkwy		3					5						8
3375 Scott Blvd		27						17					44
3001 Tasman Dr		17						4					21
Santa Clara LSAP		29						44		85			158
2350 & 2305 Mission College Blvd													
3625 Peterson Way		3						83		14			100
3402 El Camino Real								4		5			9
3045 Stender Way													
2931 El Camino Real		5						13		7			25
2343 Calle Del Mundo													
Total Approved Trips	17	1087	0	0	0	0	165	563	0	240	0	19	2091
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	178	3546	0	0	0	0	517	2537	0	1365	0	647	8790
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	11	0	0	0	0	0	109	0	5	0	0	125
Existing + Project	161	2470	0	0	0	0	352	2083	0	1130	0	628	6824
Background + Project	178	3557	0	0	0	0	517	2646	0	1370	0	647	8915
Existing + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background + Project Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Traffix Node Number: 49
Intersection Name: Lawrence Expressw & Oakmead Parkway
Peak Hour: PM
Count Date: 05/23/19
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	614	2503	461	301	132	43	52	1394	208	167	229	509	6613
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr	20									6		10	36
1101 Elko Dr								9					9
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr			8	8	2	6	6				2		32
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		20						104					124
830 W Evelyn Ave													
1081 Innovation Way		9						2					11
1111 Lockheed Martin Way		16						6					22
1152 Bordeaux Dr		55						7					62
1194 N. Mathilda Ave		10						2					12
1230 Oakmead Pkwy			2	5		3	1						11
1260 N Mathilda Ave		1						1					2
215 Moffett Park Dr		8						4					12
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		23						4					27
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		3						19					22
1120 Kifer Rd		75						11					86
1155 Aster Ave		43						23					66
1250 Lakeside Dr			110	84		40	53						287
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave										1			1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		2						1					3
1142 Dahlia Ct		13						8					21
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place	109	16			3			6	49	1	-5	4	183
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave									2	1			3
915 De Guigne Dr	27	14			3			-4	9	-7	-3	-28	11
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy	6								7	2		1	16
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St		3			1			19	4		1		28
5010 Old Ironsides Dr	15	146	15	3				30				3	212
3000 Bowers Ave		1						6					7
3700 El Camino Real		31						20					51
2950 Lakeside Dr			1	2									3

3607 Kifer Rd		19						93					112
City Place	20	350	9	2	9		2	100	9	6	1	8	516
3226 Scott Blvd													
2041 Mission College Blvd		1											1
3100-3200 Coronado Dr													
1 Great America Pkwy	3											5	8
3375 Scott Blvd		3	24	5				12					44
3001 Tasman Dr	5	12						3				1	21
Santa Clara LSAP		114						44					158
2350 & 2305 Mission College Blvd													
3625 Peterson Way		5	12	58	9			25			2		111
3402 El Camino Real		5						4					9
3045 Stender Way													
2931 El Camino Real		11						13					24
2343 Calle Del Mundo													
Total Approved Trips	205	1037	181	167	27	49	62	581	80	10	-2	4	2401
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	819	3540	642	468	159	92	114	1975	288	177	227	513	9014
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	16	0	0	0	0	0	156	0	2	0	0	174
Existing + Project	614	2519	461	301	132	43	52	1550	208	169	229	509	6787
Background + Project	819	3556	642	468	159	92	114	2131	288	179	227	513	9188

Traffix Node Number: 5611
Intersection Name: Lawrence Expressw & Arques Avenue
Peak Hour: PM
Count Date: 04/04/17
Scenario: Intuitive Surgical 2019
Date of Analysis: 10/17/19

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	140	2612	137	87	200	360	162	1276	234	748	544	347	6847
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		6							10				16
1101 Elko Dr								9					9
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		6			1			6			2		15
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd		20						104					124
830 W Evelyn Ave													
1081 Innovation Way		9						2					11
1111 Lockheed Martin Way		10	6	2				4					22
1152 Bordeaux Dr		34	21	3				4					62
1194 N. Mathilda Ave		10						2					12
1230 Oakmead Pkwy		3						1					4
1260 N Mathilda Ave		1						1					2
215 Moffett Park Dr		8						4					12
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr		23						4					27
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd		3						19					22
1120 Kifer Rd		75						11					86
1155 Aster Ave		43						23					66
1250 Lakeside Dr		40				8	11	53					112
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave		1											1
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		2						1					3
1142 Dahlia Ct		13						8					21
160 Persian Dr													
370 San Aleso Ave					1						-1		
1 AMD Place	16	-3	4	22	12			27	8	1		6	93
617 E. Evelyn Ave													
625 E. Taylor Ave					1								1
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave		1			2			2			1		6
915 De Guigne Dr	14	-7			3			9	4	-10	-3	-4	6
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd					7						2		9
4301, 4401, 4551 Great America Pkwy			2	7	7	11	2				2		31
2620-2727 Augustine Dr					-2	-6	42				18		52
2600, 2800 San Tomas Expy & 2400 Condensa St		4						22					26
5010 Old Ironsides Dr		146						30					176
3000 Bowers Ave		1			2			6	2		1		12
3700 El Camino Real		31						20					51
2950 Lakeside Dr						2	1						3

3607 Kifer Rd		19						93					112
City Place	6	385	1	2	1	4	6	80	2		5	7	499
3226 Scott Blvd					4						1		5
2041 Mission College Blvd		1			2						2		5
3100-3200 Coronado Dr					4						1		5
1 Great America Pkwy						2	4						6
3375 Scott Blvd			3	12	4	17	4				1		41
3001 Tasman Dr		12				1		3					16
Santa Clara LSAP		114						44	7				165
2350 & 2305 Mission College Blvd					7						2		9
3625 Peterson Way			5	25	9	36	7				2		84
3402 El Camino Real		5						4					9
3045 Stender Way							1						1
2931 El Camino Real		11						13					24
2343 Calle Del Mundo													
Total Approved Trips	36	1055	42	73	65	75	78	618	33	-9	36	9	2111
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	176	3667	179	160	265	435	240	1894	267	739	580	356	8958
Project Trips	0	17	0	0	0	0	0	156	0	0	0	0	173
Existing + Project	140	2629	137	87	200	360	162	1432	234	748	544	347	7020
Background + Project	176	3684	179	160	265	435	240	2050	267	739	580	356	9131

Traffix Node Number: 51
Intersection Name: Lawrence Expressw & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 03/07/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
INDEX	7	6	5	13	12	11	4	3	2	10	9	8	
PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Volume Adjustment	1.00	0.79	1.00	1.00	1.00	1.00	1.00	0.80	1.00	1.00	1.00	1.00	
Existing Conditions	94	3497	331	277	179	301	348	1229	68	652	503	178	7657
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		6						10					16
1101 Elko Dr								9					9
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		6						6					12
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd	15		13		2		7		8	75	8	146	274
830 W Evelyn Ave													
1081 Innovation Way		9						2					11
1111 Lockheed Martin Way		10						4					14
1152 Bordeaux Dr		21						3					24
1194 N. Mathilda Ave		10						2					12
1230 Oakmead Pkwy		3						1					4
1260 N Mathilda Ave		1						1					2
215 Moffett Park Dr		8						4					12
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave		6						1					7
589 W. Java Dr		23						4					27
610 N Mary Ave		60						12					72
615 N. Mathilda Ave		14											14
623 N Pastoria Ave		2											2
684 W. Maude Ave		30						7					37
810 W Maude Ave		18						4					22
901 Kifer Rd	4								2	13	1	19	39
1120 Kifer Rd	85					-28	-4		10	6		17	86
1155 Aster Ave		49						27					76
1250 Lakeside Dr		32						42					74
2502 Town Center Ln													

311 S Mathilda Ave													
520 Almanor Ave		6						1					7
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave		8						5					13
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave		2						1					3
1142 Dahlia Ct		13						8					21
160 Persian Dr													
370 San Aleso Ave		-1			1			1			-1		
1 AMD Place	-9	4						22				-2	15
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2			3			1		6
915 De Guigne Dr		-17						13					-4
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd		14						3					17
4301, 4401, 4551 Great America Pkwy		26				11	2	5					44
2620-2727 Augustine Dr		-6						42					36
2600, 2800 San Tomas Expy & 2400 Condensa St	2	24		4	2	8	1	8					49
5010 Old Ironsides Dr		146						30					176
3000 Bowers Ave				12	4	10	2				1		29
3700 El Camino Real		31						20					51
2950 Lakeside Dr		2						1					3
3607 Kifer Rd	24				3				7	33	23	107	197
City Place	7	120	4	8		8	5	109	9			1	271
3226 Scott Blvd													
2041 Mission College Blvd		4				1	1	3					9
3100-3200 Coronado Dr													
1 Great America Pkwy		4						8					12
3375 Scott Blvd		22						5					27
3001 Tasman Dr		8						2					10
Santa Clara LSAP			136	42	17	17	39	5			41	5	302
2350 & 2305 Mission College Blvd		14						3					17
3625 Peterson Way		49						10					59
3402 El Camino Real		5						4					9
3045 Stender Way								1					1
2931 El Camino Real		11						13					24
2343 Calle Del Mundo													
Total Approved Trips	128	817	153	66	31	27	53	469	36	127	74	293	2274
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	222	4314	484	343	210	328	401	1698	104	779	577	471	9931
Project Trips	24	0	0	0	6	0	0	0	11	112	59	156	368
Existing + Project	118	3497	331	277	185	301	348	1229	79	764	562	334	8025
Background + Project	246	4314	484	343	216	328	401	1698	115	891	636	627	10299

Traffix Node Number: 5613
Intersection Name: Lawrence Expressw& Monroe Street
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 03/07/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	353	3216	366	195	223	151	202	1245	161	673	488	240	7513
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr		6						10					16
1101 Elko Dr								9					9
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr		6						6					12
830 E. El Camino Real													
840 E El Camino Real													

861 E. El Camino Real														
1050 Kifer Rd		75						14						89
830 W Evelyn Ave														
1081 Innovation Way		9						2						11
1111 Lockheed Martin Way		10						4						14
1152 Bordeaux Dr		21						3						24
1194 N. Mathilda Ave		10						2						12
1230 Oakmead Pkwy		3						1						4
1260 N Mathilda Ave		1						1						2
215 Moffett Park Dr		8						4						12
265 Sobrante Way														
275 N Mathilda Ave														
824 San Aleso Ave														
445 N Mary Ave		6						1				1		8
589 W. Java Dr		23						4						27
610 N Mary Ave		57	3	1	2			11				9		83
615 N. Mathilda Ave		12	2											14
623 N Pastoria Ave		2												2
684 W. Maude Ave		27	4	1				6				2		40
810 W Maude Ave		17	2	1				4				1		25
901 Kifer Rd		13						2						15
1120 Kifer Rd		-17						7						-10
1155 Aster Ave	49				2				26	14	7	27		125
1250 Lakeside Dr		32						42						74
2502 Town Center Ln														
311 S Mathilda Ave														
520 Almanor Ave		5	2					1				1		9
675 Almanor Avenue														
803 W El Camino Real														
871 and 895 E Fremont Ave		8						5						13
223 N Mathilda Ave														
456 W Olive Ave														
1008 E El Camino Real														
1023 N Fair Oaks Ave														
1111, 1139 Karlstad Dr														
1122 Aster Ave	2								1	1		1		5
1142 Dahlia Ct	12	1			2			1			1	7		24
160 Persian Dr														
370 San Aleso Ave		-1						1						
1 AMD Place		4						22						26
617 E. Evelyn Ave														
625 E. Taylor Ave														
669 Old San Francisco Rd														
728, 740, 750, 760, and 814 San Aleso Ave								3						3
915 De Guigne Dr		-17						13						-4
5402 & 5450 Great America Pkwy		20						4						24
2350 & 2305 Mission College Blvd		14			7			3				2		26
4301, 4401, 4551 Great America Pkwy		37						7						44
2620-2727 Augustine Dr		-6						42						36
2600, 2800 San Tomas Expy & 2400 Condensa St		32			19			9				4		64
5010 Old Ironsides Dr		146						30						176
3000 Bowers Ave		10						2						12
3700 El Camino Real		31						20						51
2950 Lakeside Dr		2						1						3
3607 Kifer Rd	10	19	4	1				4				2		40
City Place	20	101	5	4	6		6	59	9	2	3	4		219
3226 Scott Blvd														
2041 Mission College Blvd		4			1			4				1		10
3100-3200 Coronado Dr														
1 Great America Pkwy		4						8						12
3375 Scott Blvd		22						5						27
3001 Tasman Dr		8						2						10
Santa Clara LSAP	1	16						40				6		63
2350 & 2305 Mission College Blvd		14			7			3				2		26
3625 Peterson Way	9	40						8				2		59
3402 El Camino Real		5						4						9
3045 Stender Way								1						1
2931 El Camino Real		11						13						24
2343 Calle Del Mundo														
Total Approved Trips	103	851	22	8	46	0	6	448	36	17	34	49		1620
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
Background Conditions	456	4067	388	203	269	151	208	1693	197	690	522	289		9133
Project Trips	0	112	0	0	0	0	0	11	0	0	0	0		123

Existing + Project	353	3328	366	195	223	151	202	1256	161	673	488	240	7636
Background + Project	456	4179	388	203	269	151	208	1704	197	690	522	289	9256

Traffix Node Number: 5325
Intersection Name: Oakmead Parkway & Central Expressway
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	222	293	274	81	1860	133	105	51	44	83	2233	32	5411

Approved Project Trips

1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr	1		4	3								1	9
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					8						42		50
830 W Evelyn Ave					1						1		2
1081 Innovation Way													
1111 Lockheed Martin Way					1						4		5
1152 Bordeaux Dr					3						27		30
1194 N. Mathilda Ave					1						8		9
1230 Oakmead Pkwy	1		4										5
1260 N Mathilda Ave					1						1		2
215 Moffett Park Dr					1						2		3
265 Sobrante Way					9						49		58
275 N Mathilda Ave					1						5		6
824 San Aleso Ave					5						6		11
445 N Mary Ave					3						17		20
589 W. Java Dr													
610 N Mary Ave					31						162		193
615 N. Mathilda Ave					-1						35		34
623 N Pastoria Ave					1						6		7
684 W. Maude Ave					14						75		89
810 W Maude Ave					9						46		55
901 Kifer Rd					1						7		8
1120 Kifer Rd					10						6		16
1155 Aster Ave					6						4		10
1250 Lakeside Dr			16	21									37
2502 Town Center Ln					59						59		118
311 S Mathilda Ave					4						2		6
520 Almanor Ave					4						29		33
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave					3						2		5
223 N Mathilda Ave					2						10		12
456 W Olive Ave					-7						-15		-22
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place			-5	1	17						7		20
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr			-3	3									
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd					32						7		39
4301, 4401, 4551 Great America Pkwy					37						8		45
2620-2727 Augustine Dr					-8						59		51
2600, 2800 San Tomas Expy & 2400 Condensa St					139						32		171
5010 Old Ironsides Dr	29				131						27	6	193

3000 Bowers Ave			1		13			3	6		6		29
3700 El Camino Real													
2950 Lakeside Dr	1											1	2
3607 Kifer Rd					4		4				12		20
City Place					89						14		103
3226 Scott Blvd													
2041 Mission College Blvd					7						8		15
3100-3200 Coronado Dr					13						3		16
1 Great America Pkwy					5						8		13
3375 Scott Blvd	17											4	21
3001 Tasman Dr													
Santa Clara LSAP		57				63	3	2			22	20	167
2350 & 2305 Mission College Blvd					32						7		39
3625 Peterson Way	36											7	43
3402 El Camino Real													
3045 Stender Way					2						1		3
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	85	57	17	28	683	63	7	5	6	0	811	39	1801
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	307	350	291	109	2543	196	112	56	50	83	3044	71	7212
Project Trips	0	0	0	0	6	0	0	0	0	0	62	0	68
Existing + Project	222	293	274	81	1866	133	105	51	44	83	2295	32	5479
Background + Project	307	350	291	109	2549	196	112	56	50	83	3106	71	7280

Traffix Node Number: 85
Intersection Name: Corvin Drive & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	82	0	317	63	400	0	0	0	0	0	1009	61	1932

Approved Project Trips

1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					2						8		10
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd											1		1
1120 Kifer Rd					-28						-4		-32
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													

520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					1						-1		
1 AMD Place													
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2						1		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy					11						2		13
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					14						2		16
5010 Old Ironsides Dr													
3000 Bowers Ave	47		52	6								5	110
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					3						19	4	26
City Place					16						9		25
3226 Scott Blvd													
2041 Mission College Blvd					1						1		2
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP	53		1	2	78						30	7	171
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	100	0	53	8	100	0	0	0	0	0	68	16	345
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	182	0	370	71	500	0	0	0	0	0	1077	77	2277
Project Trips	0	0	0	0	6	0	0	0	0	0	59	0	65
Existing + Project	82	0	317	63	406	0	0	0	0	0	1068	61	1997
Background + Project	182	0	370	71	506	0	0	0	0	0	1136	77	2342

Traffix Node Number: 5329
Intersection Name: Bowers Avenue & Central Expressway
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	276	885	179	83	1300	161	327	453	125	187	2402	135	6513
Existing Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Approved Project Trips

1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr					3						4		7
830 E. El Camino Real													
840 E El Camino Real													

861 E. El Camino Real													
1050 Kifer Rd				8						42		50	
830 W Evelyn Ave				1						1		2	
1081 Innovation Way													
1111 Lockheed Martin Way				1						4		5	
1152 Bordeaux Dr				3						27		30	
1194 N. Mathilda Ave				1						8		9	
1230 Oakmead Pkwy									1	3		4	
1260 N Mathilda Ave				1						1		2	
215 Moffett Park Dr				1						2		3	
265 Sobrante Way				9						49		58	
275 N Mathilda Ave				1						5		6	
824 San Aleso Ave				5						6		11	
445 N Mary Ave				3						17		20	
589 W. Java Dr													
610 N Mary Ave				31						162		193	
615 N. Mathilda Ave				-1						35		34	
623 N Pastoria Ave				1						6		7	
684 W. Maude Ave				14						75		89	
810 W Maude Ave				9						46		55	
901 Kifer Rd				1						7		8	
1120 Kifer Rd				10						6		16	
1155 Aster Ave				6						4		10	
1250 Lakeside Dr				21						16		37	
2502 Town Center Ln				59						59		118	
311 S Mathilda Ave				4						2		6	
520 Almanor Ave				4						29		33	
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave				3						2		5	
223 N Mathilda Ave				2						10		12	
456 W Olive Ave				-7						-15		-22	
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		-1		18			7			2		26	
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave													
915 De Guigne Dr				3						-3			
5402 & 5450 Great America Pkwy		20					4					24	
2350 & 2305 Mission College Blvd	32	14					3				7	56	
4301, 4401, 4551 Great America Pkwy	37	48	15	3			10				8	121	
2620-2727 Augustine Dr	-8					-4	29				59	76	
2600, 2800 San Tomas Expy & 2400 Condensa St		4	7	20	111		2	27	28	32		231	
5010 Old Ironsides Dr	131	168	182	37				34			27	579	
3000 Bowers Ave		24				12	7	85		32	44	204	
3700 El Camino Real													
2950 Lakeside Dr			1	1								2	
3607 Kifer Rd					4		4			15		23	
City Place	3	87	85	8	82	1		24	4	5	6	3	308
3226 Scott Blvd								4					4
2041 Mission College Blvd		1			7			2			6	1	17
3100-3200 Coronado Dr					13	29		6				3	51
1 Great America Pkwy	5	4	1	2				8				8	28
3375 Scott Blvd		6			3			1	1				11
3001 Tasman Dr		11	1					2					14
Santa Clara LSAP	13	19			51	5	2	7			19	5	121
2350 & 2305 Mission College Blvd	32	14						3				7	56
3625 Peterson Way		13		6				3					22
3402 El Camino Real													
3045 Stender Way					2							1	3
2931 El Camino Real		9						10					19
2343 Calle Del Mundo		1						2					3
Total Approved Trips	245	442	292	77	488	43	15	271	33	6	722	173	2807
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	521	1327	471	160	1788	204	342	724	158	193	3124	308	9320
Project Trips	0	0	0	0	6	0	0	0	0	0	62	0	68

Existing + Project	276	885	179	83	1306	161	327	453	125	187	2464	135	6581
Background + Project	521	1327	471	160	1794	204	342	724	158	193	3186	308	9388

Traffix Node Number: 84
Intersection Name: Bowers Avenue & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 11/15/17
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	154	1115	84	219	145	147	53	377	43	359	645	353	3694
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					2						8		10
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy		1											1
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd											1		1
1120 Kifer Rd					-28						-4		-32
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave													
1 AMD Place		-1						7					6
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2						1		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy		20						4					24
2350 & 2305 Mission College Blvd		14						3					17
4301, 4401, 4551 Great America Pkwy	11	37						8				2	58
2620-2727 Augustine Dr		-4						29					25
2600, 2800 San Tomas Expy & 2400 Condensa St			4	55	14	29	5	2			2		111
5010 Old Ironsides Dr		168						34					202

3000 Bowers Ave		24	42		2				8	15	20	58	169
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					2				1	6	10	4	23
City Place	9	50		6	5	2		14		9		4	99
3226 Scott Blvd								4					4
2041 Mission College Blvd	1	1						1				1	4
3100-3200 Coronado Dr		29						6					35
1 Great America Pkwy		4						8					12
3375 Scott Blvd		6						2					8
3001 Tasman Dr		8	2	1				2					13
Santa Clara LSAP	23				22				34	14	8	9	110
2350 & 2305 Mission College Blvd		14						3					17
3625 Peterson Way		13						3					16
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real		9						10					19
2343 Calle Del Mundo		1						2					3
Total Approved Trips	44	394	48	62	21	31	5	142	43	44	46	78	958
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	198	1509	132	281	166	178	58	519	86	403	691	431	4652
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	0	0	0	6	0	0	0	0	0	59	0	65
Existing + Project	154	1115	84	219	151	147	53	377	43	359	704	353	3759
Background + Project	198	1509	132	281	172	178	58	519	86	403	750	431	4717

Traffix Node Number: 99
Intersection Name: Semiconductor Drive & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 09/11/18
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	35	0	96	14	437	0	0	0	0	0	985	8	1575
Approved Project Trips													
1040 Sunnyvale-Saratoga Rd													
1080 Stewart Dr													
1101 Elko Dr													
1120 Innovation Way													
1235 Bordeaux Dr													
590 W El Camino Real													
696 W El Camino Real													
750 Lakeway Dr													
830 E. El Camino Real													
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd					24						191		215
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd					6						33		39
1120 Kifer Rd					15	102	37		64	53			271
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													

311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					1						-1		
1 AMD Place					-9						-2		-11
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2						1		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					5						1		6
5010 Old Ironsides Dr													
3000 Bowers Ave					4						1		5
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd	24		114	3	6						1	5	153
City Place					16						1		17
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					17						24		41
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	24	0	114	3	87	102	37	0	64	53	250	5	739
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	59	0	210	17	524	102	37	0	64	53	1235	13	2314
Background Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Project Trips	0	0	0	0	41	0	0	0	0	0	327	0	368
Existing + Project	35	0	96	14	478	0	0	0	0	0	1312	8	1943
Background + Project	59	0	210	17	565	102	37	0	64	53	1562	13	2682

Traffix Node Number: 100
Intersection Name: 1020 Kifer Rd Driveway & Kifer Road
Peak Hour: PM
Date of Analysis: 10/17/19
Count Date: 01/00/00
Scenario: Intuitive Surgical 2019

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	548	0	0	0	0	0	823	0	1371

Approved Project Trips

1040 Sunnyvale-Saratoga Rd
1080 Stewart Dr
1101 Elko Dr
1120 Innovation Way
1235 Bordeaux Dr
590 W El Camino Real
696 W El Camino Real
750 Lakeway Dr
830 E. El Camino Real

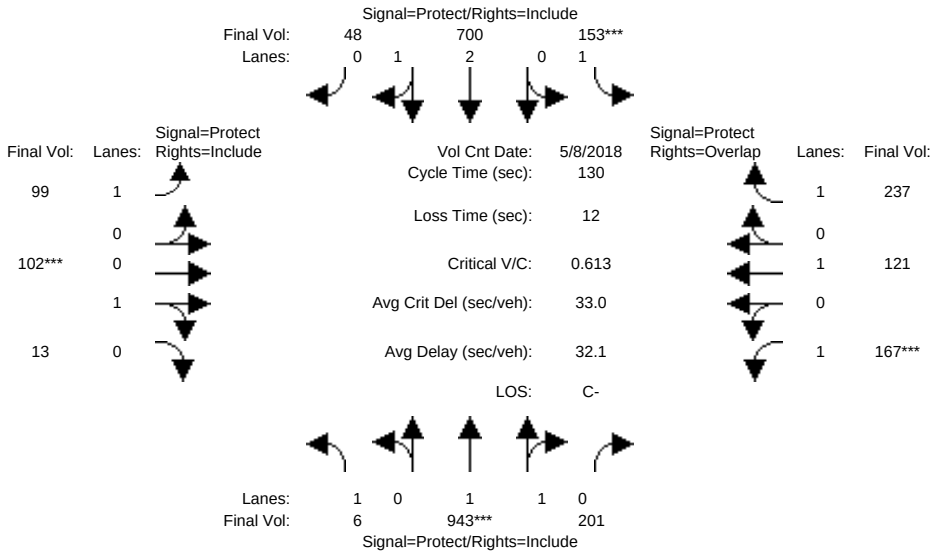
840 E El Camino Real													
861 E. El Camino Real													
1050 Kifer Rd						24	144		205	29			402
830 W Evelyn Ave													
1081 Innovation Way													
1111 Lockheed Martin Way													
1152 Bordeaux Dr													
1194 N. Mathilda Ave													
1230 Oakmead Pkwy													
1260 N Mathilda Ave													
215 Moffett Park Dr													
265 Sobrante Way													
275 N Mathilda Ave													
824 San Aleso Ave													
445 N Mary Ave													
589 W. Java Dr													
610 N Mary Ave													
615 N. Mathilda Ave													
623 N Pastoria Ave													
684 W. Maude Ave													
810 W Maude Ave													
901 Kifer Rd													
1120 Kifer Rd					36						102		138
1155 Aster Ave													
1250 Lakeside Dr													
2502 Town Center Ln													
311 S Mathilda Ave													
520 Almanor Ave													
675 Almanor Avenue													
803 W El Camino Real													
871 and 895 E Fremont Ave													
223 N Mathilda Ave													
456 W Olive Ave													
1008 E El Camino Real													
1023 N Fair Oaks Ave													
1111, 1139 Karlstad Dr													
1122 Aster Ave													
1142 Dahlia Ct													
160 Persian Dr													
370 San Aleso Ave					1						-1		
1 AMD Place					-9						-2		-11
617 E. Evelyn Ave													
625 E. Taylor Ave													
669 Old San Francisco Rd													
728, 740, 750, 760, and 814 San Aleso Ave					2						1		3
915 De Guigne Dr													
5402 & 5450 Great America Pkwy													
2350 & 2305 Mission College Blvd													
4301, 4401, 4551 Great America Pkwy													
2620-2727 Augustine Dr													
2600, 2800 San Tomas Expy & 2400 Condensa St					5						1		6
5010 Old Ironsides Dr													
3000 Bowers Ave					4						1		5
3700 El Camino Real													
2950 Lakeside Dr													
3607 Kifer Rd					29						6		35
City Place					16						1		17
3226 Scott Blvd													
2041 Mission College Blvd													
3100-3200 Coronado Dr													
1 Great America Pkwy													
3375 Scott Blvd													
3001 Tasman Dr													
Santa Clara LSAP					17						24		41
2350 & 2305 Mission College Blvd													
3625 Peterson Way													
3402 El Camino Real													
3045 Stender Way													
2931 El Camino Real													
2343 Calle Del Mundo													
Total Approved Trips	0	0	0	0	101	24	144	0	205	29	133	0	636
Approved Trips Check	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Background Conditions	0	0	0	0	649	24	144	0	205	29	956	0	2007
Project Trips	161	0	177	42	-1	0	0	0	0	0	150	22	551

Existing + Project	161	0	177	42	547	0	0	0	0	0	973	22	1922
Background + Project	161	0	177	42	648	24	144	0	205	29	1106	22	2558

Appendix C
Level of Service Calculations

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #41: Fair Oaks Ave & Duane Ave



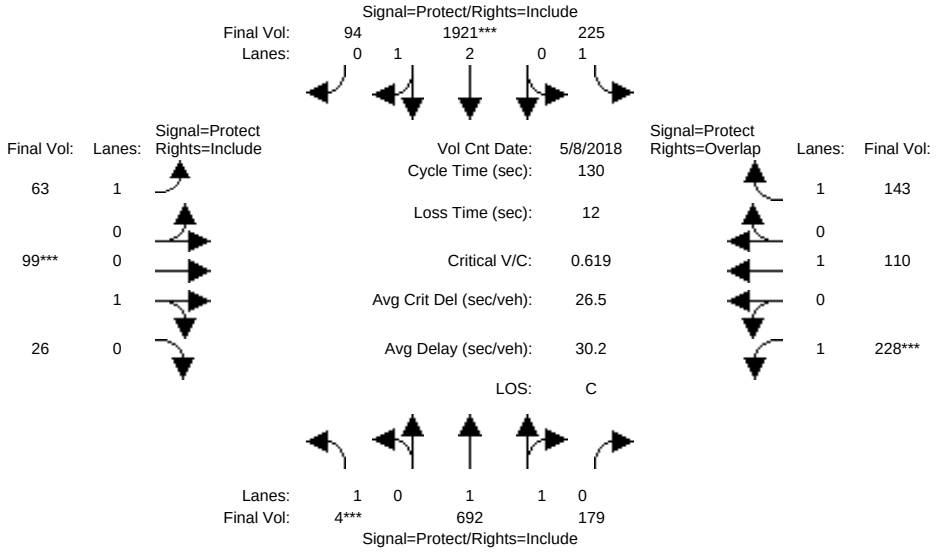
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	6	943	201	153	700	48	99	102	13	167	121	237
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	943	201	153	700	48	99	102	13	167	121	237
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	943	201	153	700	48	99	102	13	167	121	237
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	943	201	153	700	48	99	102	13	167	121	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	943	201	153	700	48	99	102	13	167	121	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	943	201	153	700	48	99	102	13	167	121	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	2.80	0.20	1.00	0.89	0.11	1.00	1.00	1.00
Final Sat.:	1750	3049	650	1750	5240	359	1750	1597	203	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.09	0.13	0.13	0.06	0.06	0.06	0.10	0.06	0.14
Crit Moves:		****		****				****		****		
Green Time:	24.2	65.6	65.6	18.6	60.0	60.0	14.3	13.6	13.6	20.3	19.5	38.0
Volume/Cap:	0.02	0.61	0.61	0.61	0.29	0.29	0.51	0.61	0.61	0.61	0.42	0.46
Uniform Del:	43.2	23.1	23.1	52.3	21.8	21.8	54.5	55.7	55.7	51.2	50.2	37.6
IncremntDel:	0.0	0.6	0.6	4.4	0.1	0.1	2.3	5.9	5.9	4.1	1.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	23.7	23.7	56.8	21.8	21.8	56.9	61.6	61.6	55.3	51.2	38.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	23.7	23.7	56.8	21.8	21.8	56.9	61.6	61.6	55.3	51.2	38.3
LOS by Move:	D	C	C	E+	C+	C+	E+	E	E	E+	D-	D+
HCM2kAvgQ:	0	16	16	6	6	6	5	6	6	8	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #41: Fair Oaks Ave & Duane Ave



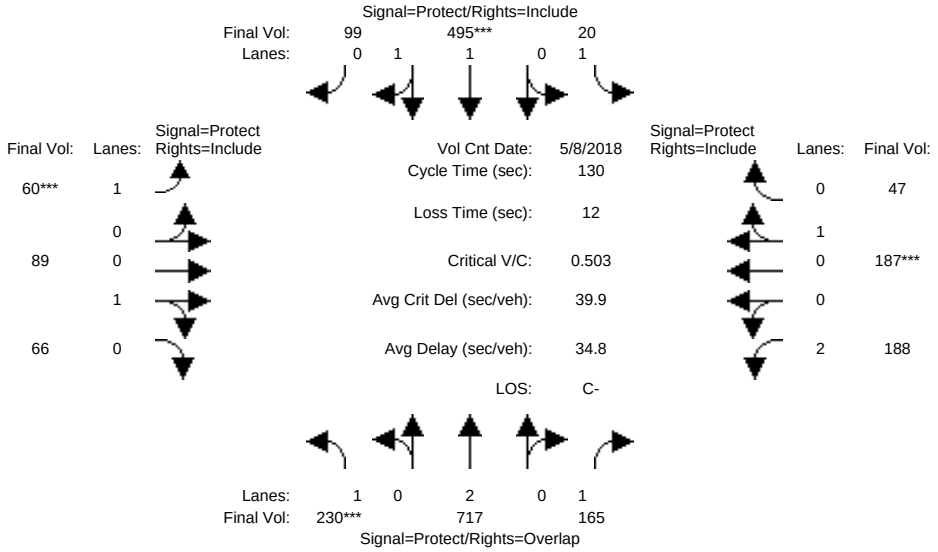
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	4	692	179	225	1921	94	63	99	26	228	110	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	692	179	225	1921	94	63	99	26	228	110	143
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	692	179	225	1921	94	63	99	26	228	110	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	692	179	225	1921	94	63	99	26	228	110	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	692	179	225	1921	94	63	99	26	228	110	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	692	179	225	1921	94	63	99	26	228	110	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.58	0.42	1.00	2.85	0.15	1.00	0.79	0.21	1.00	1.00	1.00
Final Sat.:	1750	2939	760	1750	5338	261	1750	1426	374	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.13	0.36	0.36	0.04	0.07	0.07	0.13	0.06	0.08
Crit Moves:	****				****			****			****	
Green Time:	7.0	50.7	50.7	27.7	71.4	71.4	16.3	13.8	13.8	25.8	23.3	51.0
Volume/Cap:	0.04	0.60	0.60	0.60	0.66	0.66	0.29	0.66	0.66	0.66	0.32	0.21
Uniform Del:	58.3	31.6	31.6	46.2	20.6	20.6	51.6	55.8	55.8	48.0	46.5	26.1
IncremntDel:	0.2	0.7	0.7	2.8	0.5	0.5	0.7	8.0	8.0	4.5	0.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	32.4	32.4	49.0	21.2	21.2	52.3	63.8	63.8	52.5	47.0	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	32.4	32.4	49.0	21.2	21.2	52.3	63.8	63.8	52.5	47.0	26.3
LOS by Move:	E+	C-	C-	D	C+	C+	D-	E	E	D-	D	C
HCM2kAvgQ:	0	14	14	9	19	19	3	6	6	10	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #42: Fair Oaks Ave & Arques Ave



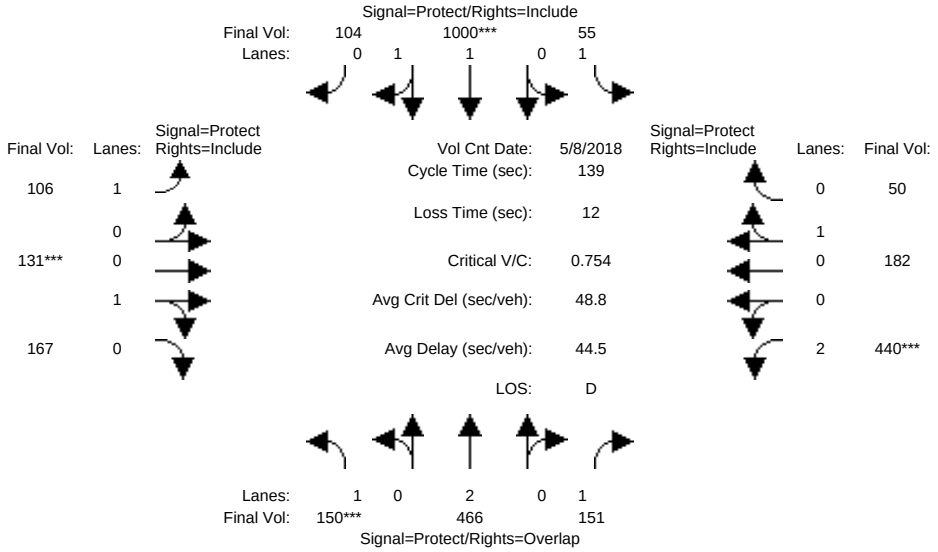
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	230	717	165	20	495	99	60	89	66	188	187	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	717	165	20	495	99	60	89	66	188	187	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	717	165	20	495	99	60	89	66	188	187	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	717	165	20	495	99	60	89	66	188	187	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	717	165	20	495	99	60	89	66	188	187	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	717	165	20	495	99	60	89	66	188	187	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.66	0.34	1.00	0.57	0.43	2.00	0.80	0.20
Final Sat.:	1750	3800	1750	1750	3083	617	1750	1034	766	3150	1438	362
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.09	0.01	0.16	0.16	0.03	0.09	0.09	0.06	0.13	0.13
Crit Moves:	****				****		****				****	
Green Time:	34.0	58.7	76.1	16.8	41.5	41.5	8.9	25.1	25.1	17.4	33.6	33.6
Volume/Cap:	0.50	0.42	0.16	0.09	0.50	0.50	0.50	0.45	0.45	0.45	0.50	0.50
Uniform Del:	40.8	24.1	12.3	49.9	35.9	35.9	58.4	46.3	46.3	51.9	41.1	41.1
IncremntDel:	0.9	0.2	0.1	0.2	0.3	0.3	3.4	0.9	0.9	0.8	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.7	24.2	12.4	50.1	36.2	36.2	61.8	47.2	47.2	52.6	41.9	41.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	24.2	12.4	50.1	36.2	36.2	61.8	47.2	47.2	52.6	41.9	41.9
LOS by Move:	D	C	B	D	D+	D+	E	D	D	D-	D	D
HCM2kAvgQ:	8	9	3	1	10	10	3	6	6	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #42: Fair Oaks Ave & Arques Ave



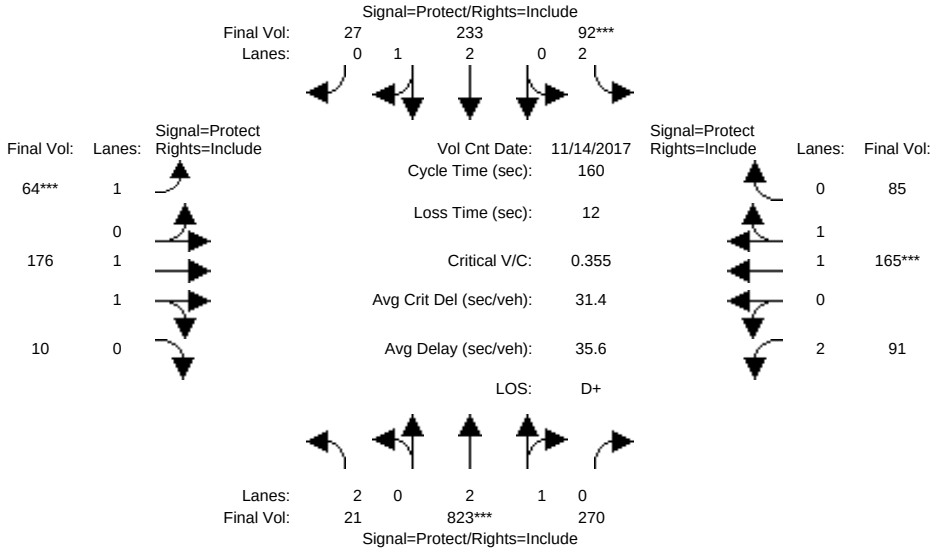
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	150	466	151	55	1000	104	106	131	167	440	182	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	466	151	55	1000	104	106	131	167	440	182	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	466	151	55	1000	104	106	131	167	440	182	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	466	151	55	1000	104	106	131	167	440	182	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	466	151	55	1000	104	106	131	167	440	182	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	466	151	55	1000	104	106	131	167	440	182	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	0.44	0.56	2.00	0.78	0.22
Final Sat.:	1750	3800	1750	1750	3351	349	1750	791	1009	3150	1412	388
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.09	0.03	0.30	0.30	0.06	0.17	0.17	0.14	0.13	0.13
Crit Moves:	****				****			****		****		
Green Time:	15.8	50.2	75.9	20.6	55.0	55.0	18.0	30.5	30.5	25.7	38.3	38.3
Volume/Cap:	0.75	0.34	0.16	0.21	0.75	0.75	0.47	0.75	0.75	0.75	0.47	0.47
Uniform Del:	59.7	32.4	15.7	52.1	36.2	36.2	56.1	50.7	50.7	53.6	41.9	41.9
IncremntDel:	15.1	0.1	0.1	0.4	2.3	2.3	1.5	8.0	8.0	5.6	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.8	32.5	15.8	52.5	38.5	38.5	57.6	58.8	58.8	59.2	42.6	42.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.8	32.5	15.8	52.5	38.5	38.5	57.6	58.8	58.8	59.2	42.6	42.6
LOS by Move:	E	C-	B	D-	D+	D+	E+	E+	E+	E+	D	D
HCM2kAvgQ:	7	7	3	2	22	22	5	14	14	11	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #43: Wolfe Rd & Arques Ave



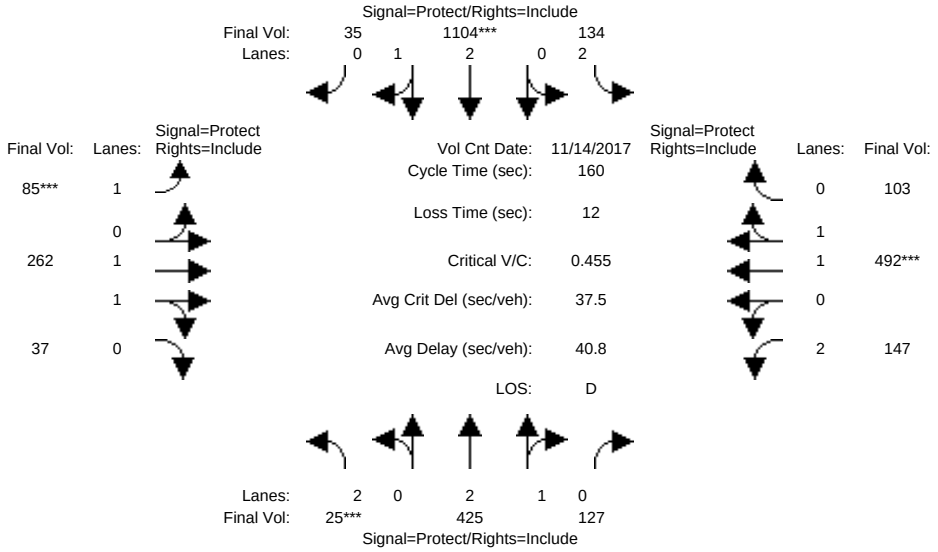
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	21	823	270	92	233	27	64	176	10	91	165	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	823	270	92	233	27	64	176	10	91	165	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	823	270	92	233	27	64	176	10	91	165	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	823	270	92	233	27	64	176	10	91	165	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	823	270	92	233	27	64	176	10	91	165	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	823	270	92	233	27	64	176	10	91	165	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	0.99	0.95
Lanes:	2.00	2.23	0.77	2.00	2.68	0.32	1.00	1.89	0.11	2.00	1.30	0.70
Final Sat.:	3150	4215	1383	3150	5018	581	1750	3501	199	3150	2441	1258
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.03	0.05	0.05	0.04	0.05	0.05	0.03	0.07	0.07
Crit Moves:		****		****			****				****	
Green Time:	41.6	87.9	87.9	13.2	59.5	59.5	16.5	27.6	27.6	19.3	30.4	30.4
Volume/Cap:	0.03	0.36	0.36	0.36	0.12	0.12	0.36	0.29	0.29	0.24	0.36	0.36
Uniform Del:	44.1	20.2	20.2	69.4	33.1	33.1	66.8	57.7	57.7	63.7	56.3	56.3
IncremntDel:	0.0	0.1	0.1	0.8	0.0	0.0	1.2	0.3	0.3	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.1	20.2	20.2	70.3	33.2	33.2	68.0	57.9	57.9	64.0	56.6	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	20.2	20.2	70.3	33.2	33.2	68.0	57.9	57.9	64.0	56.6	56.6
LOS by Move:	D	C+	C+	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	0	10	10	3	3	3	3	4	4	2	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #43: Wolfe Rd & Arques Ave



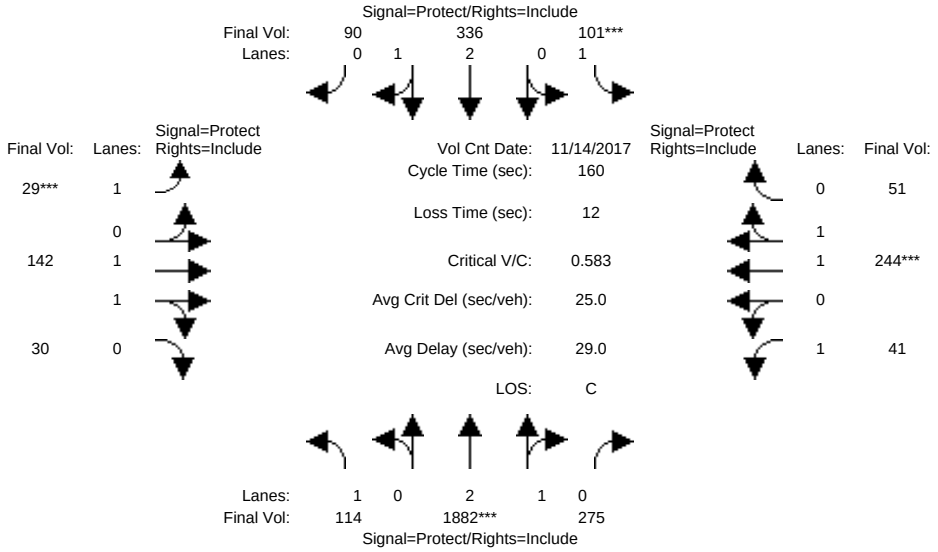
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	25	425	127	134	1104	35	85	262	37	147	492	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	425	127	134	1104	35	85	262	37	147	492	103
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	425	127	134	1104	35	85	262	37	147	492	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	425	127	134	1104	35	85	262	37	147	492	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	425	127	134	1104	35	85	262	37	147	492	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	425	127	134	1104	35	85	262	37	147	492	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.28	0.72	2.00	2.90	0.10	1.00	1.75	0.25	2.00	1.64	0.36
Final Sat.:	3150	4310	1288	3150	5428	172	1750	3242	458	3150	3059	640
Capacity Analysis Module:												
Vol/Sat:	0.01	0.10	0.10	0.04	0.20	0.20	0.05	0.08	0.08	0.05	0.16	0.16
Crit Moves:	****				****		****				****	
Green Time:	7.0	53.0	53.0	23.5	69.5	69.5	16.6	45.3	45.3	26.2	54.9	54.9
Volume/Cap:	0.18	0.30	0.30	0.29	0.47	0.47	0.47	0.29	0.29	0.29	0.47	0.47
Uniform Del:	73.7	39.7	39.7	60.8	32.1	32.1	67.6	44.7	44.7	58.7	41.1	41.1
IncremntDel:	0.6	0.1	0.1	0.3	0.1	0.1	1.9	0.2	0.2	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.4	39.8	39.8	61.2	32.3	32.3	69.5	44.8	44.8	59.0	41.4	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	39.8	39.8	61.2	32.3	32.3	69.5	44.8	44.8	59.0	41.4	41.4
LOS by Move:	E	D	D	E	C-	C-	E	D	D	E+	D	D
HCM2kAvgQ:	1	6	6	3	13	13	4	5	5	4	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #44: Wolfe Rd & Kifer Rd



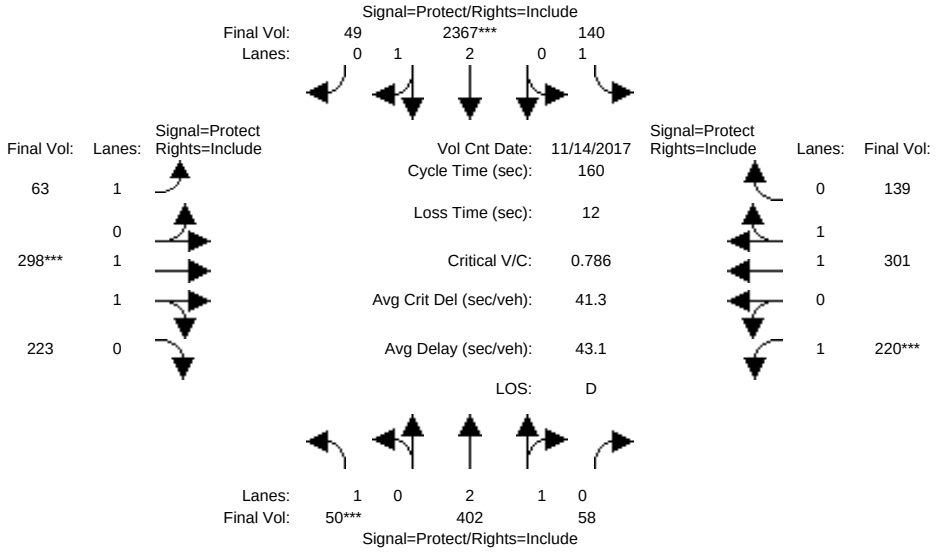
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	114	1882	275	101	336	90	29	142	30	41	244	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	1882	275	101	336	90	29	142	30	41	244	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	1882	275	101	336	90	29	142	30	41	244	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	1882	275	101	336	90	29	142	30	41	244	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	1882	275	101	336	90	29	142	30	41	244	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	1882	275	101	336	90	29	142	30	41	244	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	2.60	0.40	1.00	2.34	0.66	1.00	1.64	0.36	1.00	1.64	0.36
Final Sat.:	1750	4885	714	1750	4415	1183	1750	3054	645	1750	3060	640
Capacity Analysis Module:												
Vol/Sat:	0.07	0.39	0.39	0.06	0.08	0.08	0.02	0.05	0.05	0.02	0.08	0.08
Crit Moves:		****		****			****				****	
Green Time:	55.1	104	103.9	15.6	64.4	64.4	7.0	16.8	16.8	11.7	21.5	21.5
Volume/Cap:	0.19	0.59	0.59	0.59	0.19	0.19	0.38	0.44	0.44	0.32	0.59	0.59
Uniform Del:	36.8	16.0	16.0	69.2	30.9	30.9	74.4	67.2	67.2	70.3	65.1	65.1
IncremntDel:	0.2	0.3	0.3	5.5	0.0	0.0	3.1	0.8	0.8	1.4	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.9	16.3	16.3	74.7	31.0	31.0	77.5	68.0	68.0	71.8	67.1	67.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	16.3	16.3	74.7	31.0	31.0	77.5	68.0	68.0	71.8	67.1	67.1
LOS by Move:	D+	B	B	E	C	C	E-	E	E	E	E	E
HCM2kAvgQ:	4	20	20	5	4	4	1	4	4	2	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #44: Wolfe Rd & Kifer Rd



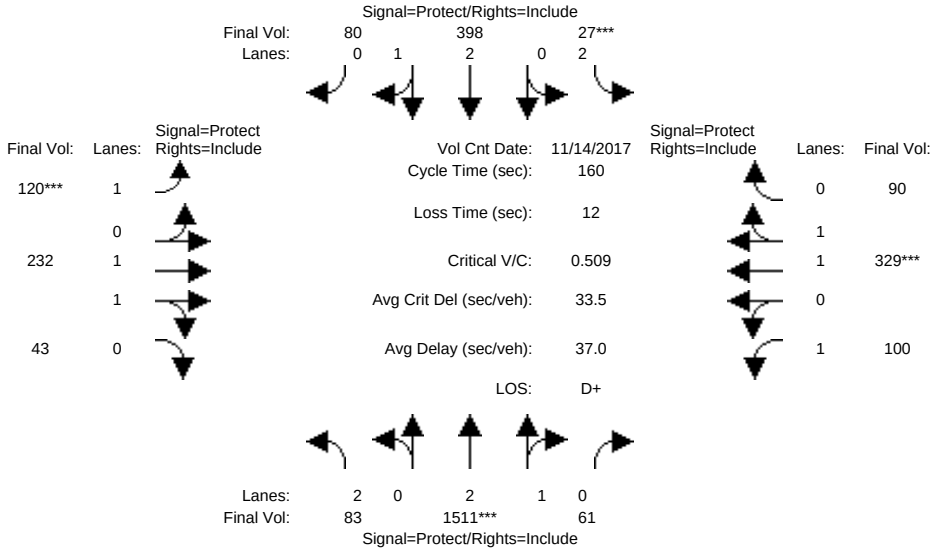
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	50	402	58	140	2367	49	63	298	223	220	301	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	402	58	140	2367	49	63	298	223	220	301	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	402	58	140	2367	49	63	298	223	220	301	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	402	58	140	2367	49	63	298	223	220	301	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	402	58	140	2367	49	63	298	223	220	301	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	402	58	140	2367	49	63	298	223	220	301	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.61	0.39	1.00	2.94	0.06	1.00	1.12	0.88	1.00	1.35	0.65
Final Sat.:	1750	4893	706	1750	5486	114	1750	2115	1583	1750	2530	1168
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.08	0.43	0.43	0.04	0.14	0.14	0.13	0.12	0.12
Crit Moves:	****				****			****			****	
Green Time:	7.0	47.7	47.7	46.4	87.1	87.1	14.5	28.5	28.5	25.4	39.4	39.4
Volume/Cap:	0.65	0.28	0.28	0.28	0.79	0.79	0.40	0.79	0.79	0.79	0.48	0.48
Uniform Del:	75.3	42.9	42.9	43.8	29.2	29.2	68.6	62.9	62.9	64.8	51.6	51.6
IncremntDel:	18.4	0.1	0.1	0.3	1.5	1.5	1.6	6.5	6.5	14.3	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	43.0	43.0	44.1	30.7	30.7	70.3	69.5	69.5	79.1	52.0	52.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	43.0	43.0	44.1	30.7	30.7	70.3	69.5	69.5	79.1	52.0	52.0
LOS by Move:	F	D	D	D	C	C	E	E	E	E-	D-	D-
HCM2kAvgQ:	3	6	6	5	30	30	3	13	13	12	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #45: Wolfe Rd & Reed Ave



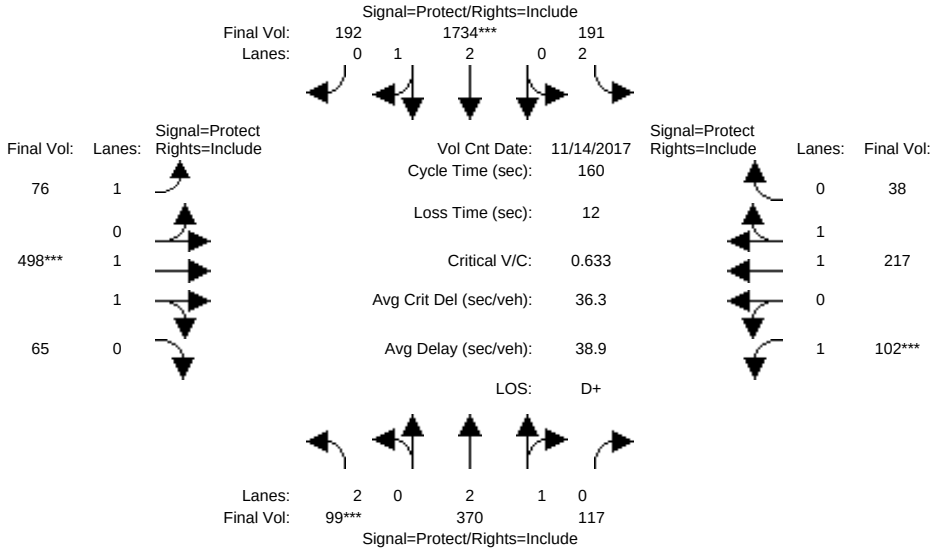
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	1511	61	27	398	80	120	232	43	100	329	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1511	61	27	398	80	120	232	43	100	329	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1511	61	27	398	80	120	232	43	100	329	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1511	61	27	398	80	120	232	43	100	329	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1511	61	27	398	80	120	232	43	100	329	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1511	61	27	398	80	120	232	43	100	329	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.88	0.12	2.00	2.48	0.52	1.00	1.68	0.32	1.00	1.56	0.44
Final Sat.:	3150	5382	217	3150	4662	937	1750	3121	578	1750	2905	795
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.09	0.09	0.07	0.07	0.07	0.06	0.11	0.11
Crit Moves:		****		****			****				****	
Green Time:	31.4	85.6	85.6	7.0	61.2	61.2	20.9	31.3	31.3	24.1	34.5	34.5
Volume/Cap:	0.13	0.52	0.52	0.20	0.22	0.22	0.52	0.38	0.38	0.38	0.52	0.52
Uniform Del:	53.1	24.1	24.1	73.8	33.3	33.3	64.9	55.9	55.9	61.2	55.5	55.5
IncremntDel:	0.1	0.2	0.2	0.7	0.1	0.1	2.2	0.3	0.3	0.9	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.2	24.2	24.2	74.5	33.4	33.4	67.2	56.2	56.2	62.1	56.1	56.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.2	24.2	24.2	74.5	33.4	33.4	67.2	56.2	56.2	62.1	56.1	56.1
LOS by Move:	D-	C	C	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	2	16	16	1	5	5	6	6	6	5	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #45: Wolfe Rd & Reed Ave



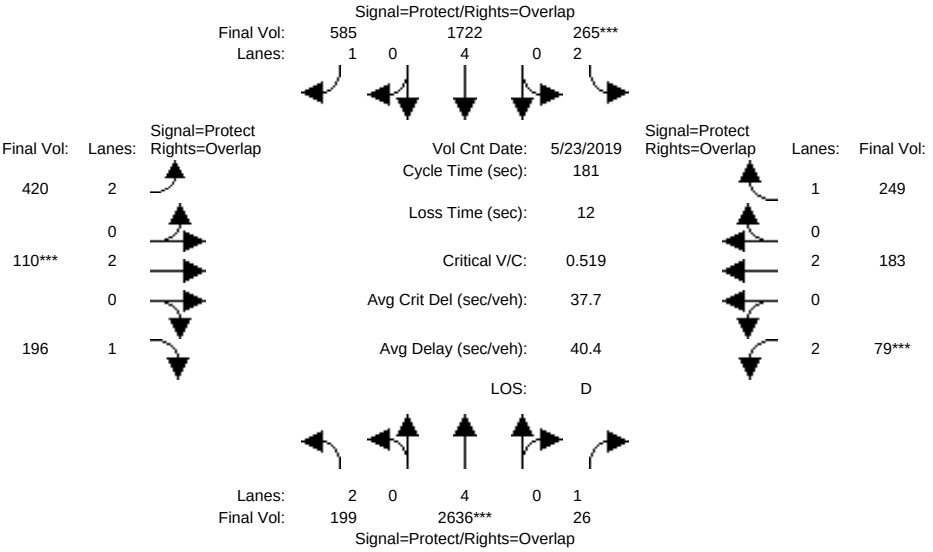
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	370	117	191	1734	192	76	498	65	102	217	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	370	117	191	1734	192	76	498	65	102	217	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	370	117	191	1734	192	76	498	65	102	217	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	370	117	191	1734	192	76	498	65	102	217	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	370	117	191	1734	192	76	498	65	102	217	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	370	117	191	1734	192	76	498	65	102	217	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.25	0.75	2.00	2.69	0.31	1.00	1.76	0.24	1.00	1.69	0.31
Final Sat.:	3150	4253	1345	3150	5041	558	1750	3273	427	1750	3148	551
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.06	0.34	0.34	0.04	0.15	0.15	0.06	0.07	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.9	55.9	55.9	38.9	86.9	86.9	20.6	38.4	38.4	14.7	32.5	32.5
Volume/Cap:	0.63	0.25	0.25	0.25	0.63	0.63	0.34	0.63	0.63	0.63	0.34	0.34
Uniform Del:	74.6	37.1	37.1	48.7	25.5	25.5	63.4	54.5	54.5	70.0	54.5	54.5
IncremntDel:	8.2	0.1	0.1	0.2	0.4	0.4	0.9	1.5	1.5	8.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.8	37.2	37.2	48.9	25.9	25.9	64.3	56.0	56.0	78.0	54.8	54.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.8	37.2	37.2	48.9	25.9	25.9	64.3	56.0	56.0	78.0	54.8	54.8
LOS by Move:	F	D+	D+	D	C	C	E	E+	E+	E-	D-	D-
HCM2kAvgQ:	3	5	5	4	21	21	4	12	12	5	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



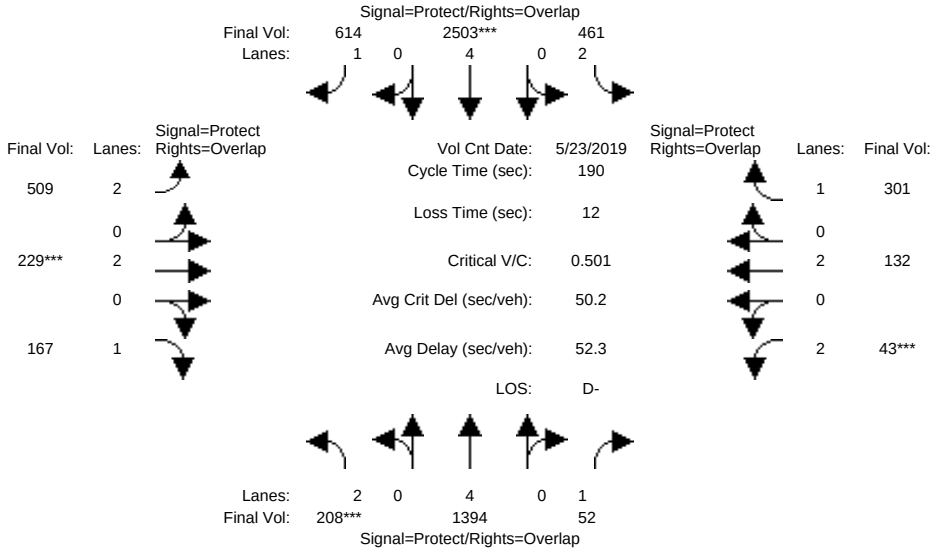
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	199	2636	26	265	1722	585	420	110	196	79	183	249
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	2636	26	265	1722	585	420	110	196	79	183	249
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	2636	26	265	1722	585	420	110	196	79	183	249
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	2636	26	265	1722	585	420	110	196	79	183	249
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	2636	26	265	1722	585	420	110	196	79	183	249
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	2636	26	265	1722	585	420	110	196	79	183	249
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.01	0.08	0.23	0.33	0.13	0.03	0.11	0.03	0.05	0.14
Crit Moves:		****		****				****		****		
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	0.66	0.72	0.03	0.75	0.46	0.53	1.01	0.13	0.36	0.43	0.34	0.56
Uniform Del:	79.1	37.5	19.6	77.9	29.6	18.8	78.6	57.1	48.2	82.4	69.8	58.5
IncremntDel:	5.6	0.7	0.0	8.6	0.1	0.5	47.8	0.1	0.4	1.6	0.4	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.7	30.5	13.8	86.5	23.0	9.9	126.4	57.2	48.6	84.0	70.2	60.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.7	30.5	13.8	86.5	23.0	9.9	126.4	57.2	48.6	84.0	70.2	60.1
LOS by Move:	F	C	B	F	C+	A	F	E+	D	F	E	E
HCM2kAvgQ:	6	23	0	10	11	10	19	2	9	3	5	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



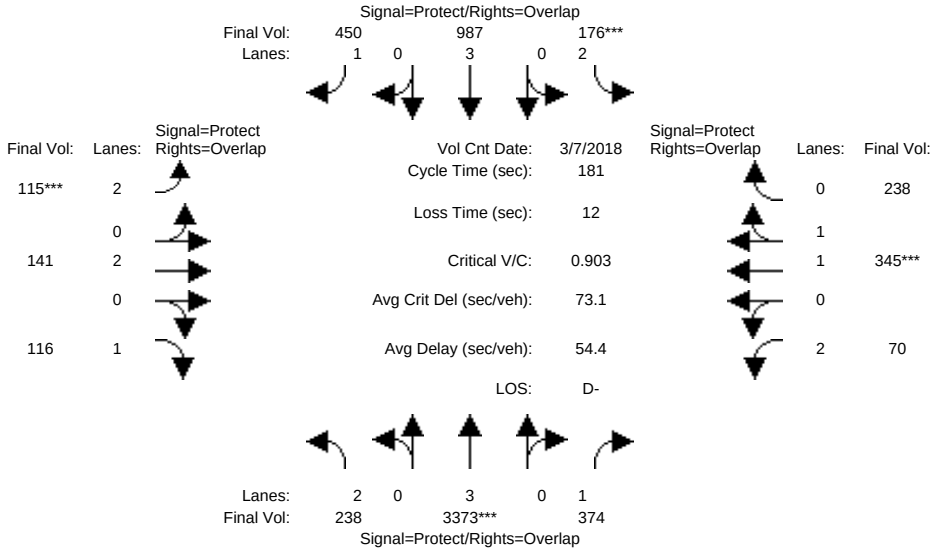
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	208	1394	52	461	2503	614	509	229	167	43	132	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1394	52	461	2503	614	509	229	167	43	132	301
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	1394	52	461	2503	614	509	229	167	43	132	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1394	52	461	2503	614	509	229	167	43	132	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1394	52	461	2503	614	509	229	167	43	132	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1394	52	461	2503	614	509	229	167	43	132	301
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.18	0.03	0.15	0.33	0.35	0.16	0.06	0.10	0.01	0.03	0.17
Crit Moves:	****				****			****		****		
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	0.62	0.49	0.07	0.88	0.76	0.57	0.89	0.21	0.25	0.26	0.23	0.54
Uniform Del:	81.3	45.6	32.2	77.4	45.4	21.7	76.0	52.2	39.4	86.4	70.7	53.2
IncremntDel:	3.7	0.1	0.0	15.8	1.1	0.7	16.2	0.1	0.2	0.8	0.2	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.0	42.2	27.9	93.1	46.5	22.5	92.2	52.3	39.6	87.3	70.9	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	42.2	27.9	93.1	46.5	22.5	92.2	52.3	39.6	87.3	70.9	54.3
LOS by Move:	F	D	C	F	D	C+	F	D-	D	F	E	D-
HCM2kAvgQ:	7	13	1	18	31	22	20	5	7	2	3	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #51: Lawrence Expwy & Kifer Rd



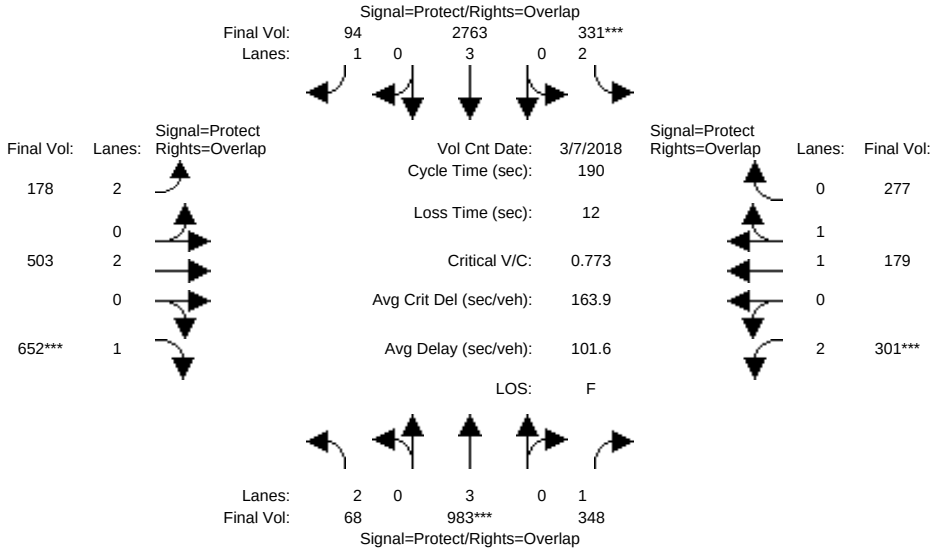
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	238	3877	374	176	1134	450	115	141	116	70	345	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	3877	374	176	1134	450	115	141	116	70	345	238
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	3877	374	176	1134	450	115	141	116	70	345	238
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	238	3373	374	176	987	450	115	141	116	70	345	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	3373	374	176	987	450	115	141	116	70	345	238
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	3373	374	176	987	450	115	141	116	70	345	238
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.94
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.16	0.84
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2173	1499
Capacity Analysis Module:												
Vol/Sat:	0.08	0.59	0.21	0.06	0.17	0.26	0.04	0.04	0.07	0.02	0.16	0.16
Crit Moves:		****		****			****				****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	0.54	1.06	0.35	0.59	0.34	0.44	0.52	0.23	0.22	0.37	1.07	0.65
Uniform Del:	72.5	40.0	16.8	78.6	25.8	21.0	81.1	66.5	47.7	81.8	77.1	61.6
IncremntDel:	1.4	34.9	0.2	3.1	0.1	0.3	2.1	0.2	0.2	1.2	58.1	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.9	61.6	9.1	81.7	19.3	13.1	83.2	66.7	47.9	83.1	135	63.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.9	61.6	9.1	81.7	19.3	13.1	83.2	66.7	47.9	83.1	135	63.4
LOS by Move:	E	E	A	F	B-	B	F	E	D	F	F	E
HCM2kAvgQ:	7	66	5	6	7	9	4	3	5	2	21	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #51: Lawrence Expwy & Kifer Rd



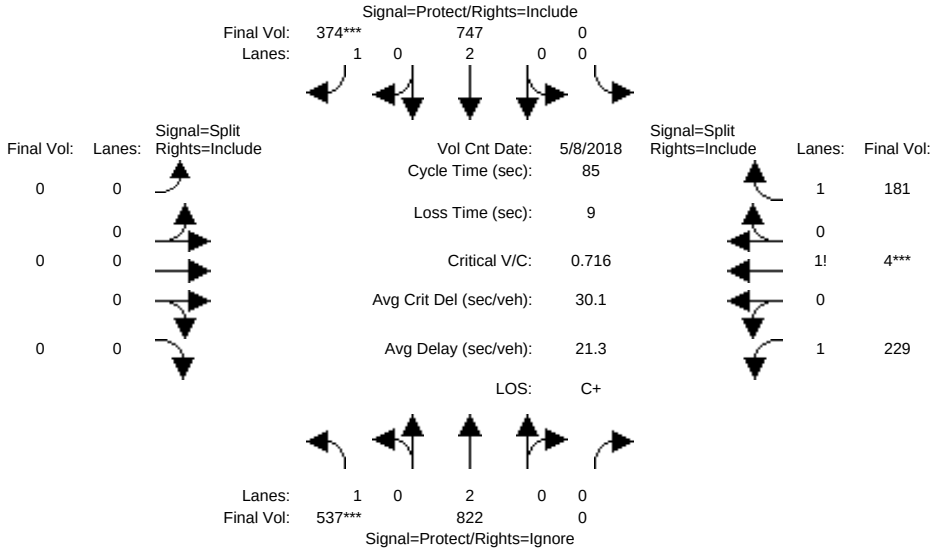
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	68	1229	348	331	3497	94	178	503	652	301	179	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1229	348	331	3497	94	178	503	652	301	179	277
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	1229	348	331	3497	94	178	503	652	301	179	277
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	983	348	331	2763	94	178	503	652	301	179	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	983	348	331	2763	94	178	503	652	301	179	277
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	983	348	331	2763	94	178	503	652	301	179	277
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.17	0.20	0.11	0.48	0.05	0.06	0.13	0.37	0.10	0.09	0.16
Crit Moves:		****		****					****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	0.46	0.39	0.35	0.74	0.89	0.09	0.68	0.76	1.69	0.84	0.46	0.46
Uniform Del:	88.2	35.1	22.9	78.2	38.6	14.1	84.6	74.8	74.1	82.4	66.3	48.2
IncremntDel:	2.3	0.1	0.2	6.6	3.7	0.0	7.0	5.2	321.4	15.6	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.4	54.1	42.5	93.4	72.8	29.8	91.7	80.0	395.4	98.0	66.7	48.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.4	54.1	42.5	93.4	72.8	29.8	91.7	80.0	395.4	98.0	66.7	48.6
LOS by Move:	F	D-	D	F	E	C	F	E-	F	F	E	D
HCM2kAvgQ:	2	16	18	13	53	4	6	14	75	11	9	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



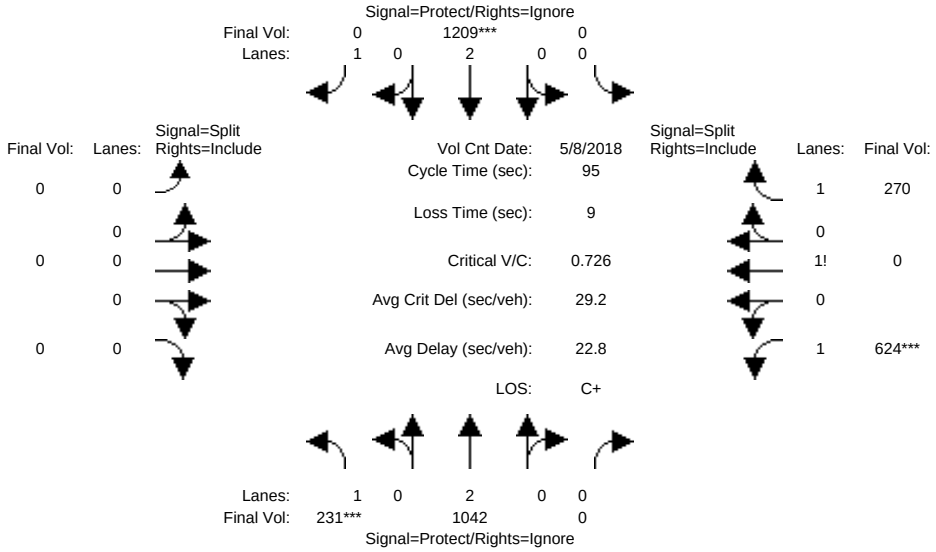
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	537	822	0	0	747	522	0	0	0	229	4	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	537	822	0	0	747	522	0	0	0	229	4	181
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	537	822	0	0	747	522	0	0	0	229	4	181
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	537	822	0	0	747	522	0	0	0	229	4	181
Reduct Vol:	0	0	0	0	0	148	0	0	0	0	0	0
Reduced Vol:	537	822	0	0	747	374	0	0	0	229	4	181
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	537	822	0	0	747	374	0	0	0	229	4	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.55	0.02	1.43
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2709	33	2508
Capacity Analysis Module:												
Vol/Sat:	0.31	0.22	0.00	0.00	0.20	0.21	0.00	0.00	0.00	0.08	0.12	0.07
Crit Moves:	****					****					****	
Green Time:	36.4	61.8	0.0	0.0	25.4	25.4	0.0	0.0	0.0	14.2	14.2	14.2
Volume/Cap:	0.72	0.30	0.00	0.00	0.66	0.72	0.00	0.00	0.00	0.51	0.72	0.43
Uniform Del:	20.0	4.0	0.0	0.0	26.0	26.6	0.0	0.0	0.0	32.2	33.5	31.8
IncremntDel:	3.3	0.1	0.0	0.0	1.4	4.7	0.0	0.0	0.0	0.5	4.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	23.3	4.1	0.0	0.0	27.5	31.3	0.0	0.0	0.0	32.7	37.8	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.3	4.1	0.0	0.0	27.5	31.3	0.0	0.0	0.0	32.7	37.8	32.1
LOS by Move:	C	A	A	A	C	C	A	A	A	C-	D+	C-
HCM2kAvgQ:	14	4	0	0	9	10	0	0	0	4	7	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



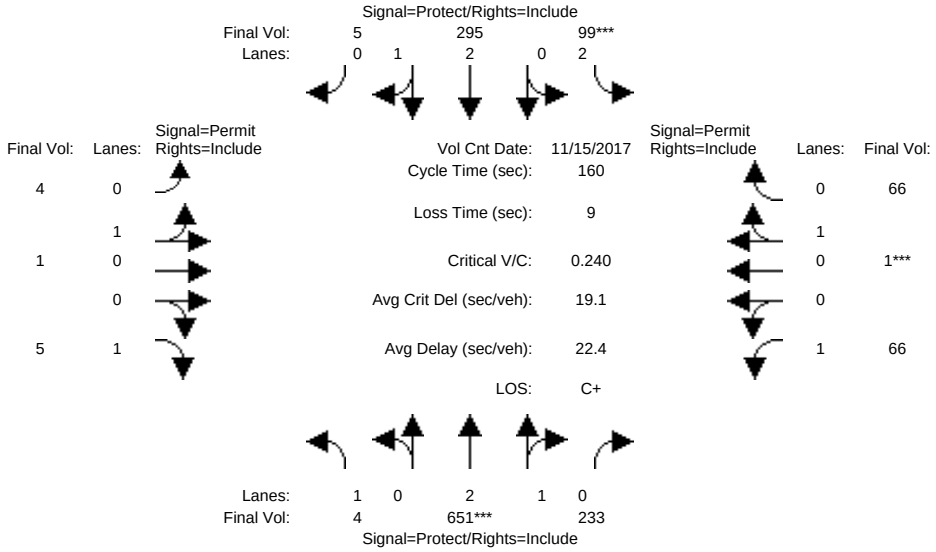
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	231	1042	0	0	1209	190	0	0	0	624	0	270
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	1042	0	0	1209	190	0	0	0	624	0	270
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	231	1042	0	0	1209	190	0	0	0	624	0	270
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	1042	0	0	1209	0	0	0	0	624	0	270
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	1042	0	0	1209	0	0	0	0	624	0	270
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	231	1042	0	0	1209	0	0	0	0	624	0	270
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.93	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.69	0.00	1.31
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	3009	0	2284
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.21	0.00	0.12
Crit Moves:	****				****					****		
Green Time:	17.3	58.9	0.0	0.0	41.6	0.0	0.0	0.0	0.0	27.1	0.0	27.1
Volume/Cap:	0.73	0.44	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.73	0.00	0.41
Uniform Del:	36.6	9.5	0.0	0.0	22.0	0.0	0.0	0.0	0.0	30.6	0.0	27.5
IncremntDel:	8.1	0.1	0.0	0.0	1.6	0.0	0.0	0.0	0.0	2.2	0.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	44.8	9.6	0.0	0.0	23.6	0.0	0.0	0.0	0.0	32.8	0.0	27.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	9.6	0.0	0.0	23.6	0.0	0.0	0.0	0.0	32.8	0.0	27.6
LOS by Move:	D	A	A	A	C	A	A	A	A	C-	A	C
HCM2kAvgQ:	8	8	0	0	15	0	0	0	0	12	0	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #58: Wolfe Rd & Stewart Dr



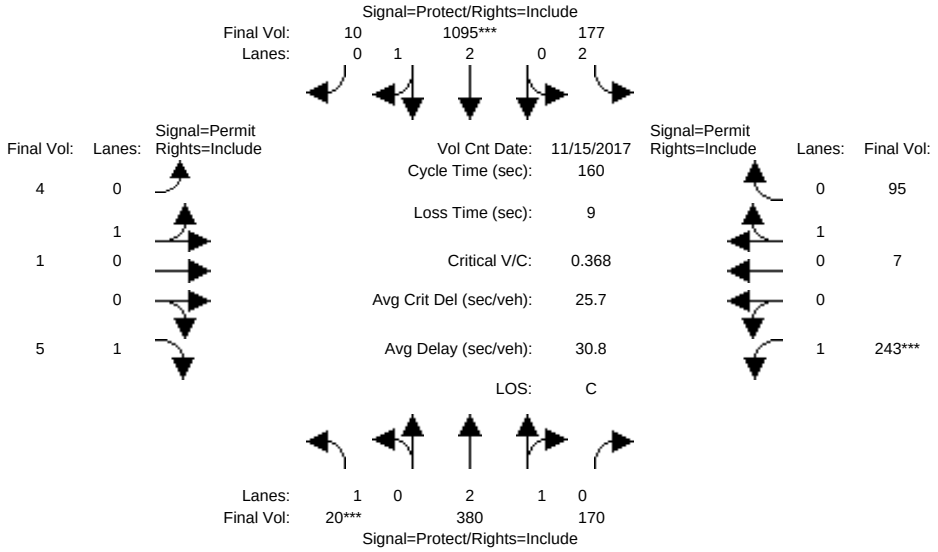
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	651	233	99	295	5	4	1	5	66	1	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	651	233	99	295	5	4	1	5	66	1	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	651	233	99	295	5	4	1	5	66	1	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	651	233	99	295	5	4	1	5	66	1	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	651	233	99	295	5	4	1	5	66	1	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	651	233	99	295	5	4	1	5	66	1	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.18	0.82	2.00	2.95	0.05	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	4122	1475	3150	5507	93	1440	360	1750	1750	27	1773
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.03	0.05	0.05	0.00	0.00	0.00	0.04	0.04	0.04
Crit Moves:		****		****							****	
Green Time:	52.0	105	105.2	20.9	74.2	74.2	24.8	24.8	24.8	24.8	24.8	24.8
Volume/Cap:	0.01	0.24	0.24	0.24	0.12	0.12	0.02	0.02	0.02	0.24	0.24	0.24
Uniform Del:	36.6	11.1	11.1	62.4	24.3	24.3	57.3	57.3	57.3	59.4	59.3	59.3
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.6	11.2	11.2	62.7	24.3	24.3	57.3	57.3	57.3	59.8	59.8	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	11.2	11.2	62.7	24.3	24.3	57.3	57.3	57.3	59.8	59.8	59.8
LOS by Move:	D+	B+	B+	E	C	C	E+	E+	E+	E+	E+	E+
HCM2kAvgQ:	0	6	6	3	3	3	0	0	0	3	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #58: Wolfe Rd & Stewart Dr



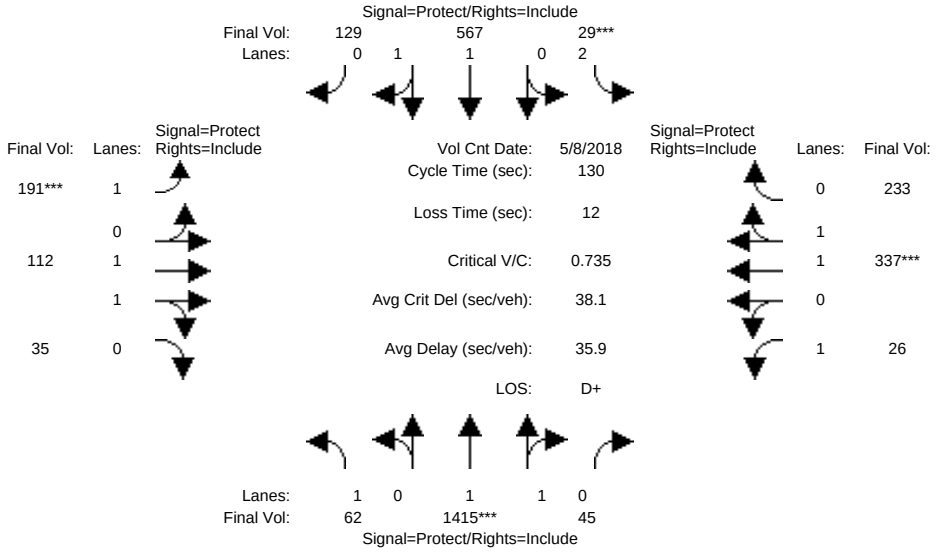
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	20	380	170	177	1095	10	4	1	5	243	7	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	380	170	177	1095	10	4	1	5	243	7	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	380	170	177	1095	10	4	1	5	243	7	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	380	170	177	1095	10	4	1	5	243	7	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	380	170	177	1095	10	4	1	5	243	7	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	380	170	177	1095	10	4	1	5	243	7	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.04	0.96	2.00	2.97	0.03	0.80	0.20	1.00	1.00	0.07	0.93
Final Sat.:	1750	3867	1730	3150	5549	51	1440	360	1750	1750	124	1676
Capacity Analysis Module:												
Vol/Sat:	0.01	0.10	0.10	0.06	0.20	0.20	0.00	0.00	0.00	0.14	0.06	0.06
Crit Moves:	****				****					****		
Green Time:	7.0	58.2	58.2	33.3	84.5	84.5	59.5	59.5	59.5	59.5	59.5	59.5
Volume/Cap:	0.26	0.27	0.27	0.27	0.37	0.37	0.01	0.01	0.01	0.37	0.15	0.15
Uniform Del:	74.0	35.9	35.9	53.2	22.2	22.2	31.7	31.7	31.7	36.7	33.5	33.5
IncremntDel:	1.8	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.8	36.0	36.0	53.4	22.3	22.3	31.7	31.7	31.7	37.0	33.6	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.8	36.0	36.0	53.4	22.3	22.3	31.7	31.7	31.7	37.0	33.6	33.6
LOS by Move:	E-	D+	D+	D-	C+	C+	C	C	C	D+	C-	C-
HCM2kAvgQ:	1	6	6	4	10	10	0	0	0	9	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #62: Fair Oaks Ave & Evelyn Ave



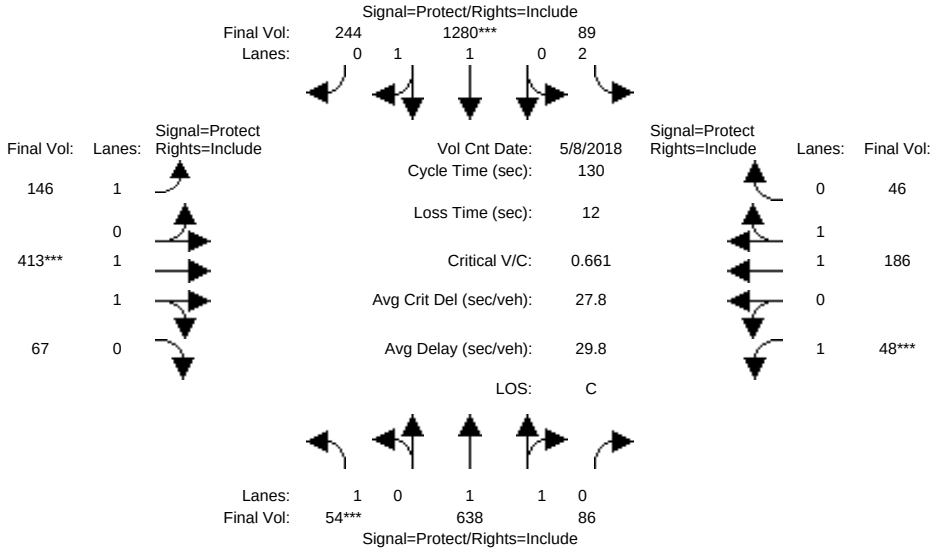
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	62	1415	45	29	567	129	191	112	35	26	337	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	1415	45	29	567	129	191	112	35	26	337	233
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1415	45	29	567	129	191	112	35	26	337	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	1415	45	29	567	129	191	112	35	26	337	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1415	45	29	567	129	191	112	35	26	337	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	1415	45	29	567	129	191	112	35	26	337	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.94	0.06	2.00	1.62	0.38	1.00	1.51	0.49	1.00	1.16	0.84
Final Sat.:	1750	3586	114	3150	3014	686	1750	2818	881	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.04	0.39	0.39	0.01	0.19	0.19	0.11	0.04	0.04	0.01	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	16.4	66.6	66.6	7.0	57.2	57.2	18.4	26.1	26.1	18.3	26.0	26.0
Volume/Cap:	0.28	0.77	0.77	0.17	0.43	0.43	0.77	0.20	0.20	0.11	0.77	0.77
Uniform Del:	51.5	25.6	25.6	58.7	25.1	25.1	53.8	43.2	43.2	48.7	49.2	49.2
IncremntDel:	0.7	2.0	2.0	0.5	0.2	0.2	13.7	0.1	0.1	0.2	5.0	5.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.2	27.6	27.6	59.2	25.3	25.3	67.5	43.3	43.3	48.9	54.2	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.2	27.6	27.6	59.2	25.3	25.3	67.5	43.3	43.3	48.9	54.2	54.2
LOS by Move:	D-	C	C	E+	C	C	E	D	D	D	D-	D-
HCM2kAvgQ:	3	25	25	1	9	9	8	2	2	1	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #62: Fair Oaks Ave & Evelyn Ave



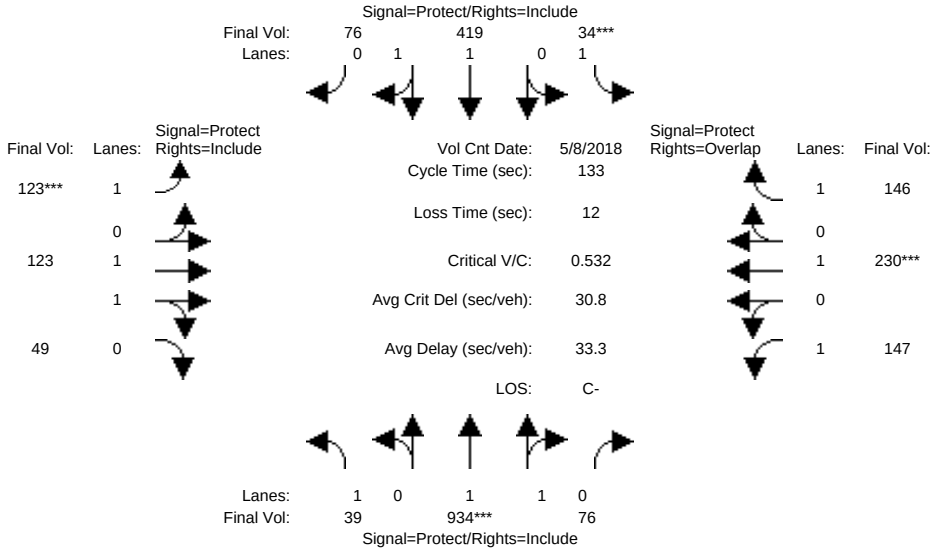
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	54	638	86	89	1280	244	146	413	67	48	186	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	638	86	89	1280	244	146	413	67	48	186	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	638	86	89	1280	244	146	413	67	48	186	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	638	86	89	1280	244	146	413	67	48	186	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	638	86	89	1280	244	146	413	67	48	186	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	638	86	89	1280	244	146	413	67	48	186	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.76	0.24	2.00	1.67	0.33	1.00	1.71	0.29	1.00	1.59	0.41
Final Sat.:	1750	3260	439	3150	3107	592	1750	3183	516	1750	2966	733
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.20	0.03	0.41	0.41	0.08	0.13	0.13	0.03	0.06	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	67.5	67.5	18.6	79.1	79.1	16.6	24.9	24.9	7.0	15.3	15.3
Volume/Cap:	0.57	0.38	0.38	0.20	0.68	0.68	0.65	0.68	0.68	0.51	0.53	0.53
Uniform Del:	60.0	18.7	18.7	49.1	17.0	17.0	54.0	48.8	48.8	59.8	54.0	54.0
IncremntDel:	8.3	0.1	0.1	0.2	0.8	0.8	6.8	2.6	2.6	4.6	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	18.8	18.8	49.4	17.8	17.8	60.7	51.4	51.4	64.4	55.3	55.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	18.8	18.8	49.4	17.8	17.8	60.7	51.4	51.4	64.4	55.3	55.3
LOS by Move:	E	B-	B-	D	B	B	E	D-	D-	E	E+	E+
HCM2kAvgQ:	3	9	9	2	20	20	6	9	9	2	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #63: Fair Oaks Ave & Old SF Rd



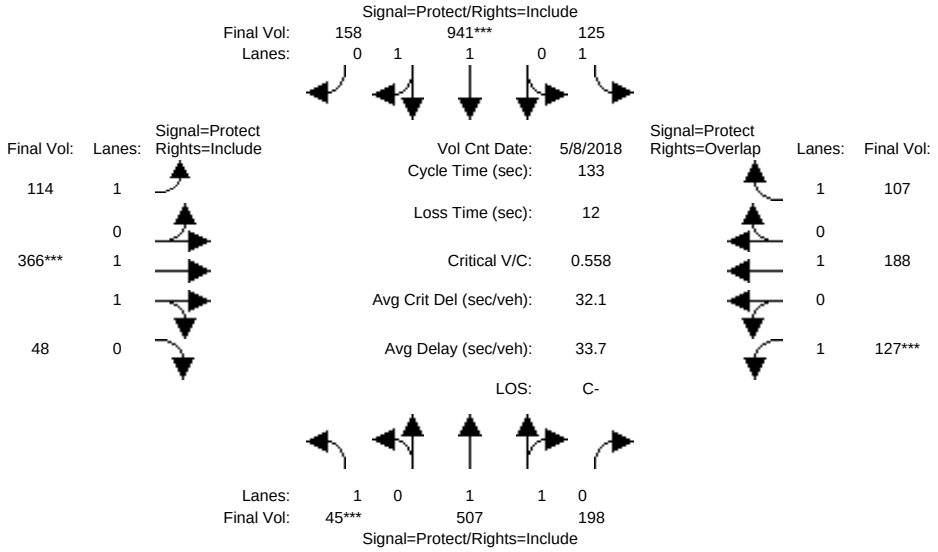
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	39	934	76	34	419	76	123	123	49	147	230	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	934	76	34	419	76	123	123	49	147	230	146
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	934	76	34	419	76	123	123	49	147	230	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	934	76	34	419	76	123	123	49	147	230	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	934	76	34	419	76	123	123	49	147	230	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	934	76	34	419	76	123	123	49	147	230	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.85	0.15	1.00	1.68	0.32	1.00	1.41	0.59	1.00	1.00	1.00
Final Sat.:	1750	3421	278	1750	3131	568	1750	2645	1054	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.27	0.02	0.13	0.13	0.07	0.05	0.05	0.08	0.12	0.08
Crit Moves:		****		****			****				****	
Green Time:	20.9	67.0	67.0	7.0	53.1	53.1	17.3	22.2	22.2	24.8	29.7	36.7
Volume/Cap:	0.14	0.54	0.54	0.37	0.33	0.33	0.54	0.28	0.28	0.45	0.54	0.30
Uniform Del:	48.3	22.5	22.5	60.9	27.7	27.7	54.2	48.4	48.4	48.1	45.6	38.0
IncremntDel:	0.2	0.3	0.3	2.5	0.1	0.1	2.7	0.2	0.2	1.0	1.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.6	22.8	22.8	63.4	27.8	27.8	56.8	48.7	48.7	49.1	47.1	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	22.8	22.8	63.4	27.8	27.8	56.8	48.7	48.7	49.1	47.1	38.4
LOS by Move:	D	C+	C+	E	C	C	E+	D	D	D	D	D+
HCM2kAvgQ:	1	14	14	2	7	7	6	3	3	6	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #63: Fair Oaks Ave & Old SF Rd



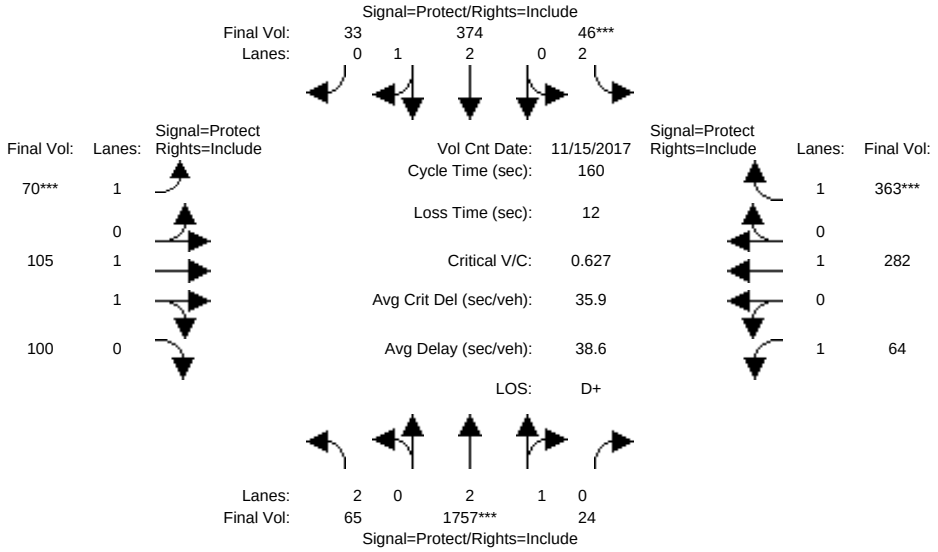
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	45	507	198	125	941	158	114	366	48	127	188	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	507	198	125	941	158	114	366	48	127	188	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	507	198	125	941	158	114	366	48	127	188	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	507	198	125	941	158	114	366	48	127	188	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	507	198	125	941	158	114	366	48	127	188	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	507	198	125	941	158	114	366	48	127	188	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.42	0.58	1.00	1.70	0.30	1.00	1.76	0.24	1.00	1.00	1.00
Final Sat.:	1750	2660	1039	1750	3168	532	1750	3271	429	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.19	0.07	0.30	0.30	0.07	0.11	0.11	0.07	0.10	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	56.2	56.2	21.1	70.3	70.3	17.3	26.5	26.5	17.2	26.3	47.4
Volume/Cap:	0.49	0.45	0.45	0.45	0.56	0.56	0.50	0.56	0.56	0.56	0.50	0.17
Uniform Del:	61.3	27.4	27.4	50.7	21.0	21.0	53.8	48.0	48.0	54.4	47.5	29.3
IncremntDel:	4.0	0.2	0.2	1.2	0.4	0.4	1.7	1.0	1.0	3.2	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.3	27.6	27.6	51.9	21.4	21.4	55.5	49.0	49.0	57.6	48.5	29.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	27.6	27.6	51.9	21.4	21.4	55.5	49.0	49.0	57.6	48.5	29.5
LOS by Move:	E	C	C	D-	C+	C+	E+	D	D	E+	D	C
HCM2kAvgQ:	2	10	10	5	15	15	5	8	8	5	7	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #64: Wolfe Rd & Evelyn Ave



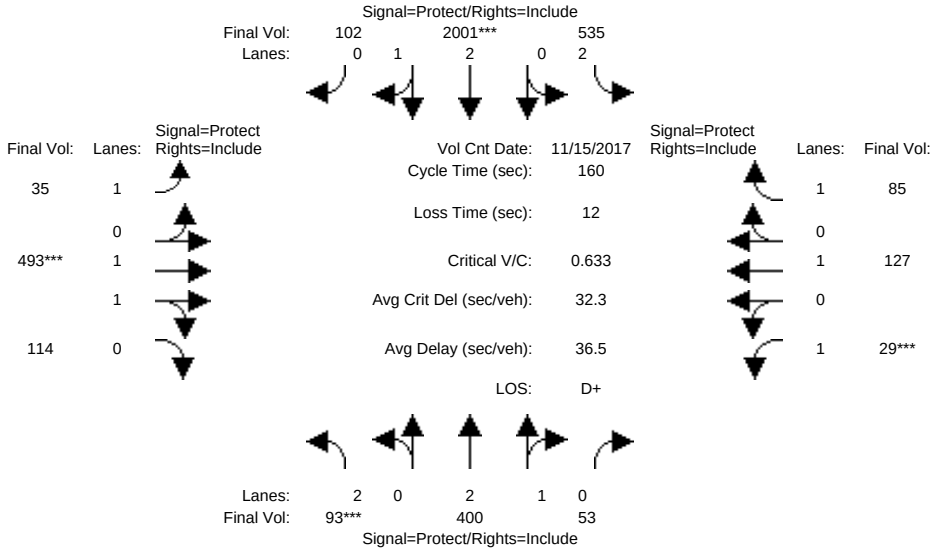
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	1757	24	46	374	33	70	105	100	64	282	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1757	24	46	374	33	70	105	100	64	282	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1757	24	46	374	33	70	105	100	64	282	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1757	24	46	374	33	70	105	100	64	282	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1757	24	46	374	33	70	105	100	64	282	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1757	24	46	374	33	70	105	100	64	282	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	2.00	2.96	0.04	2.00	2.75	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5524	75	3150	5145	454	1750	1898	1800	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.32	0.32	0.01	0.07	0.07	0.04	0.06	0.06	0.04	0.15	0.21
Crit Moves:		****		****			****					****
Green Time:	32.4	79.3	79.3	7.0	53.9	53.9	10.0	36.3	36.3	25.4	51.7	51.7
Volume/Cap:	0.10	0.64	0.64	0.33	0.22	0.22	0.64	0.24	0.24	0.23	0.46	0.64
Uniform Del:	51.9	29.8	29.8	74.2	38.0	38.0	73.3	50.6	50.6	58.8	43.0	46.2
IncremntDel:	0.1	0.5	0.5	1.4	0.1	0.1	12.3	0.2	0.2	0.4	0.5	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.0	30.4	30.4	75.7	38.0	38.0	85.5	50.8	50.8	59.2	43.6	48.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.0	30.4	30.4	75.7	38.0	38.0	85.5	50.8	50.8	59.2	43.6	48.7
LOS by Move:	D-	C	C	E-	D+	D+	F	D	D	E+	D	D
HCM2kAvgQ:	1	21	21	1	5	5	4	4	4	3	11	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #64: Wolfe Rd & Evelyn Ave



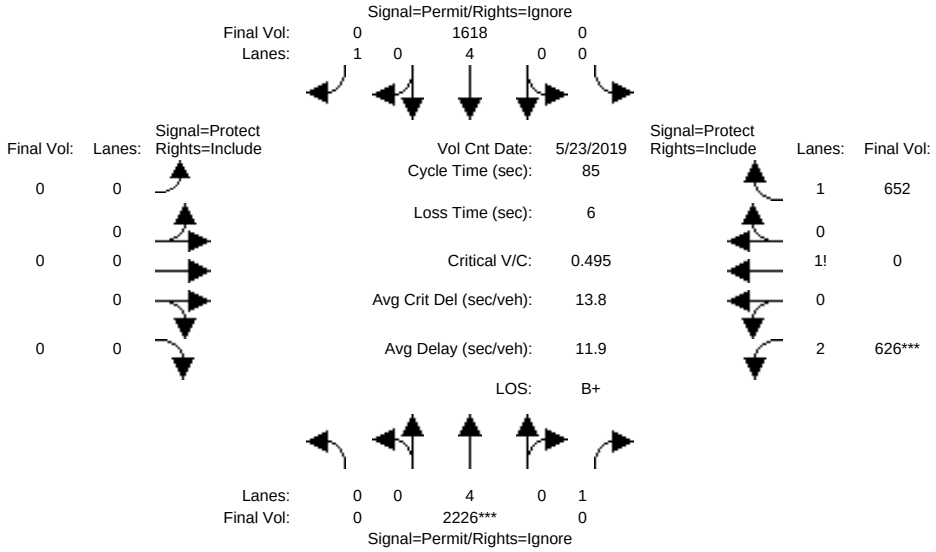
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	93	400	53	535	2001	102	35	493	114	29	127	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	400	53	535	2001	102	35	493	114	29	127	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	400	53	535	2001	102	35	493	114	29	127	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	400	53	535	2001	102	35	493	114	29	127	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	400	53	535	2001	102	35	493	114	29	127	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	400	53	535	2001	102	35	493	114	29	127	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.64	0.36	2.00	2.85	0.15	1.00	1.61	0.39	1.00	1.00	1.00
Final Sat.:	3150	4944	655	3150	5328	272	1750	3005	695	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.17	0.38	0.38	0.02	0.16	0.16	0.02	0.07	0.05
Crit Moves:	****				****			****			****	
Green Time:	7.3	32.4	32.4	68.0	93.0	93.0	18.8	40.6	40.6	7.0	28.8	28.8
Volume/Cap:	0.65	0.40	0.40	0.40	0.65	0.65	0.17	0.65	0.65	0.38	0.37	0.27
Uniform Del:	75.1	55.4	55.4	31.9	22.4	22.4	63.5	53.3	53.3	74.4	57.6	56.5
IncremntDel:	9.7	0.2	0.2	0.2	0.5	0.5	0.4	1.6	1.6	3.1	0.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.8	55.6	55.6	32.1	22.9	22.9	63.9	54.8	54.8	77.5	58.3	57.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.8	55.6	55.6	32.1	22.9	22.9	63.9	54.8	54.8	77.5	58.3	57.0
LOS by Move:	F	E+	E+	C-	C+	C+	E	D-	D-	E-	E+	E+
HCM2kAvgQ:	3	6	6	10	22	22	2	13	13	2	6	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



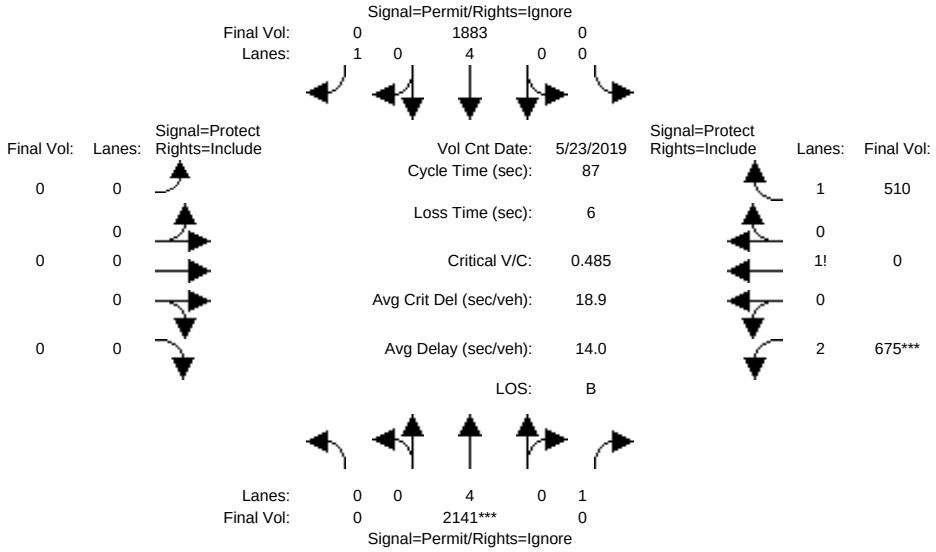
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2226	0	0	1618	371	0	0	0	626	0	652
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2226	0	0	1618	371	0	0	0	626	0	652
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2226	0	0	1618	371	0	0	0	626	0	652
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2226	0	0	1618	0	0	0	0	626	0	652
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2226	0	0	1618	0	0	0	0	626	0	652
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2226	0	0	1618	0	0	0	0	626	0	652
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.81	1.00	0.95
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.43	0.00	1.57
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3735	0	2829
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.17	0.00	0.23
Crit Moves:		****								****		
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	22.7
Volume/Cap:	0.00	0.49	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.63	0.00	0.86
Uniform Del:	0.0	9.6	0.0	0.0	8.6	0.0	0.0	0.0	0.0	27.4	0.0	29.6
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	5.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	5.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0	28.0	0.0	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0	28.0	0.0	35.1
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	D+
HCM2kAvgQ:	0	5	0	0	3	0	0	0	0	8	0	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



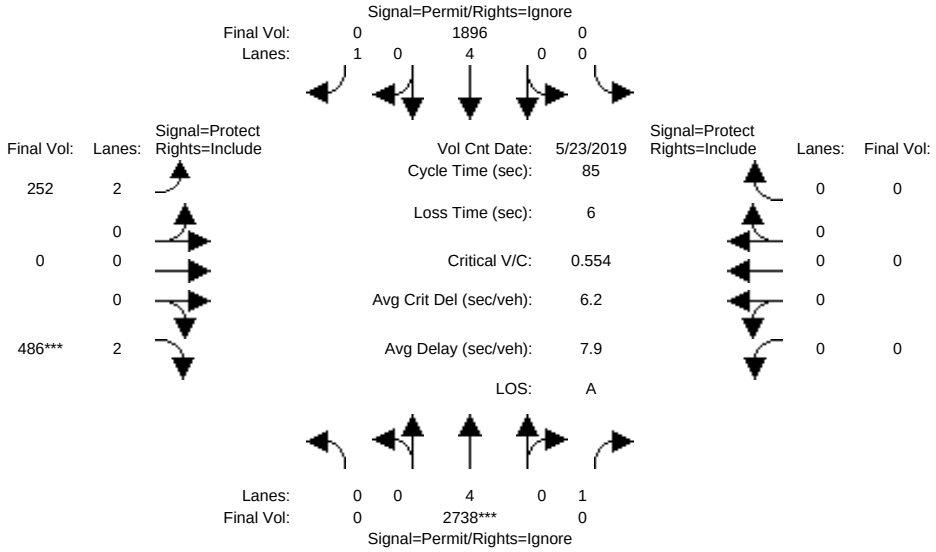
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2141	0	0	1883	344	0	0	0	675	0	510
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2141	0	0	1883	344	0	0	0	675	0	510
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2141	0	0	1883	344	0	0	0	675	0	510
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2141	0	0	1883	0	0	0	0	675	0	510
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2141	0	0	1883	0	0	0	0	675	0	510
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2141	0	0	1883	0	0	0	0	675	0	510
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.84	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.49	0.00	1.51
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3978	0	2640
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.17	0.00	0.19
Crit Moves:		****								****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.46	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.65	0.00	0.74
Uniform Del:	0.0	9.1	0.0	0.0	8.7	0.0	0.0	0.0	0.0	28.6	0.0	29.5
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	0.0	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.3
LOS by Move:	A	B	A	A	A	A	A	A	A	C	A	C
HCM2kAvgQ:	0	10	0	0	3	0	0	0	0	9	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



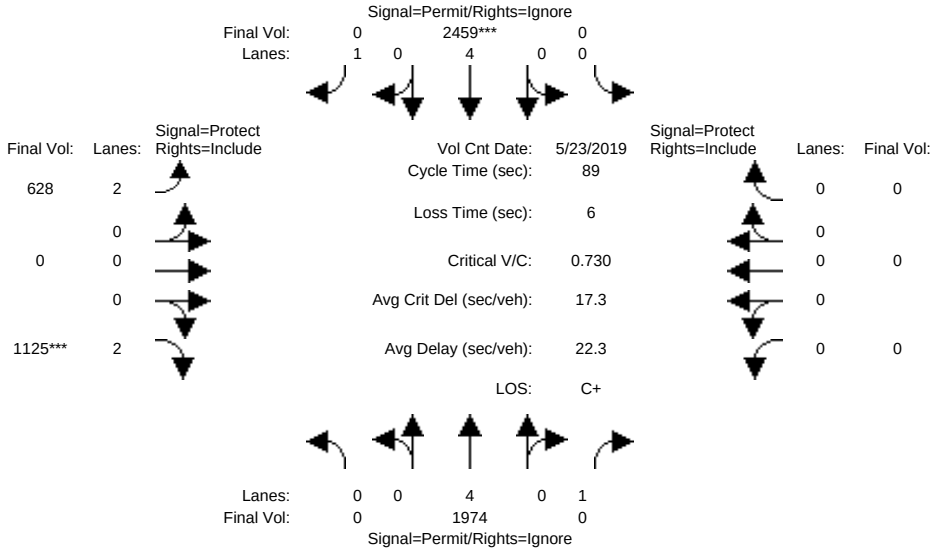
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2738	584	0	1896	0	252	0	486	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2738	584	0	1896	0	252	0	486	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2738	584	0	1896	0	252	0	486	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2738	0	0	1896	0	252	0	486	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2738	0	0	1896	0	252	0	486	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2738	0	0	1896	0	252	0	486	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.25	0.00	0.08	0.00	0.15	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.00	0.00	0.45	0.00	0.54	0.00	0.71	0.00	0.00	0.00
Uniform Del:	0.0	5.6	0.0	0.0	11.0	0.0	33.5	0.0	30.7	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	1.3	0.0	3.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.2	0.0	0.0	7.3	0.0	34.8	0.0	34.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.2	0.0	0.0	7.3	0.0	34.8	0.0	34.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C-	A	C-	A	A	A
HCM2kAvgQ:	0	3	0	0	5	0	4	0	8	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



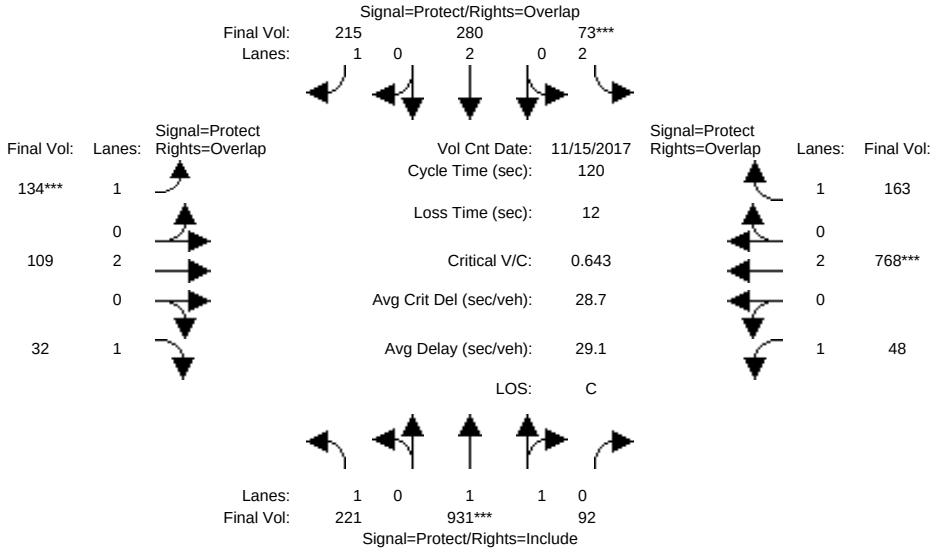
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	1974	352	0	2459	0	628	0	1125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1974	352	0	2459	0	628	0	1125	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1974	352	0	2459	0	628	0	1125	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1974	0	0	2459	0	628	0	1125	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1974	0	0	2459	0	628	0	1125	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1974	0	0	2459	0	628	0	1125	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.00	0.00	0.32	0.00	0.20	0.00	0.36	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.37	0.00	0.00	0.65	0.00	1.13	0.00	0.83	0.00	0.00	0.00
Uniform Del:	0.0	5.6	0.0	0.0	16.4	0.0	36.7	0.0	22.4	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.0	79.3	0.0	4.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.6	0.0	0.0	12.9	0.0	116.0	0.0	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.6	0.0	0.0	12.9	0.0	116.0	0.0	26.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B	A	F	A	C	A	A	A
HCM2kAvgQ:	0	2	0	0	11	0	19	0	19	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #84: Bowers Ave & Kifer Rd



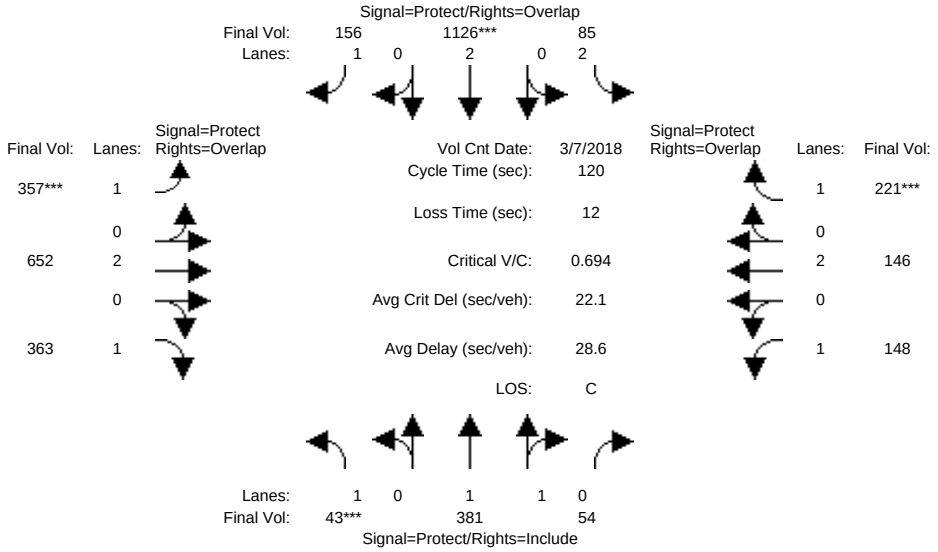
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	847	84	66	255	196	122	99	29	44	699	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	847	84	66	255	196	122	99	29	44	699	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	847	84	66	255	196	122	99	29	44	699	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	931	92	73	280	215	134	109	32	48	768	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	931	92	73	280	215	134	109	32	48	768	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	931	92	73	280	215	134	109	32	48	768	163
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.81	0.19	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3366	334	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.28	0.28	0.02	0.07	0.12	0.08	0.03	0.02	0.03	0.20	0.09
Crit Moves:		****		****			****				****	
Green Time:	34.8	49.8	49.8	8.0	23.0	36.8	13.8	25.1	59.9	25.1	36.4	44.4
Volume/Cap:	0.44	0.67	0.67	0.35	0.38	0.40	0.67	0.14	0.04	0.13	0.67	0.25
Uniform Del:	34.6	28.4	28.4	53.5	42.3	32.9	50.9	38.6	15.3	38.6	36.5	26.3
IncremntDel:	0.6	1.1	1.1	1.0	0.3	0.5	8.2	0.1	0.0	0.2	1.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.73	0.53	0.53	0.95	0.84	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.8	16.1	16.1	51.9	36.0	23.7	59.1	38.7	15.3	38.8	38.0	26.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.8	16.1	16.1	51.9	36.0	23.7	59.1	38.7	15.3	38.8	38.0	26.5
LOS by Move:	C	B	B	D-	D+	C	E+	D+	B	D+	D+	C
HCM2kAvgQ:	5	11	11	1	4	5	5	2	1	1	12	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #84: Bowers Ave & Kifer Rd



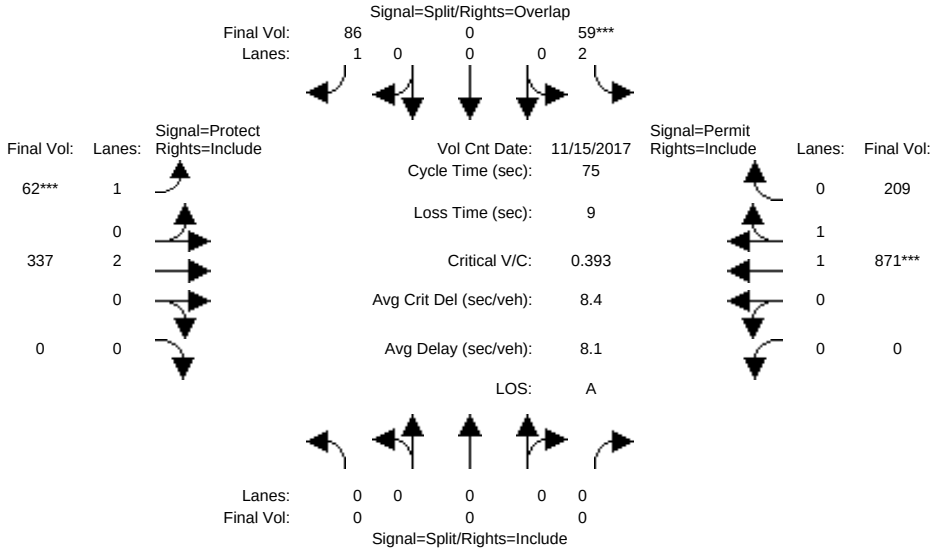
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	377	53	84	1115	154	353	645	359	147	145	219
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	377	53	84	1115	154	353	645	359	147	145	219
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	377	53	84	1115	154	353	645	359	147	145	219
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	43	381	54	85	1126	156	357	652	363	148	146	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	381	54	85	1126	156	357	652	363	148	146	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	381	54	85	1126	156	357	652	363	148	146	221
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.75	0.25	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3244	456	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.12	0.03	0.30	0.09	0.20	0.17	0.21	0.08	0.04	0.13
Crit Moves:	****				****		****					****
Green Time:	5.0	38.0	38.0	21.6	54.5	92.0	37.5	33.1	38.1	15.4	11.0	32.5
Volume/Cap:	0.60	0.37	0.37	0.15	0.65	0.12	0.65	0.62	0.65	0.66	0.42	0.47
Uniform Del:	56.5	31.8	31.8	41.5	25.4	3.6	35.6	38.0	35.3	49.8	51.5	36.5
IncremntDel:	12.7	0.2	0.2	0.1	0.9	0.0	2.8	1.2	2.8	7.2	0.8	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.69	0.69	0.85	0.44	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.6	22.2	22.2	35.6	12.2	0.0	38.4	39.2	38.1	57.0	52.3	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	22.2	22.2	35.6	12.2	0.0	38.4	39.2	38.1	57.0	52.3	37.2
LOS by Move:	E	C+	C+	D+	B	A	D+	D	D+	E+	D-	D+
HCM2kAvgQ:	2	5	5	1	10	0	12	10	12	6	3	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #85: Corvin Dr & Kifer Rd



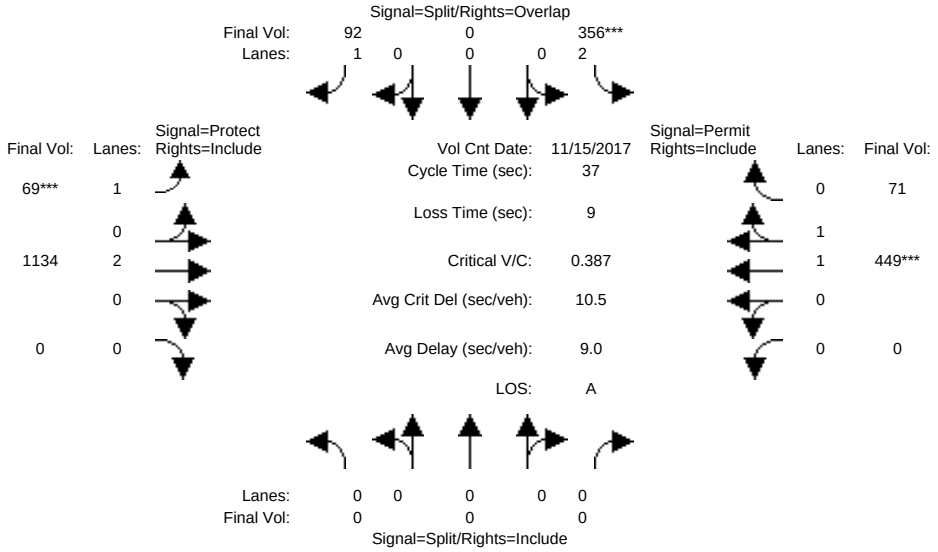
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	53	0	77	56	303	0	0	784	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	53	0	77	56	303	0	0	784	188
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	53	0	77	56	303	0	0	784	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	86	62	337	0	0	871	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	59	0	86	62	337	0	0	871	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	59	0	86	62	337	0	0	871	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.60	0.40
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2984	716
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.05	0.04	0.09	0.00	0.00	0.29	0.29
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	9.3	0.0	15.5	6.2	56.7	0.0	0.0	50.5	50.5
Volume/Cap:	0.00	0.00	0.00	0.15	0.00	0.24	0.43	0.12	0.00	0.00	0.43	0.43
Uniform Del:	0.0	0.0	0.0	29.3	0.0	24.8	32.8	2.5	0.0	0.0	5.6	5.6
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.3	2.1	0.0	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.5	0.0	25.2	34.9	2.5	0.0	0.0	5.8	5.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.5	0.0	25.2	34.9	2.5	0.0	0.0	5.8	5.8
LOS by Move:	A	A	A	C	A	C	C-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	2	1	1	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #85: Corvin Dr & Kifer Rd



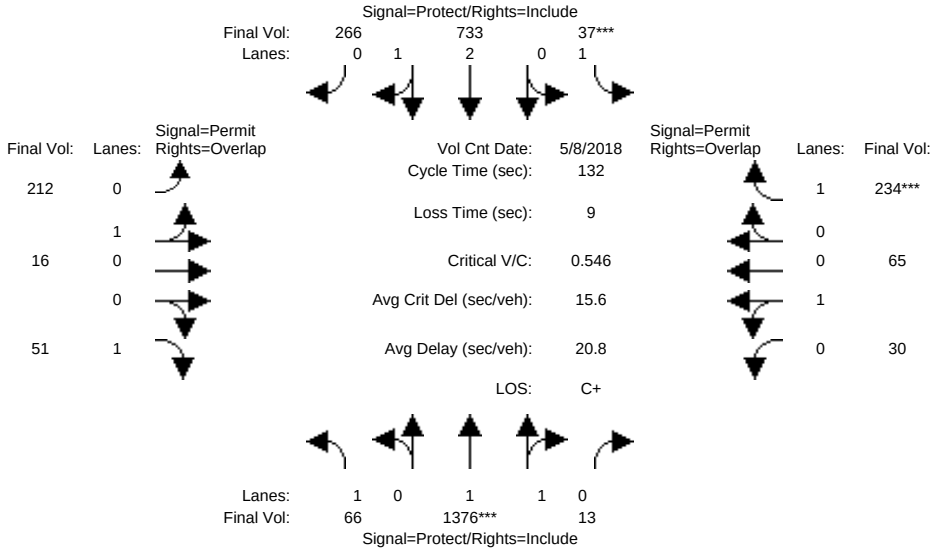
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	317	0	82	61	1009	0	0	400	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	317	0	82	61	1009	0	0	400	63
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	317	0	82	61	1009	0	0	400	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	356	0	92	69	1134	0	0	449	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	356	0	92	69	1134	0	0	449	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	356	0	92	69	1134	0	0	449	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.72	0.28
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3196	503
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.05	0.04	0.30	0.00	0.00	0.14	0.14
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.3	0.0	15.3	5.0	17.7	0.0	0.0	12.7	12.7
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.13	0.29	0.62	0.00	0.00	0.41	0.41
Uniform Del:	0.0	0.0	0.0	10.9	0.0	6.7	14.4	7.1	0.0	0.0	9.2	9.2
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.1	0.7	0.7	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.2	0.0	6.8	15.1	7.8	0.0	0.0	9.5	9.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.2	0.0	6.8	15.1	7.8	0.0	0.0	9.5	9.5
LOS by Move:	A	A	A	B+	A	A	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	1	1	5	0	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



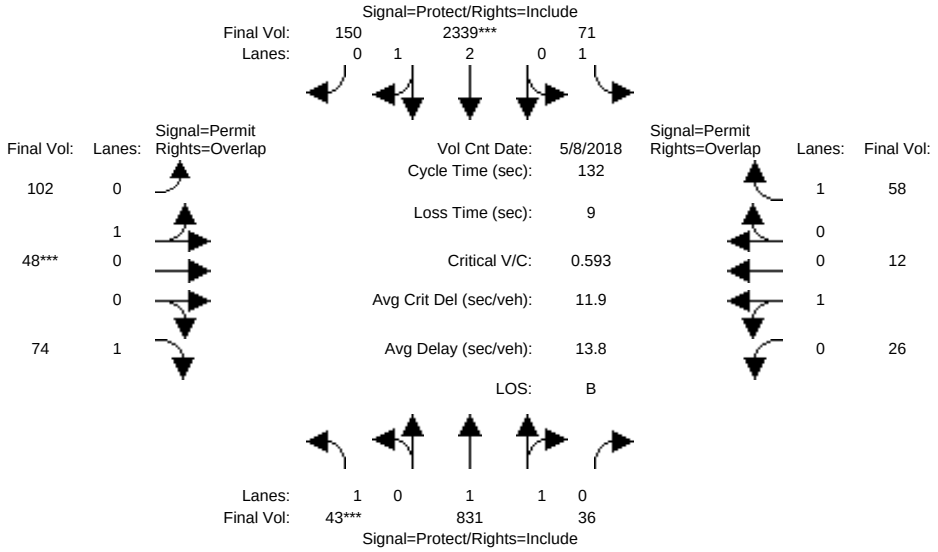
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	66	1376	13	37	733	266	212	16	51	30	65	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	1376	13	37	733	266	212	16	51	30	65	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	1376	13	37	733	266	212	16	51	30	65	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1376	13	37	733	266	212	16	51	30	65	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1376	13	37	733	266	212	16	51	30	65	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	1376	13	37	733	266	212	16	51	30	65	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	1.00	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.17	0.83	0.93	0.07	1.00	0.32	0.68	1.00
Final Sat.:	1750	3665	35	1750	4107	1490	1674	126	1750	568	1232	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.38	0.38	0.02	0.18	0.18	0.13	0.13	0.03	0.05	0.05	0.13
Crit Moves:		****		****								****
Green Time:	23.5	95.5	95.5	7.0	79.0	79.0	20.5	20.5	44.0	20.5	20.5	27.5
Volume/Cap:	0.21	0.52	0.52	0.40	0.30	0.30	0.81	0.81	0.09	0.34	0.34	0.64
Uniform Del:	46.4	8.1	8.1	60.5	12.9	12.9	53.9	53.9	30.2	49.7	49.7	47.7
IncremntDel:	0.3	0.2	0.2	2.8	0.1	0.1	16.6	16.6	0.1	0.7	0.7	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.7	8.3	8.3	63.3	13.0	13.0	70.5	70.5	30.3	50.4	50.4	51.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	8.3	8.3	63.3	13.0	13.0	70.5	70.5	30.3	50.4	50.4	51.6
LOS by Move:	D	A	A	E	B	B	E	E	C	D	D	D-
HCM2kAvgQ:	2	12	12	2	6	6	12	12	1	4	4	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



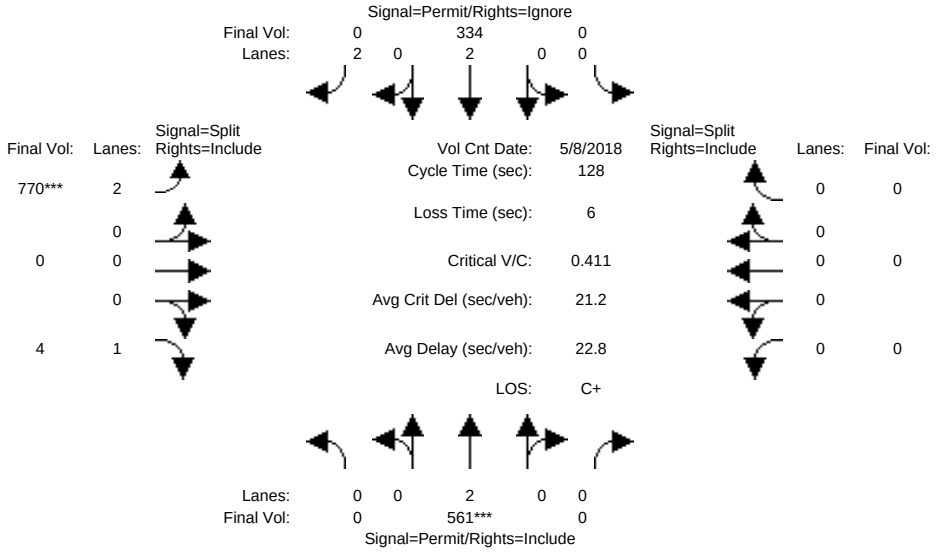
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	831	36	71	2339	150	102	48	74	26	12	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	831	36	71	2339	150	102	48	74	26	12	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	831	36	71	2339	150	102	48	74	26	12	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	831	36	71	2339	150	102	48	74	26	12	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	831	36	71	2339	150	102	48	74	26	12	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	831	36	71	2339	150	102	48	74	26	12	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.91	0.09	1.00	2.81	0.19	0.68	0.32	1.00	0.68	0.32	1.00
Final Sat.:	1750	3546	154	1750	5262	337	1224	576	1750	1232	568	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.23	0.04	0.44	0.44	0.08	0.08	0.04	0.02	0.02	0.03
Crit Moves:	****				****			****				
Green Time:	7.0	85.4	85.4	19.3	97.7	97.7	18.3	18.3	25.3	18.3	18.3	37.6
Volume/Cap:	0.46	0.36	0.36	0.28	0.60	0.60	0.60	0.60	0.22	0.15	0.15	0.12
Uniform Del:	60.7	10.8	10.8	50.1	8.0	8.0	53.4	53.4	45.0	50.0	50.0	34.9
IncremntDel:	3.6	0.1	0.1	0.6	0.2	0.2	4.0	4.0	0.3	0.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.3	10.9	10.9	50.7	8.3	8.3	57.4	57.4	45.4	50.3	50.3	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.3	10.9	10.9	50.7	8.3	8.3	57.4	57.4	45.4	50.3	50.3	35.0
LOS by Move:	E	B+	B+	D	A	A	E+	E+	D	D	D	C-
HCM2kAvgQ:	2	8	8	3	16	16	7	7	3	1	1	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #92: Fair Oaks Ave & Wolfe Rd



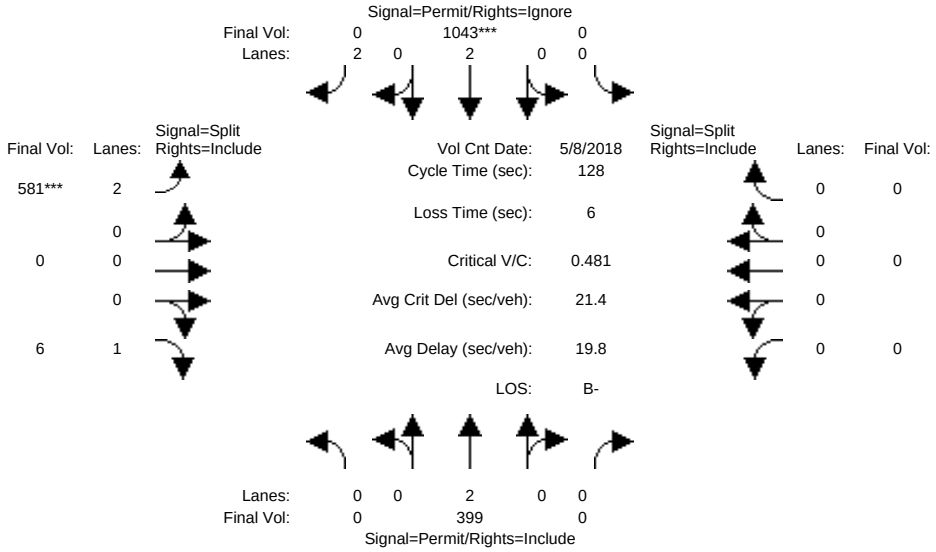
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	561	0	0	334	574	770	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	561	0	0	334	574	770	0	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	561	0	0	334	574	770	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	561	0	0	334	0	770	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	561	0	0	334	0	770	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	561	0	0	334	0	770	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.09	0.00	0.24	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	45.9	0.0	0.0	45.9	0.0	76.1	0.0	76.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.41	0.00	0.00	0.24	0.00	0.41	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	30.9	0.0	0.0	28.8	0.0	13.9	0.0	10.6	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	31.1	0.0	0.0	28.9	0.0	14.1	0.0	10.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.1	0.0	0.0	28.9	0.0	14.1	0.0	10.6	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B	A	B+	A	A	A
HCM2kAvgQ:	0	8	0	0	4	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #92: Fair Oaks Ave & Wolfe Rd



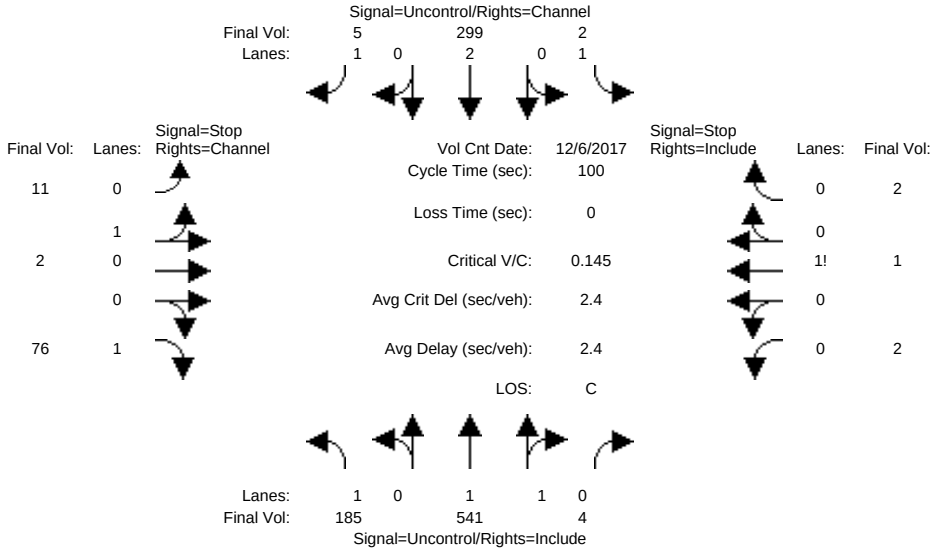
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	399	0	0	1043	1080	581	0	6	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	399	0	0	1043	1080	581	0	6	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	399	0	0	1043	1080	581	0	6	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	399	0	0	1043	0	581	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	399	0	0	1043	0	581	0	6	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	399	0	0	1043	0	581	0	6	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.00	0.00	0.27	0.00	0.18	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	73.0	0.0	0.0	73.0	0.0	49.0	0.0	49.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.18	0.00	0.00	0.48	0.00	0.48	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	13.2	0.0	0.0	16.3	0.0	29.9	0.0	24.4	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.3	0.0	0.0	16.5	0.0	30.2	0.0	24.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.3	0.0	0.0	16.5	0.0	30.2	0.0	24.4	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	C	A	C	A	A	A
HCM2kAvgQ:	0	4	0	0	12	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing AM

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	185	541	4	2	299	5	11	2	76	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	541	4	2	299	5	11	2	76	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	541	4	2	299	5	11	2	76	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	541	4	2	299	5	11	2	76	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	185	541	4	2	299	5	11	2	76	2	1	2
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	299	xxxx	xxxxx	545	xxxx	xxxxx	944	1218	150	1068	1216	273
Potent Cap.:	1274	xxxx	xxxxx	1034	xxxx	xxxxx	220	182	877	179	183	731
Move Cap.:	1274	xxxx	xxxxx	1034	xxxx	xxxxx	194	155	877	144	156	731
Volume/Cap:	0.15	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.01	0.09	0.01	0.01	0.00
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx
Control Del:	8.3	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	9.5	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	A	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	187	xxxx	xxxxx	xxxx	217	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	25.7	xxxx	xxxxx	xxxxx	22.0	xxxxx
Shared LOS:	*	*	*	*	*	*	D	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.9			22.0		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	185	541	4	2	299	5	11	2	76	2	1	2
ApproachDel:	xxxxxx			xxxxxx			11.9			22.0		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=89]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1130]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1130]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	185	541	4	2	299	5	11	2	76	2	1	2

Major Street Volume: 1036
Minor Approach Volume: 89
Minor Approach Volume Threshold: 359

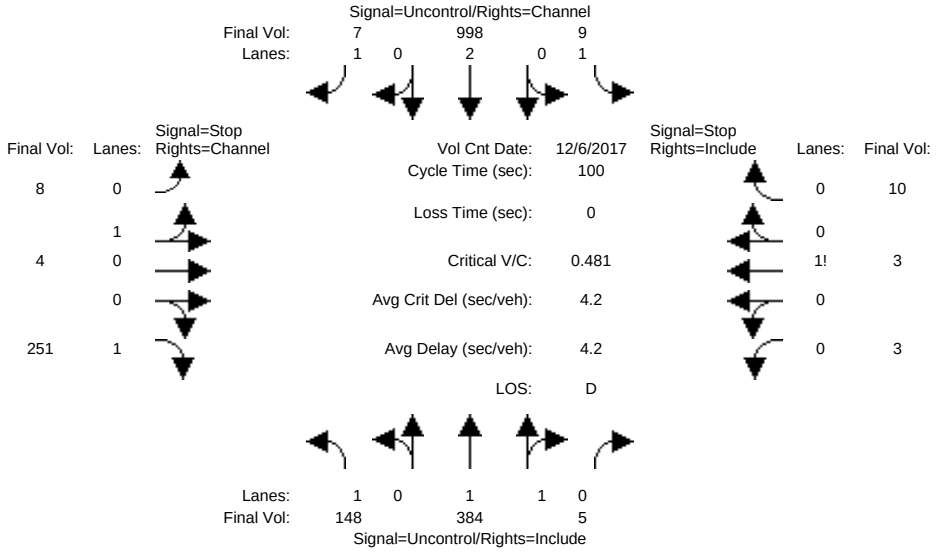
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	148	384	5	9	998	7	8	4	251	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	384	5	9	998	7	8	4	251	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	384	5	9	998	7	8	4	251	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	384	5	9	998	7	8	4	251	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	148	384	5	9	998	7	8	4	251	3	3	10
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	998	xxxx	xxxxx	389	xxxx	xxxxx	1506	1701	499	1202	1699	195
Potent Cap.:	701	xxxx	xxxxx	1181	xxxx	xxxxx	85	93	522	143	93	820
Move Cap.:	701	xxxx	xxxxx	1181	xxxx	xxxxx	68	73	522	59	73	820
Volume/Cap:	0.21	xxxx	xxxx	0.01	xxxx	xxxx	0.12	0.05	0.48	0.05	0.04	0.01
Level Of Service Module:												
2Way95thQ:	0.8	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	2.6	xxxx	xxxx	xxxxx
Control Del:	11.5	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	18.1	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	C	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	69	xxxx	xxxxx	xxxx	154	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	67.4	xxxx	xxxxx	xxxxx	31.1	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			20.4			31.1		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	148	384	5	9	998	7	8	4	251	3	3	10
ApproachDel:	xxxxxx			xxxxxx			20.4			31.1		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=263]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1830]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=16]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1830]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	148	384	5	9	998	7	8	4	251	3	3	10

Major Street Volume: 1551
Minor Approach Volume: 263
Minor Approach Volume Threshold: 185

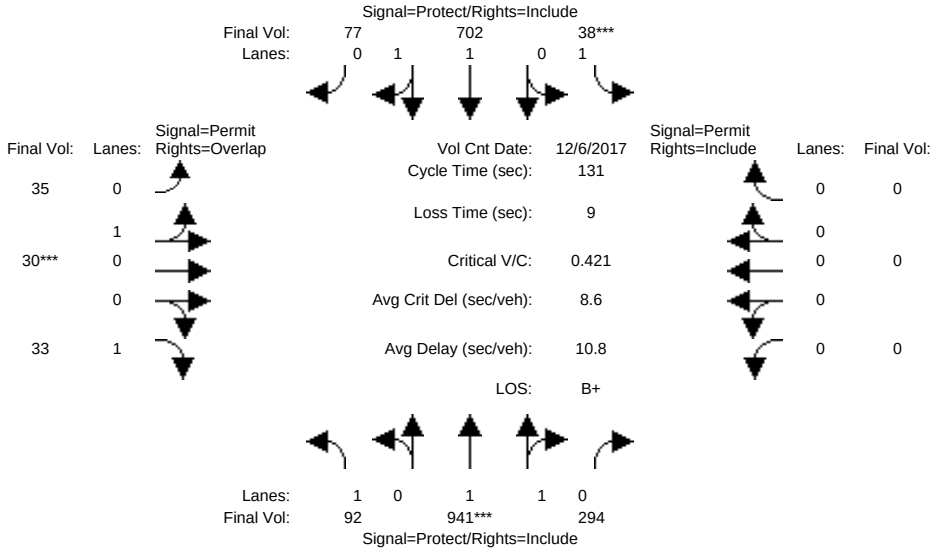
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #95: Fair Oaks Ave & California Ave



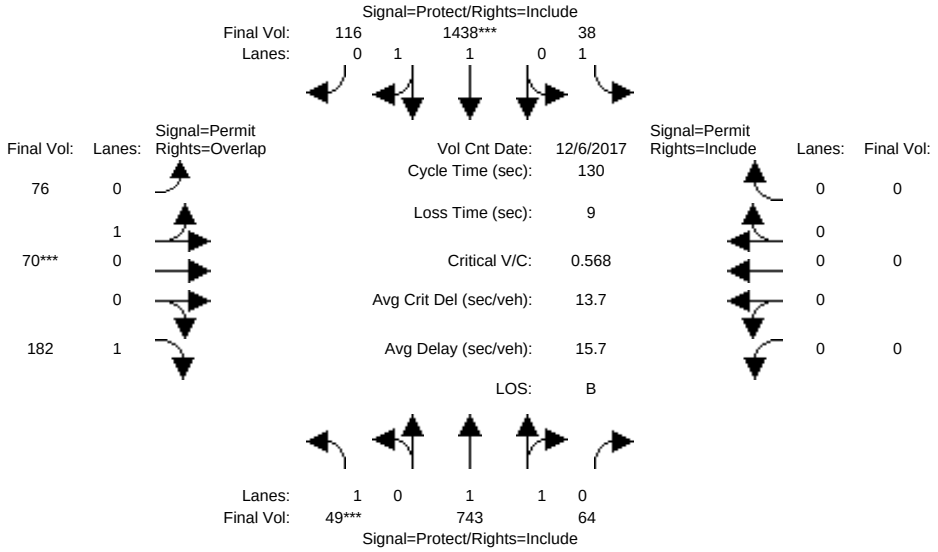
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	92	941	294	38	702	77	35	30	33	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	941	294	38	702	77	35	30	33	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	941	294	38	702	77	35	30	33	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	941	294	38	702	77	35	30	33	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	941	294	38	702	77	35	30	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	941	294	38	702	77	35	30	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.51	0.49	1.00	1.80	0.20	0.54	0.46	1.00	0.00	0.00	0.00
Final Sat.:	1750	2819	881	1750	3334	366	969	831	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.33	0.02	0.21	0.21	0.04	0.04	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	22.4	104	103.8	7.0	88.4	88.4	11.2	11.2	33.6	0.0	0.0	0.0
Volume/Cap:	0.31	0.42	0.42	0.41	0.31	0.31	0.42	0.42	0.07	0.00	0.00	0.00
Uniform Del:	47.5	4.2	4.2	60.0	8.8	8.8	56.8	56.8	36.9	0.0	0.0	0.0
IncremntDel:	0.6	0.1	0.1	2.9	0.1	0.1	1.9	1.9	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	36.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	36.9	0.0	0.0	0.0
LOS by Move:	D	A	A	E	A	A	E+	E+	D+	A	A	A
HCM2kAvgQ:	3	8	8	2	6	6	3	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #95: Fair Oaks Ave & California Ave



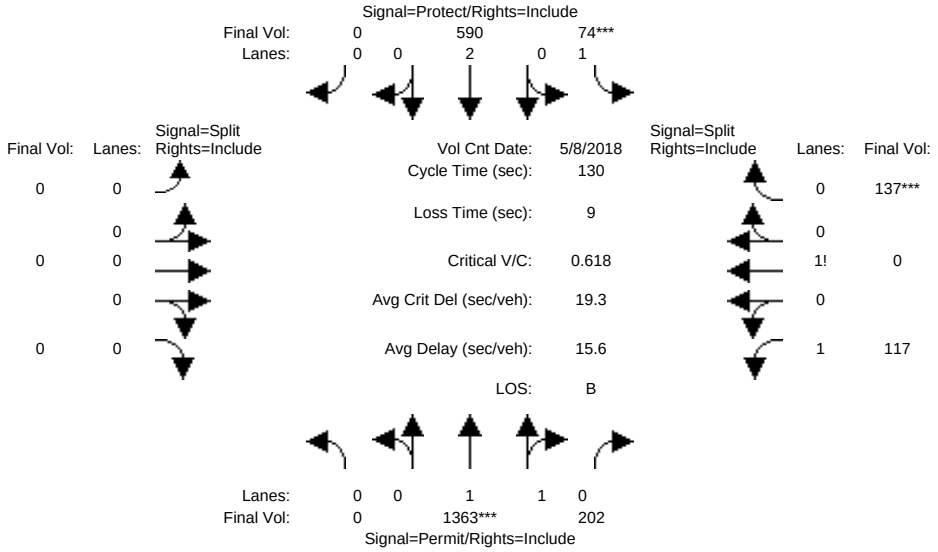
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	49	743	64	38	1438	116	76	70	182	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	743	64	38	1438	116	76	70	182	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	743	64	38	1438	116	76	70	182	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	743	64	38	1438	116	76	70	182	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	743	64	38	1438	116	76	70	182	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	743	64	38	1438	116	76	70	182	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	1.85	0.15	0.52	0.48	1.00	0.00	0.00	0.00
Final Sat.:	1750	3406	293	1750	3424	276	937	863	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.22	0.22	0.02	0.42	0.42	0.08	0.08	0.10	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	7.0	82.2	82.2	20.3	95.5	95.5	18.5	18.5	25.5	0.0	0.0	0.0
Volume/Cap:	0.52	0.34	0.34	0.14	0.57	0.57	0.57	0.57	0.53	0.00	0.00	0.00
Uniform Del:	59.9	11.2	11.2	47.3	7.9	7.9	52.1	52.1	46.9	0.0	0.0	0.0
IncremntDel:	5.1	0.1	0.1	0.2	0.3	0.3	3.1	3.1	1.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	65.0	11.3	11.3	47.5	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.0	11.3	11.3	47.5	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
LOS by Move:	E	B+	B+	D	A	A	E+	E+	D	A	A	A
HCM2kAvgQ:	2	7	7	1	14	14	6	6	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #96: Fair Oaks Ave & Kifer Rd



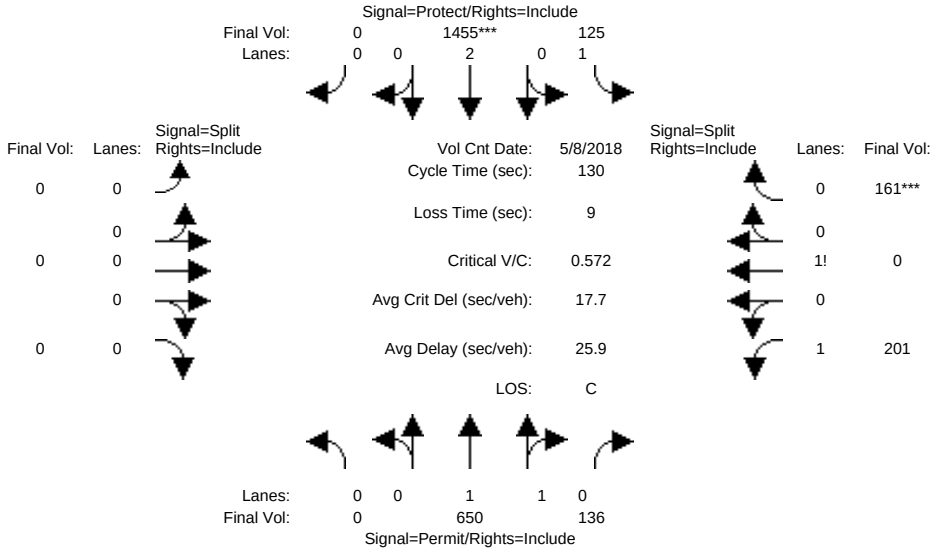
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1363	202	74	590	0	0	0	0	117	0	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1363	202	74	590	0	0	0	0	117	0	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1363	202	74	590	0	0	0	0	117	0	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1363	202	74	590	0	0	0	0	117	0	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1363	202	74	590	0	0	0	0	117	0	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1363	202	74	590	0	0	0	0	117	0	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.73	0.27	1.00	2.00	0.00	0.00	0.00	0.00	1.31	0.00	0.69
Final Sat.:	0	3222	478	1750	3800	0	0	0	0	2284	0	1251
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.04	0.16	0.00	0.00	0.00	0.00	0.05	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	89.0	89.0	8.9	97.9	0.0	0.0	0.0	0.0	23.1	0.0	23.1
Volume/Cap:	0.00	0.62	0.62	0.62	0.21	0.00	0.00	0.00	0.00	0.29	0.00	0.62
Uniform Del:	0.0	11.2	11.2	58.9	4.7	0.0	0.0	0.0	0.0	46.4	0.0	49.4
IncremntDel:	0.0	0.5	0.5	9.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	11.6	11.6	68.3	4.7	0.0	0.0	0.0	0.0	46.5	0.0	52.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.6	11.6	68.3	4.7	0.0	0.0	0.0	0.0	46.5	0.0	52.2
LOS by Move:	A	B+	B+	E	A	A	A	A	A	D	A	D-
HCM2kAvgQ:	0	17	17	3	3	0	0	0	0	3	0	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #96: Fair Oaks Ave & Kifer Rd



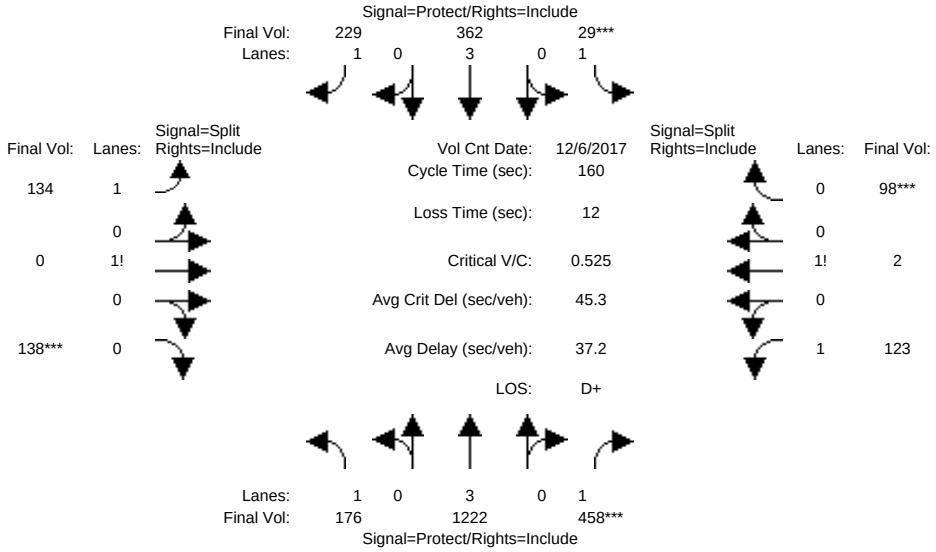
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	650	136	125	1455	0	0	0	0	201	0	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	650	136	125	1455	0	0	0	0	201	0	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	650	136	125	1455	0	0	0	0	201	0	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	650	136	125	1455	0	0	0	0	201	0	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	650	136	125	1455	0	0	0	0	201	0	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	650	136	125	1455	0	0	0	0	201	0	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.64	0.36	1.00	2.00	0.00	0.00	0.00	0.00	1.38	0.00	0.62
Final Sat.:	0	3059	640	1750	3800	0	0	0	0	2423	0	1077
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.07	0.38	0.00	0.00	0.00	0.00	0.08	0.00	0.15
Crit Moves:					****							****
Green Time:	0.0	34.5	34.5	62.2	96.7	0.0	0.0	0.0	0.0	24.3	0.0	24.3
Volume/Cap:	0.00	0.80	0.80	0.15	0.51	0.00	0.00	0.00	0.00	0.44	0.00	0.80
Uniform Del:	0.0	44.5	44.5	19.0	6.9	0.0	0.0	0.0	0.0	46.9	0.0	50.5
IncremntDel:	0.0	4.7	4.7	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	9.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	49.3	49.3	19.1	7.1	0.0	0.0	0.0	0.0	47.3	0.0	60.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	49.3	49.3	19.1	7.1	0.0	0.0	0.0	0.0	47.3	0.0	60.3
LOS by Move:	A	D	D	B-	A	A	A	A	A	D	A	E
HCM2kAvgQ:	0	15	15	3	12	0	0	0	0	5	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #97: Wolfe Rd & Central Expwy Ramps



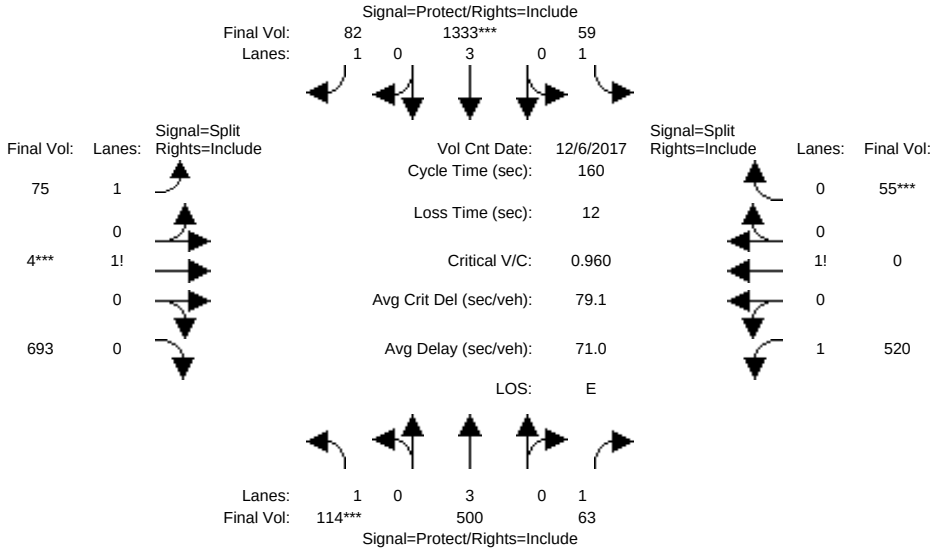
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1222	458	29	362	229	134	0	138	123	2	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	1222	458	29	362	229	134	0	138	123	2	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	1222	458	29	362	229	134	0	138	123	2	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	1222	458	29	362	229	134	0	138	123	2	98
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.33	0.00	0.67	1.38	0.01	0.61
Final Sat.:	1750	5700	1750	1750	5700	1750	2333	0	1200	2416	22	1062
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.26	0.02	0.06	0.13	0.06	0.00	0.11	0.05	0.09	0.09
Crit Moves:			****	****					****			****
Green Time:	37.2	78.7	78.7	7.0	48.5	48.5	34.6	0.0	34.6	27.7	27.7	27.7
Volume/Cap:	0.43	0.44	0.53	0.38	0.21	0.43	0.27	0.00	0.53	0.29	0.53	0.53
Uniform Del:	52.4	26.3	28.0	74.4	41.5	44.7	52.2	0.0	55.6	57.6	60.2	60.2
IncremntDel:	0.7	0.1	0.6	3.1	0.1	0.6	0.1	0.0	1.1	0.2	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.1	26.4	28.6	77.5	41.6	45.3	52.3	0.0	56.6	57.8	61.5	61.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.1	26.4	28.6	77.5	41.6	45.3	52.3	0.0	56.6	57.8	61.5	61.5
LOS by Move:	D-	C	C	E-	D	D	D-	A	E+	E+	E	E
HCM2kAvgQ:	8	12	16	1	4	9	4	0	10	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #97: Wolfe Rd & Central Expwy Ramps



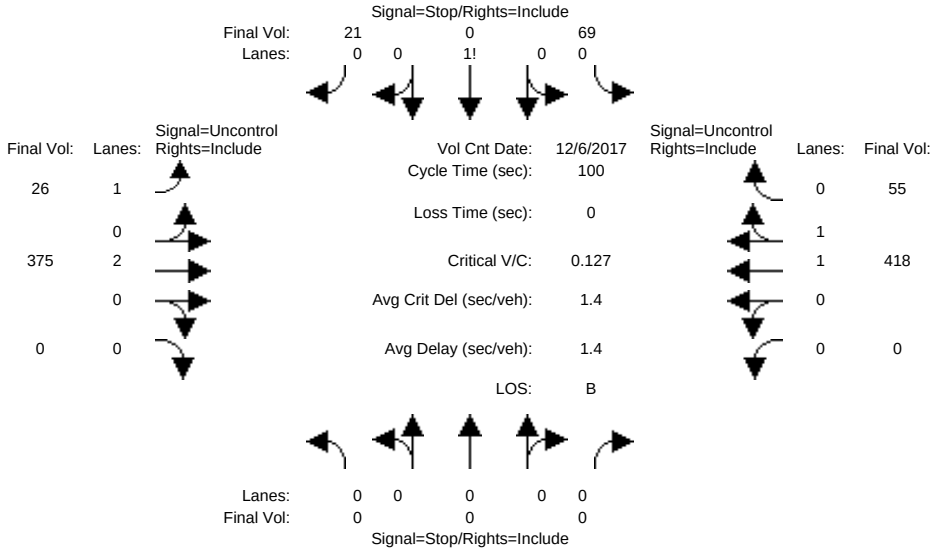
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	500	63	59	1333	82	75	4	693	520	0	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	500	63	59	1333	82	75	4	693	520	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	500	63	59	1333	82	75	4	693	520	0	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	500	63	59	1333	82	75	4	693	520	0	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.05	0.01	0.94	1.83	0.00	0.17
Final Sat.:	1750	5700	1750	1750	5700	1750	1842	10	1696	3194	0	306
Capacity Analysis Module:												
Vol/Sat:	0.07	0.09	0.04	0.03	0.23	0.05	0.04	0.41	0.41	0.16	0.00	0.18
Crit Moves:	****				****			****				****
Green Time:	10.9	33.3	33.3	16.6	39.0	39.0	68.1	68.1	68.1	30.0	0.0	30.0
Volume/Cap:	0.96	0.42	0.17	0.33	0.96	0.19	0.10	0.96	0.96	0.87	0.00	0.96
Uniform Del:	74.4	55.0	52.1	66.5	59.7	48.0	27.5	44.6	44.6	63.1	0.0	64.4
IncremntDel:	69.7	0.2	0.2	1.0	15.5	0.2	0.0	22.3	22.3	11.7	0.0	26.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	144.0	55.3	52.3	67.6	75.3	48.2	27.5	66.9	66.9	74.8	0.0	91.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	144.0	55.3	52.3	67.6	75.3	48.2	27.5	66.9	66.9	74.8	0.0	91.3
LOS by Move:	F	E+	D-	E	E-	D	C	E	E	E	A	F
HCM2kAvgQ:	7	7	3	3	24	3	2	42	42	17	0	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing AM

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	69	0	21	26	375	0	0	418	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	69	0	21	26	375	0	0	418	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Adju:	0	0	-1	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	-1	69	0	21	26	375	0	0	418	55
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	69	0	21	26	375	0	0	418	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	69	0	21	26	375	0	0	418	55
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	685	873	237	473	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	386	291	771	1099	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	379	284	771	1099	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	503	437	xxxxx	543	454	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	0.00	0.03	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	584	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.3			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	-1	69	0	21	26	375	0	0	418	55
ApproachDel:	xxxxxx			12.3			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=OVERFLOW]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=-1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=963]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=90]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=963]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	-1	69	0	21	26	375	0	0	418	55

Major Street Volume: 874
Minor Approach Volume: 90
Minor Approach Volume Threshold: 331

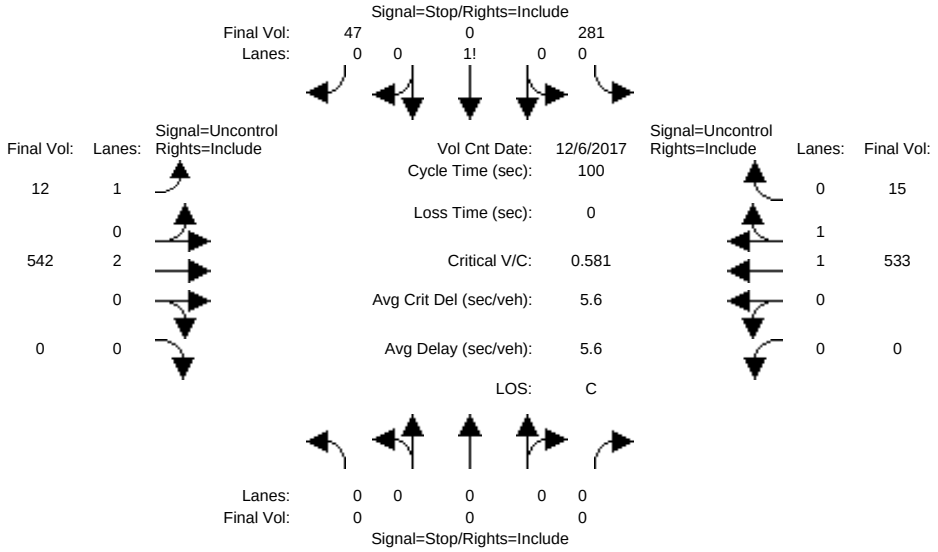
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	0	0	0	281	0	47	12	542	0	0	533	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	281	0	47	12	542	0	0	533	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	281	0	47	12	542	0	0	533	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	281	0	47	12	542	0	0	533	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	281	0	47	12	542	0	0	533	15
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	836	1107	274	548	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	310	212	730	1032	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	307	210	730	1032	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	416	386	xxxxx	484	392	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.58	0.00	0.06	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	508	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	24.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			24.1			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	281	0	47	12	542	0	0	533	15
ApproachDel:	xxxxxx			24.1			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=328]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1430]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	281	0	47	12	542	0	0	533	15

Major Street Volume: 1102
Minor Approach Volume: 328
Minor Approach Volume Threshold: 251

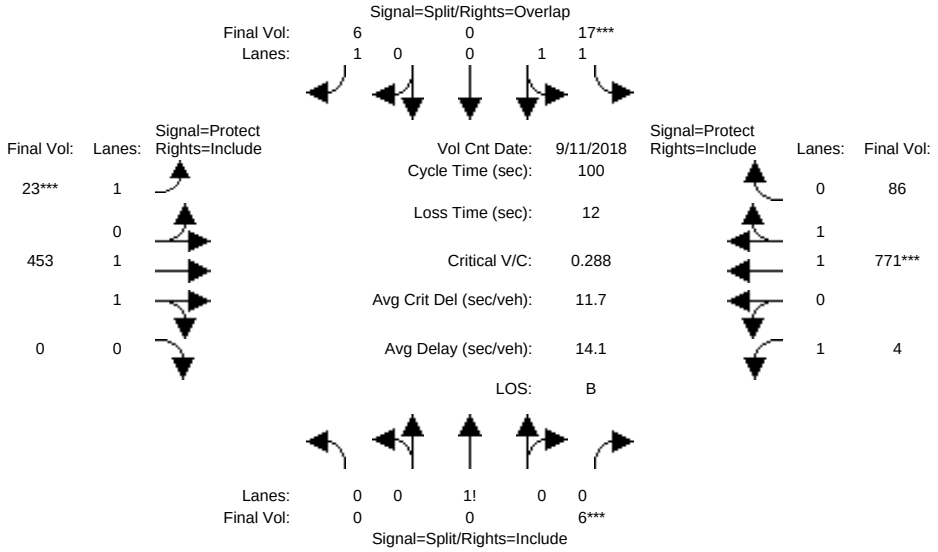
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #99: Semiconductor Dr & Kifer Rd



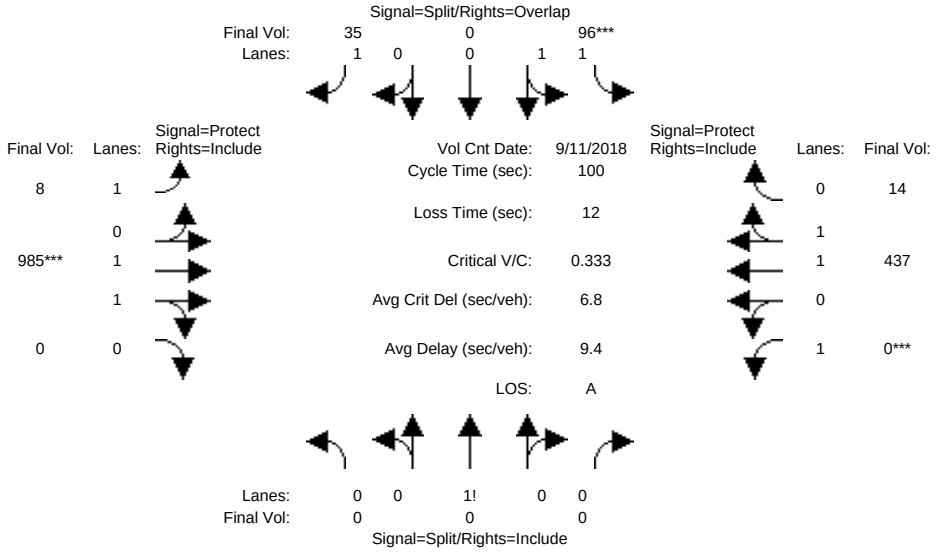
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	0	0	6	17	0	6	23	453	0	4	771	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	6	17	0	6	23	453	0	4	771	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	6	17	0	6	23	453	0	4	771	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	6	17	0	6	23	453	0	4	771	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	6	17	0	6	23	453	0	4	771	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	6	17	0	6	23	453	0	4	771	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.79	0.21
Final Sat.:	0	0	1750	3550	0	1750	1750	3700	0	1750	3328	371
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.12	0.00	0.00	0.23	0.23
Crit Moves:			****	****			****				****	
Green Time:	0.0	0.0	10.0	10.0	0.0	17.0	7.0	43.3	0.0	24.7	61.0	61.0
Volume/Cap:	0.00	0.00	0.03	0.05	0.00	0.02	0.19	0.28	0.00	0.01	0.38	0.38
Uniform Del:	0.0	0.0	40.6	40.7	0.0	34.6	43.8	18.3	0.0	28.4	9.9	9.9
IncremntDel:	0.0	0.0	0.1	0.1	0.0	0.0	0.7	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	18.4	0.0	28.4	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	18.4	0.0	28.4	10.0	10.0
LOS by Move:	A	A	D	D	A	C-	D	B-	A	C	B+	B+
HCM2kAvgQ:	0	0	0	0	0	0	1	4	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #99: Semiconductor Dr & Kifer Rd



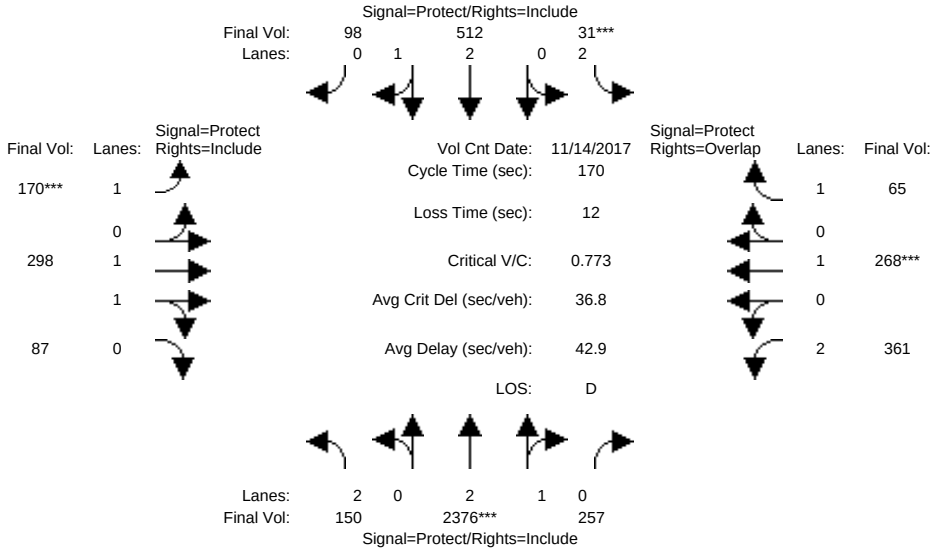
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	0	0	0	96	0	35	8	985	0	0	437	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	96	0	35	8	985	0	0	437	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	96	0	35	8	985	0	0	437	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	35	8	985	0	0	437	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	96	0	35	8	985	0	0	437	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	96	0	35	8	985	0	0	437	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.97	0.95
Lanes:	0.00	1.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	0	1750	0	3550	0	1750	1750	3700	0	1750	3585	115
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.27	0.00	0.00	0.12	0.12
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	10.0	0.0	38.5	28.5	78.0	0.0	0.0	49.5	49.5
Volume/Cap:	0.00	0.00	0.00	0.27	0.00	0.05	0.02	0.34	0.00	0.00	0.25	0.25
Uniform Del:	0.0	0.0	0.0	41.6	0.0	19.3	25.7	3.3	0.0	0.0	14.5	14.5
IncremntDel:	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	42.0	0.0	19.4	25.7	3.4	0.0	0.0	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	42.0	0.0	19.4	25.7	3.4	0.0	0.0	14.6	14.6
LOS by Move:	A	A	A	D	A	B-	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	1	0	5	0	0	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



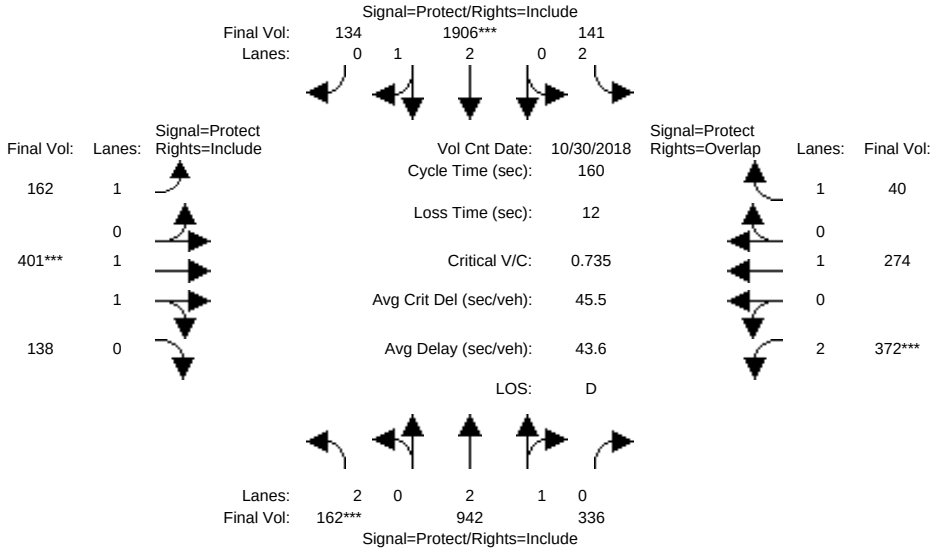
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	150	2376	257	31	512	98	170	298	87	361	268	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	2376	257	31	512	98	170	298	87	361	268	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2376	257	31	512	98	170	298	87	361	268	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	2376	257	31	512	98	170	298	87	361	268	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	2376	257	31	512	98	170	298	87	361	268	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	2376	257	31	512	98	170	298	87	361	268	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.70	0.30	2.00	2.50	0.50	1.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	3150	5053	547	3150	4699	899	1750	2863	836	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.11	0.11	0.10	0.10	0.10	0.11	0.14	0.04
Crit Moves:		****		****			****				****	
Green Time:	32.6	100	100.2	7.0	74.6	74.6	20.7	24.2	24.2	26.6	30.1	37.1
Volume/Cap:	0.25	0.80	0.80	0.24	0.25	0.25	0.80	0.73	0.73	0.73	0.80	0.17
Uniform Del:	58.3	27.0	27.0	78.9	30.0	30.0	72.6	69.8	69.8	68.3	67.1	54.0
IncremntDel:	0.2	1.4	1.4	1.0	0.1	0.1	18.7	5.2	5.2	5.6	12.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	28.5	28.5	79.9	30.1	30.1	91.3	75.1	75.1	73.9	79.6	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	28.5	28.5	79.9	30.1	30.1	91.3	75.1	75.1	73.9	79.6	54.2
LOS by Move:	E+	C	C	E-	C	C	F	E-	E-	E	E-	D-
HCM2kAvgQ:	4	35	35	1	6	6	11	11	11	11	13	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



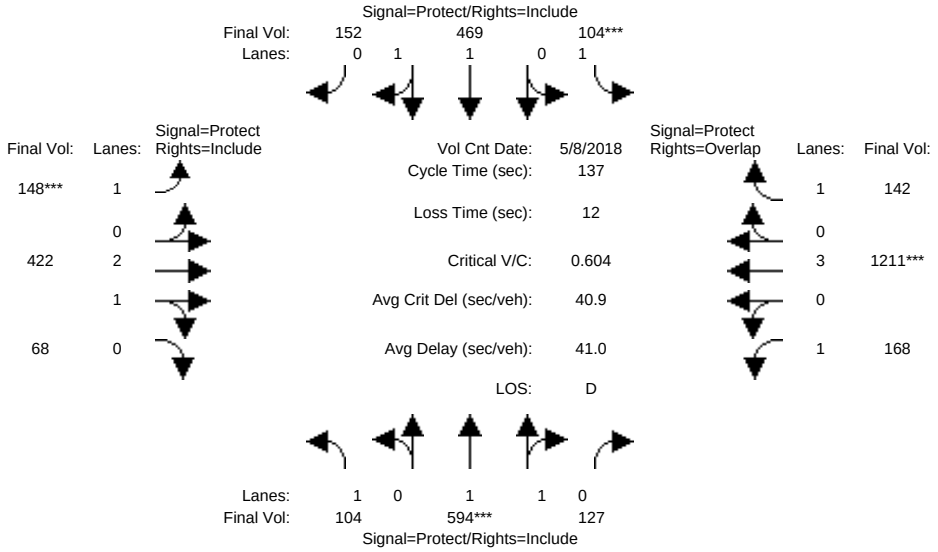
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	162	942	336	141	1906	134	162	401	138	372	274	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	942	336	141	1906	134	162	401	138	372	274	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	942	336	141	1906	134	162	401	138	372	274	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	942	336	141	1906	134	162	401	138	372	274	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	942	336	141	1906	134	162	401	138	372	274	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	942	336	141	1906	134	162	401	138	372	274	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.18	0.82	2.00	2.80	0.20	1.00	1.47	0.53	2.00	1.00	1.00
Final Sat.:	3150	4126	1472	3150	5232	368	1750	2752	947	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.23	0.04	0.36	0.36	0.09	0.15	0.15	0.12	0.14	0.02
Crit Moves:	****				****			****			****	
Green Time:	11.2	75.7	75.7	14.8	79.3	79.3	22.5	31.7	31.7	25.7	35.0	49.8
Volume/Cap:	0.73	0.48	0.48	0.48	0.73	0.73	0.66	0.73	0.73	0.73	0.66	0.07
Uniform Del:	72.9	28.8	28.8	68.9	32.0	32.0	65.1	60.2	60.2	63.9	57.1	38.8
IncremntDel:	12.1	0.1	0.1	1.3	1.0	1.0	6.5	3.9	3.9	5.5	3.9	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.0	28.9	28.9	70.2	33.0	33.0	71.6	64.1	64.1	69.4	60.9	38.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	28.9	28.9	70.2	33.0	33.0	71.6	64.1	64.1	69.4	60.9	38.9
LOS by Move:	F	C	C	E	C-	C-	E	E	E	E	E	D+
HCM2kAvgQ:	5	14	14	4	26	26	9	14	14	10	12	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



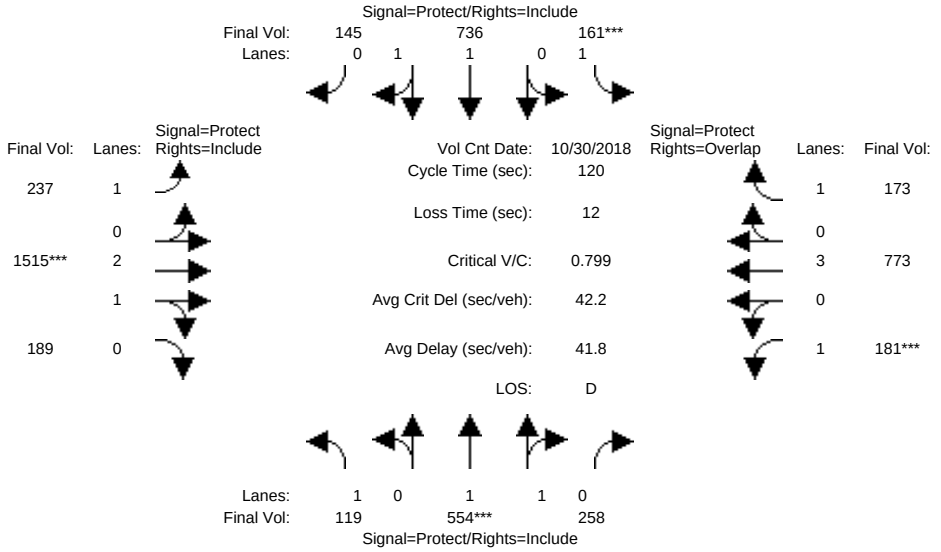
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	104	594	127	104	469	152	148	422	68	168	1211	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	594	127	104	469	152	148	422	68	168	1211	142
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	594	127	104	469	152	148	422	68	168	1211	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	594	127	104	469	152	148	422	68	168	1211	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	594	127	104	469	152	148	422	68	168	1211	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	594	127	104	469	152	148	422	68	168	1211	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	1.50	0.50	1.00	2.57	0.43	1.00	3.00	1.00
Final Sat.:	1750	3048	652	1750	2794	905	1750	4822	777	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.06	0.17	0.17	0.08	0.09	0.09	0.10	0.21	0.08
Crit Moves:		****		****			****				****	
Green Time:	15.1	44.2	44.2	13.5	42.6	42.6	19.2	32.1	32.1	35.2	48.2	61.6
Volume/Cap:	0.54	0.60	0.60	0.60	0.54	0.54	0.60	0.37	0.37	0.37	0.60	0.18
Uniform Del:	57.7	39.1	39.1	59.2	39.1	39.1	55.3	44.0	44.0	41.8	36.6	22.6
IncremntDel:	3.1	0.9	0.9	6.0	0.5	0.5	4.2	0.2	0.2	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	60.8	39.9	39.9	65.2	39.6	39.6	59.6	44.2	44.2	42.3	37.1	22.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.8	39.9	39.9	65.2	39.6	39.6	59.6	44.2	44.2	42.3	37.1	22.7
LOS by Move:	E	D	D	E	D	D	E+	D	D	D	D+	C+
HCM2kAvgQ:	4	12	12	5	11	11	6	6	6	6	13	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



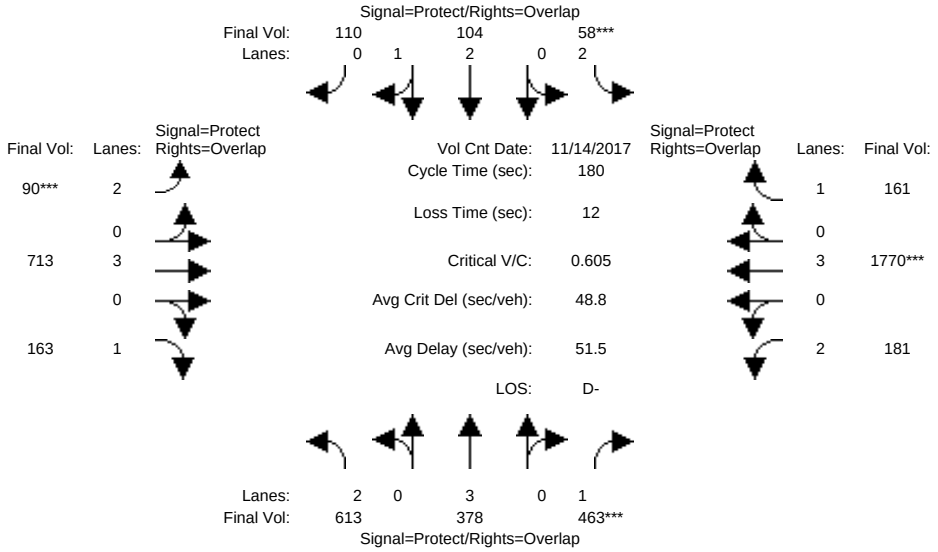
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	119	554	258	161	736	145	237	1515	189	181	773	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	554	258	161	736	145	237	1515	189	181	773	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	554	258	161	736	145	237	1515	189	181	773	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	554	258	161	736	145	237	1515	189	181	773	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	554	258	161	736	145	237	1515	189	181	773	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	554	258	161	736	145	237	1515	189	181	773	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.35	0.65	1.00	1.66	0.34	1.00	2.65	0.35	1.00	3.00	1.00
Final Sat.:	1750	2524	1175	1750	3091	609	1750	4978	621	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.09	0.24	0.24	0.14	0.30	0.30	0.10	0.14	0.10
Crit Moves:		****		****				****		****		
Green Time:	10.4	33.0	33.0	13.8	36.4	36.4	30.6	45.7	45.7	15.5	30.6	44.4
Volume/Cap:	0.79	0.80	0.80	0.80	0.79	0.79	0.53	0.80	0.80	0.80	0.53	0.27
Uniform Del:	53.7	40.4	40.4	51.7	38.2	38.2	38.5	33.1	33.1	50.7	38.5	26.4
IncremntDel:	23.1	4.6	4.6	19.8	3.7	3.7	1.2	2.2	2.2	17.9	0.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	76.8	45.0	45.0	71.5	42.0	42.0	39.8	35.3	35.3	68.6	38.9	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.8	45.0	45.0	71.5	42.0	42.0	39.8	35.3	35.3	68.6	38.9	26.6
LOS by Move:	E-	D	D	E	D	D	D	D+	D+	E	D+	C
HCM2kAvgQ:	5	15	15	7	15	15	8	19	19	8	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5320: CENTRAL EXPWY/MARY AVE



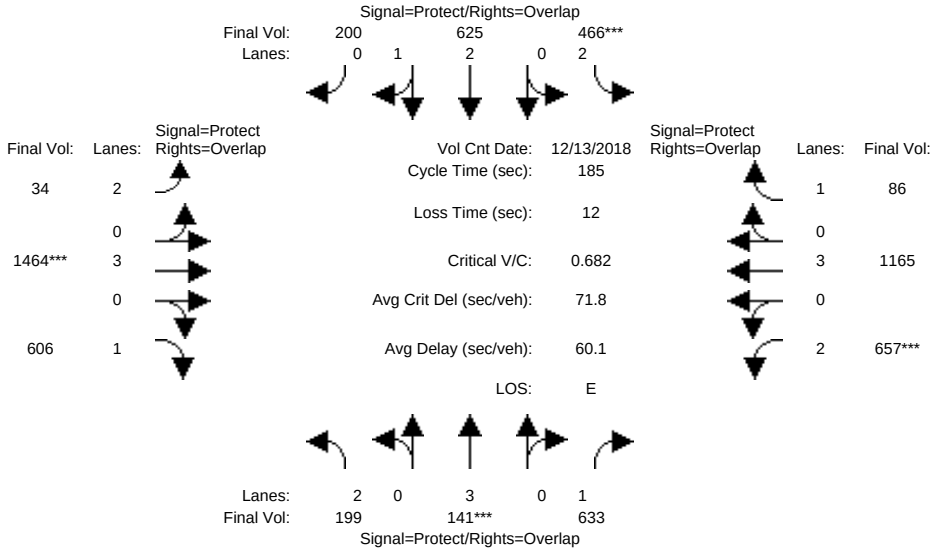
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	613	378	463	58	104	110	90	713	163	181	1770	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	378	463	58	104	110	90	713	163	181	1770	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	378	463	58	104	110	90	713	163	181	1770	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	378	463	58	104	110	90	713	163	181	1770	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	378	463	58	104	110	90	713	163	181	1770	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	378	463	58	104	110	90	713	163	181	1770	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.07	0.26	0.02	0.03	0.06	0.03	0.13	0.09	0.06	0.31	0.09
Crit Moves:			****	****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.90	0.21	0.62	0.28	0.15	0.25	0.40	0.34	0.16	0.55	0.77	0.20
Uniform Del:	68.7	44.3	40.3	80.1	62.5	54.1	79.9	40.7	16.9	76.7	46.3	27.8
IncremntDel:	15.1	0.1	1.6	0.7	0.1	0.2	1.2	0.1	0.1	2.1	1.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	40.8	17.0	78.7	47.9	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	40.8	17.0	78.7	47.9	28.0
LOS by Move:	F	D	D	F	E	D-	F	D	B	E-	D	C
HCM2kAvgQ:	21	5	21	2	2	5	3	9	4	6	28	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5320: CENTRAL EXPWY/MARY AVE



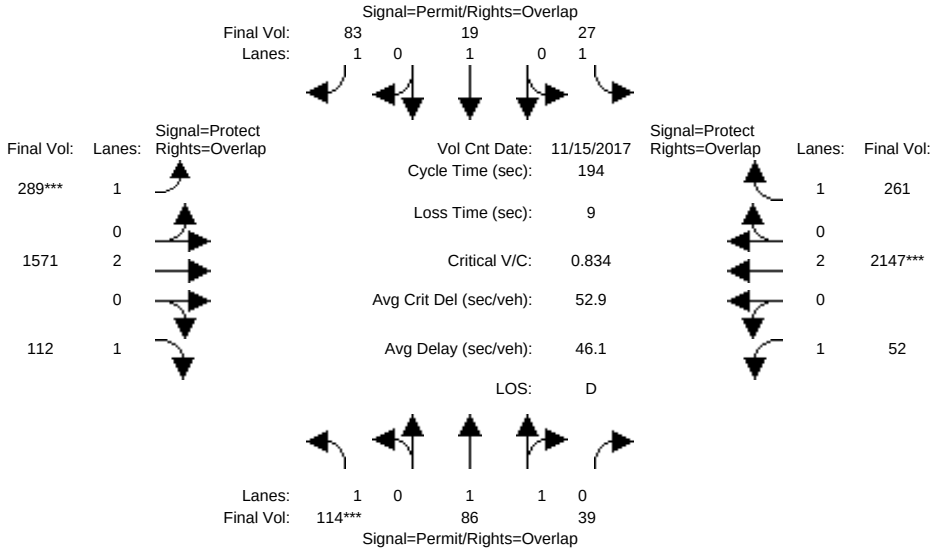
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	199	141	633	466	625	200	34	1464	606	657	1165	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	141	633	466	625	200	34	1464	606	657	1165	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	141	633	466	625	200	34	1464	606	657	1165	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	141	633	466	625	200	34	1464	606	657	1165	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	141	633	466	625	200	34	1464	606	657	1165	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	141	633	466	625	200	34	1464	606	657	1165	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.25	0.75	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4241	1357	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.36	0.15	0.15	0.15	0.01	0.26	0.35	0.21	0.20	0.05
Crit Moves:		****		****				****		****		
Green Time:	16.9	37.0	83.2	32.8	52.9	62.7	9.8	57.0	73.9	46.2	93.4	126.2
Volume/Cap:	0.69	0.12	0.80	0.83	0.52	0.44	0.20	0.83	0.87	0.83	0.40	0.07
Uniform Del:	81.5	60.7	43.8	73.5	55.3	47.4	83.9	59.6	51.1	65.7	28.5	9.8
IncremntDel:	7.0	0.0	6.0	10.5	0.3	0.2	0.6	3.6	11.2	7.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.14	1.03	1.25	1.60
Delay/Veh:	88.5	60.8	49.9	83.9	55.6	47.6	84.5	67.3	69.2	75.6	35.6	15.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	60.8	49.9	83.9	55.6	47.6	84.5	67.3	69.2	75.6	35.6	15.7
LOS by Move:	F	E	D	F	E+	D	F	E	E	E-	D+	B
HCM2kAvgQ:	7	2	34	17	13	12	1	28	37	23	16	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



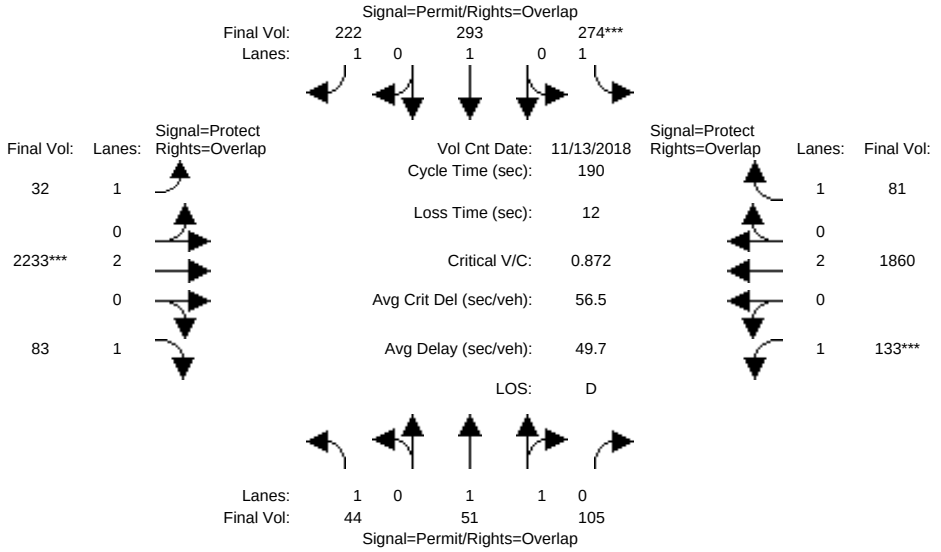
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	114	86	39	27	19	83	289	1571	112	52	2147	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	86	39	27	19	83	289	1571	112	52	2147	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	86	39	27	19	83	289	1571	112	52	2147	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	86	39	27	19	83	289	1571	112	52	2147	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	86	39	27	19	83	289	1571	112	52	2147	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	86	39	27	19	83	289	1571	112	52	2147	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.36	0.64	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	2545	1154	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.03	0.02	0.01	0.05	0.17	0.41	0.06	0.03	0.56	0.15
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.53	0.28	0.17	0.13	0.08	0.16	0.93	0.58	0.09	0.41	0.93	0.25
Uniform Del:	79.9	77.4	65.0	75.7	75.3	49.8	78.5	13.9	8.7	85.9	34.4	17.6
IncremntDel:	2.6	0.3	0.1	0.3	0.1	0.1	33.0	0.3	0.0	2.1	7.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	36.9	22.9	88.0	41.9	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	36.9	22.9	88.0	41.9	17.7
LOS by Move:	F	E-	E	E-	E-	D	F	D+	C+	F	D	B
HCM2kAvgQ:	7	3	3	1	1	4	22	39	5	3	58	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



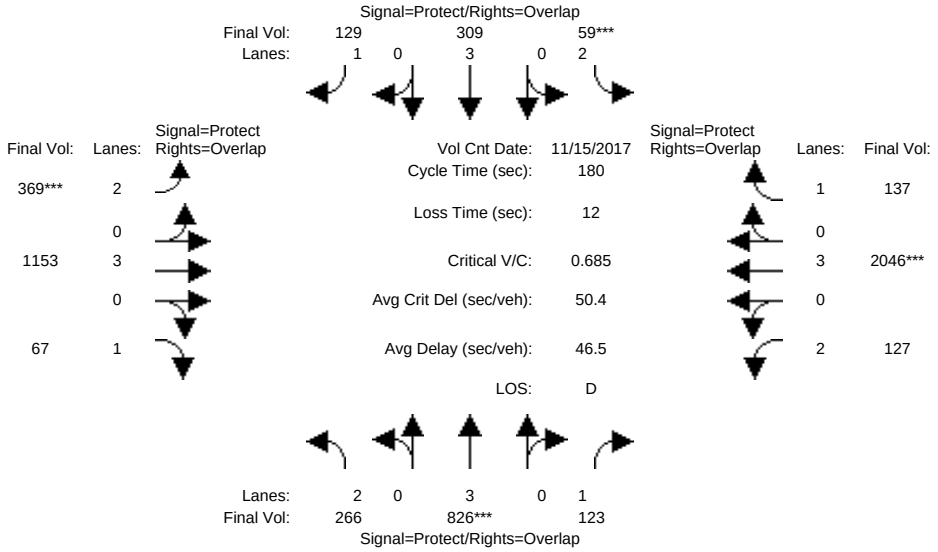
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	44	51	105	274	293	222	32	2233	83	133	1860	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	51	105	274	293	222	32	2233	83	133	1860	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	51	105	274	293	222	32	2233	83	133	1860	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	51	105	274	293	222	32	2233	83	133	1860	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	51	105	274	293	222	32	2233	83	133	1860	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	51	105	274	293	222	32	2233	83	133	1860	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.16	0.15	0.13	0.02	0.59	0.05	0.08	0.49	0.05
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.13	0.14	0.21	0.81	0.80	0.49	0.28	0.89	0.07	0.85	0.72	0.07
Uniform Del:	67.5	67.6	55.4	78.0	77.8	63.8	90.1	28.6	12.4	90.7	19.9	10.6
IncremntDel:	0.2	0.1	0.1	13.7	11.7	0.9	1.4	4.5	0.0	33.9	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	48.2	18.9	124.5	32.7	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	48.2	18.9	124.5	32.7	17.0
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	C-	B
HCM2kAvgQ:	2	2	5	18	18	12	2	64	3	9	45	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



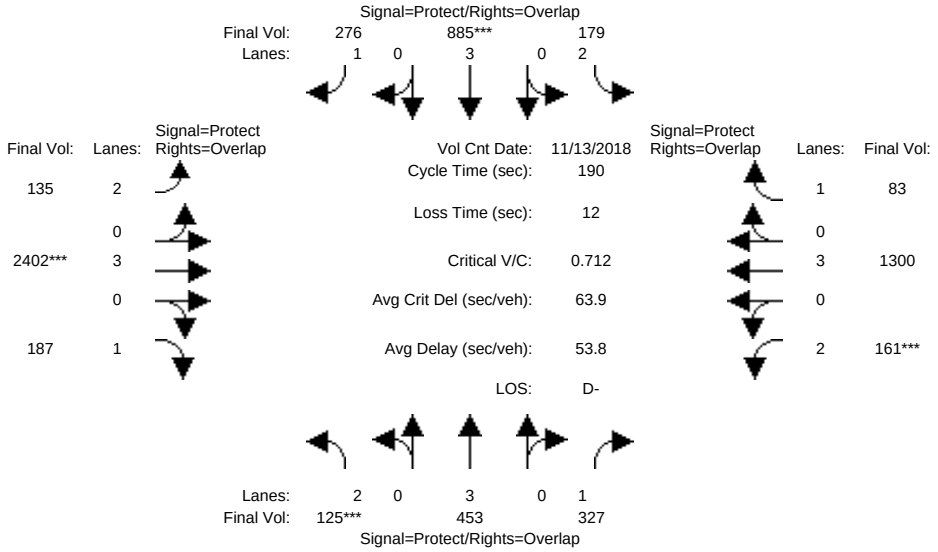
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	266	826	123	59	309	129	369	1153	67	127	2046	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	826	123	59	309	129	369	1153	67	127	2046	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	826	123	59	309	129	369	1153	67	127	2046	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	826	123	59	309	129	369	1153	67	127	2046	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	826	123	59	309	129	369	1153	67	127	2046	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	826	123	59	309	129	369	1153	67	127	2046	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.07	0.02	0.05	0.07	0.12	0.20	0.04	0.04	0.36	0.08
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.77	0.65	0.22	0.24	0.28	0.22	0.82	0.37	0.06	0.44	0.73	0.14
Uniform Del:	78.0	63.5	45.5	78.1	62.1	42.9	74.8	23.8	11.4	77.5	36.4	18.2
IncremntDel:	10.3	1.2	0.2	0.5	0.1	0.2	11.1	0.1	0.0	1.1	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.8	11.5	78.6	37.4	18.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.8	11.5	78.6	37.4	18.3
LOS by Move:	F	E	D	E-	E	D	F	C	B+	E-	D+	B-
HCM2kAvgQ:	9	13	5	2	5	5	12	12	1	4	30	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



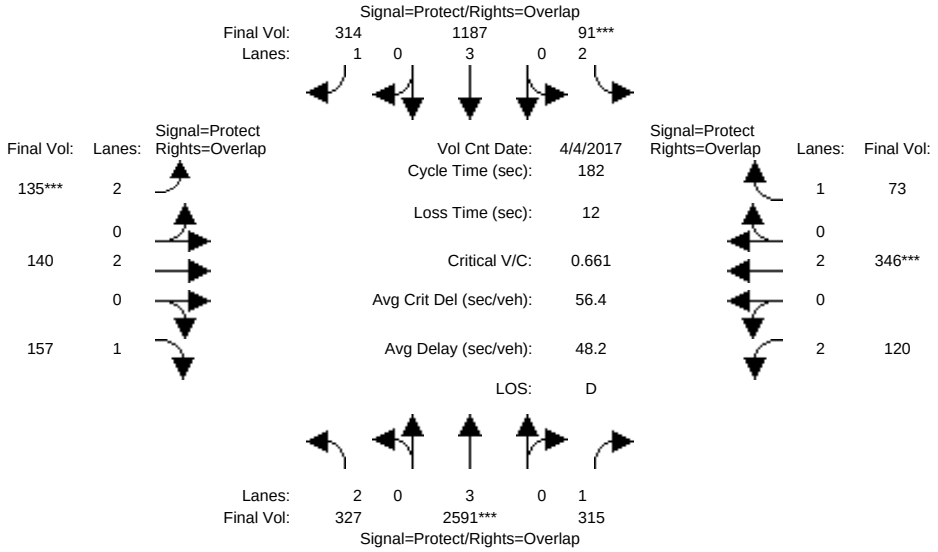
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	125	453	327	179	885	276	135	2402	187	161	1300	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	453	327	179	885	276	135	2402	187	161	1300	83
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	453	327	179	885	276	135	2402	187	161	1300	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	453	327	179	885	276	135	2402	187	161	1300	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	453	327	179	885	276	135	2402	187	161	1300	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	453	327	179	885	276	135	2402	187	161	1300	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.08	0.19	0.06	0.16	0.16	0.04	0.42	0.11	0.05	0.23	0.05
Crit Moves:	****				****			****			****	
Green Time:	15.0	39.1	53.1	16.0	40.1	57.8	17.7	109	123.9	14.0	105	121.2
Volume/Cap:	0.50	0.39	0.67	0.67	0.74	0.52	0.46	0.74	0.16	0.69	0.41	0.07
Uniform Del:	83.9	65.1	60.7	84.4	70.0	54.6	81.6	29.9	12.9	85.9	24.5	13.1
IncremntDel:	1.6	0.2	3.6	6.6	2.4	0.9	1.1	0.9	0.1	8.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.89	2.25	1.00	0.67	0.47
Delay/Veh:	85.6	65.3	64.2	91.1	72.4	55.5	88.3	57.6	29.0	94.7	16.6	6.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	65.3	64.2	91.1	72.4	55.5	88.3	57.6	29.0	94.7	16.6	6.2
LOS by Move:	F	E	E	F	E	E+	F	E+	C	F	B	A
HCM2kAvgQ:	4	7	18	6	16	14	4	41	9	7	9	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



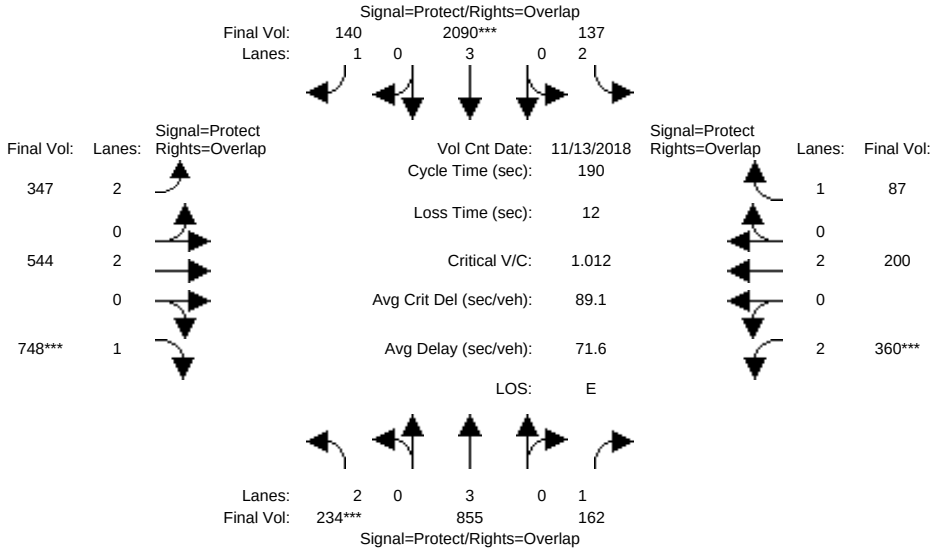
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	327	2978	315	91	1364	314	135	140	157	120	346	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	2978	315	91	1364	314	135	140	157	120	346	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	2978	315	91	1364	314	135	140	157	120	346	73
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	2591	315	91	1187	314	135	140	157	120	346	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	2591	315	91	1187	314	135	140	157	120	346	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	2591	315	91	1187	314	135	140	157	120	346	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.45	0.18	0.03	0.21	0.18	0.04	0.04	0.10	0.04	0.09	0.04
Crit Moves:		****		****			****				****	
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.81	0.88	0.30	0.31	0.43	0.32	0.50	0.21	0.32	0.46	0.53	0.16
Uniform Del:	77.1	39.0	17.9	76.9	31.1	20.9	79.5	64.3	48.9	79.7	68.6	51.2
IncremntDel:	11.4	3.4	0.2	0.6	0.1	0.2	1.5	0.2	0.4	1.3	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.5	52.6	25.0	77.5	24.8	13.8	80.9	64.4	49.3	81.0	69.5	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	52.6	25.0	77.5	24.8	13.8	80.9	64.4	49.3	81.0	69.5	51.3
LOS by Move:	F	D-	C	E-	C	B	F	E	D	F	E	D-
HCM2kAvgQ:	13	46	12	3	11	6	4	3	7	4	9	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



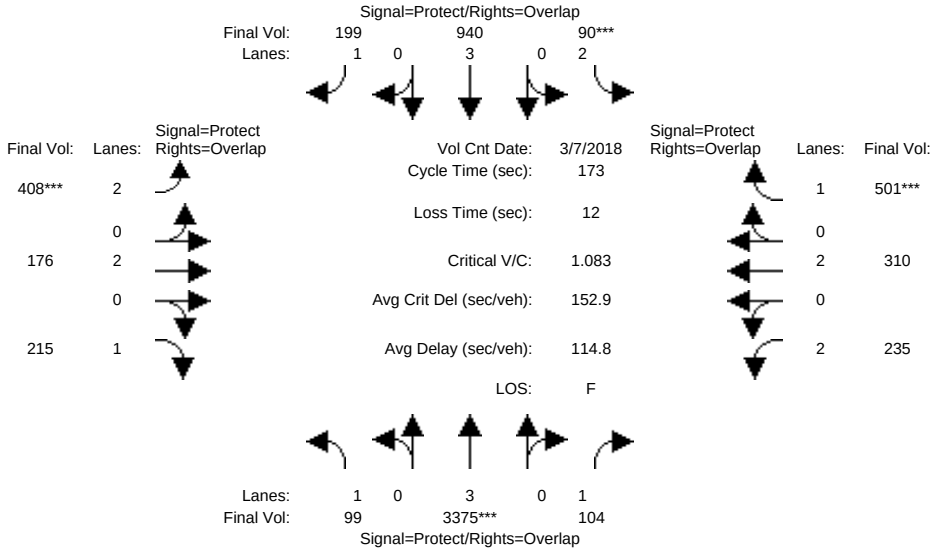
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	234	1276	162	137	2612	140	347	544	748	360	200	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	1276	162	137	2612	140	347	544	748	360	200	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	1276	162	137	2612	140	347	544	748	360	200	87
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	855	162	137	2090	140	347	544	748	360	200	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	855	162	137	2090	140	347	544	748	360	200	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	855	162	137	2090	140	347	544	748	360	200	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.15	0.09	0.04	0.37	0.08	0.11	0.14	0.47	0.11	0.05	0.05
Crit Moves:	****				****				****	****		
Green Time:	22.0	86.0	110.0	15.0	79.0	107.4	28.4	53.0	75.0	24.0	48.6	63.6
Volume/Cap:	0.64	0.33	0.16	0.55	0.88	0.14	0.74	0.51	1.18	0.90	0.21	0.15
Uniform Del:	80.2	33.5	18.6	84.3	51.2	19.5	77.2	57.6	57.5	81.9	55.6	44.3
IncremntDel:	3.9	0.1	0.1	2.6	4.2	0.1	6.0	0.4	98.0	23.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.1	28.0	11.6	86.9	63.1	26.1	83.2	58.1	155.5	105.4	55.7	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.1	28.0	11.6	86.9	63.1	26.1	83.2	58.1	155.5	105.4	55.7	44.4
LOS by Move:	F	C	B+	F	E	C	F	E+	F	F	E+	D
HCM2kAvgQ:	9	8	3	4	38	5	12	13	63	14	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5613: LAWRENCE EXPWY/REED AVE



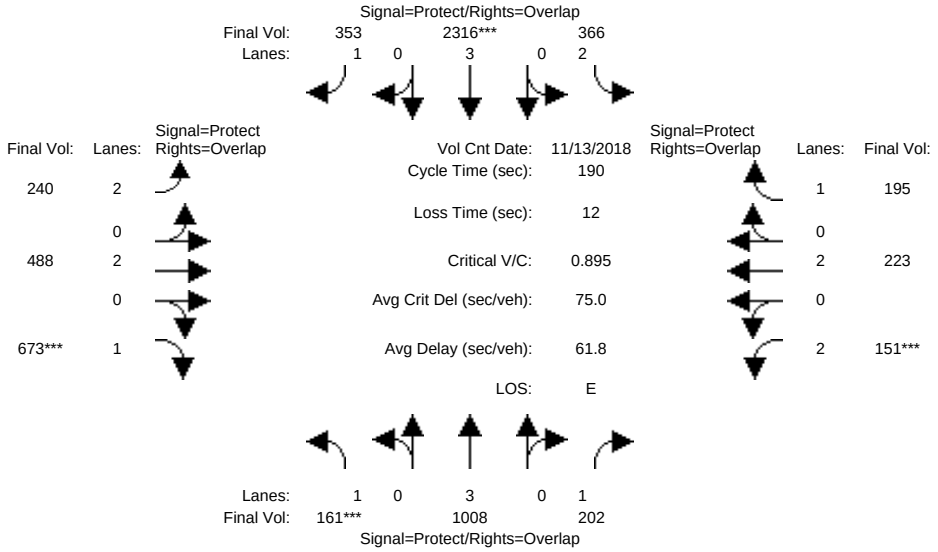
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	99	3879	104	90	1081	199	408	176	215	235	310	501
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	3879	104	90	1081	199	408	176	215	235	310	501
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	3879	104	90	1081	199	408	176	215	235	310	501
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	3375	104	90	940	199	408	176	215	235	310	501
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	3375	104	90	940	199	408	176	215	235	310	501
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	3375	104	90	940	199	408	176	215	235	310	501
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.59	0.06	0.03	0.16	0.11	0.13	0.05	0.12	0.07	0.08	0.29
Crit Moves:		****		****			****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	0.69	1.27	0.11	0.37	0.36	0.19	0.97	0.21	0.40	0.75	0.43	1.08
Uniform Del:	77.4	46.3	17.4	76.0	30.1	16.1	74.6	54.8	47.8	75.7	62.1	63.6
IncremntDel:	13.8	126	0.0	1.0	0.1	0.1	36.0	0.1	0.5	9.4	0.4	66.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	91.2	163	11.4	77.0	24.9	9.6	110.6	55.0	48.3	85.1	62.5	129.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.2	163	11.4	77.0	24.9	9.6	110.6	55.0	48.3	85.1	62.5	129.9
LOS by Move:	F	F	B+	E-	C	A	F	D-	D	F	E	F
HCM2kAvgQ:	5	85	1	3	8	3	15	4	9	7	7	36

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5613: LAWRENCE EXPWY/REED AVE



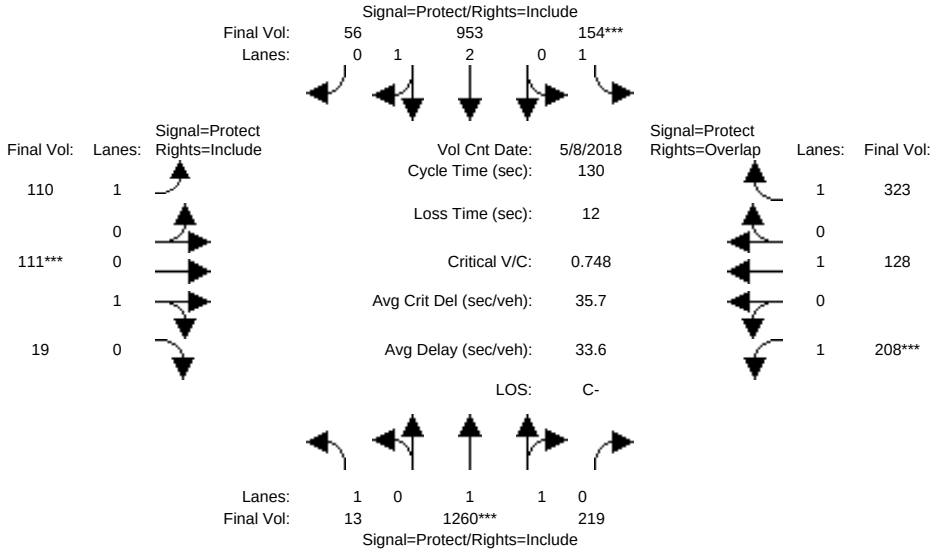
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	161	1245	202	366	3216	353	240	488	673	151	223	195
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	1245	202	366	3216	353	240	488	673	151	223	195
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	1245	202	366	3216	353	240	488	673	151	223	195
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	1008	202	366	2316	353	240	488	673	151	223	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	1008	202	366	2316	353	240	488	673	151	223	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	1008	202	366	2316	353	240	488	673	151	223	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.12	0.12	0.41	0.20	0.08	0.13	0.38	0.05	0.06	0.11
Crit Moves:	****				****				****	****		
Green Time:	17.0	90.0	104.0	27.0	100	118.7	18.7	47.0	64.0	14.0	42.3	69.3
Volume/Cap:	1.03	0.37	0.21	0.82	0.77	0.32	0.78	0.52	1.14	0.65	0.26	0.31
Uniform Del:	86.5	32.0	22.0	79.1	35.9	16.8	83.6	61.7	63.0	85.6	61.0	43.1
IncremntDel:	79.6	0.1	0.1	11.2	1.3	0.2	11.6	0.5	82.7	6.4	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.00	1.27	1.45	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	166.1	25.8	15.2	90.3	47.0	24.4	95.2	62.3	145.7	92.0	61.1	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	166.1	25.8	15.2	90.3	47.0	24.4	95.2	62.3	145.7	92.0	61.1	43.4
LOS by Move:	F	C	B	F	D	C	F	E	F	F	E	D
HCM2kAvgQ:	12	9	4	12	37	14	9	12	54	5	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



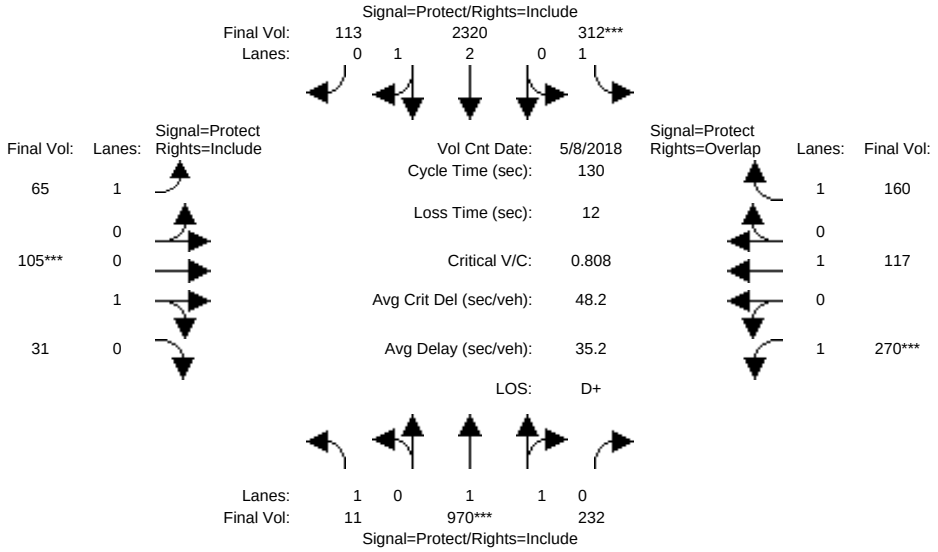
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	13	1260	219	154	953	56	110	111	19	208	128	323
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	1260	219	154	953	56	110	111	19	208	128	323
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	1260	219	154	953	56	110	111	19	208	128	323
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	13	1260	219	154	953	56	110	111	19	208	128	323
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	1260	219	154	953	56	110	111	19	208	128	323
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	1260	219	154	953	56	110	111	19	208	128	323
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.70	0.30	1.00	2.83	0.17	1.00	0.85	0.15	1.00	1.00	1.00
Final Sat.:	1750	3152	548	1750	5289	311	1750	1537	263	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.40	0.40	0.09	0.18	0.18	0.06	0.07	0.07	0.12	0.07	0.18
Crit Moves:		****		****				****		****		
Green Time:	19.5	69.5	69.5	15.3	65.3	65.3	13.1	12.6	12.6	20.7	20.1	35.4
Volume/Cap:	0.05	0.75	0.75	0.75	0.36	0.36	0.62	0.75	0.75	0.75	0.44	0.68
Uniform Del:	47.3	23.5	23.5	55.5	19.7	19.7	56.1	57.2	57.2	52.2	49.8	42.2
IncremntDel:	0.1	1.6	1.6	14.0	0.1	0.1	6.8	16.3	16.3	10.7	1.0	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.4	25.1	25.1	69.5	19.7	19.7	62.9	73.5	73.5	62.8	50.8	46.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	25.1	25.1	69.5	19.7	19.7	62.9	73.5	73.5	62.8	50.8	46.1
LOS by Move:	D	C	C	E	B-	B-	E	E	E	E	D	D
HCM2kAvgQ:	0	23	23	7	8	8	6	7	7	10	5	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



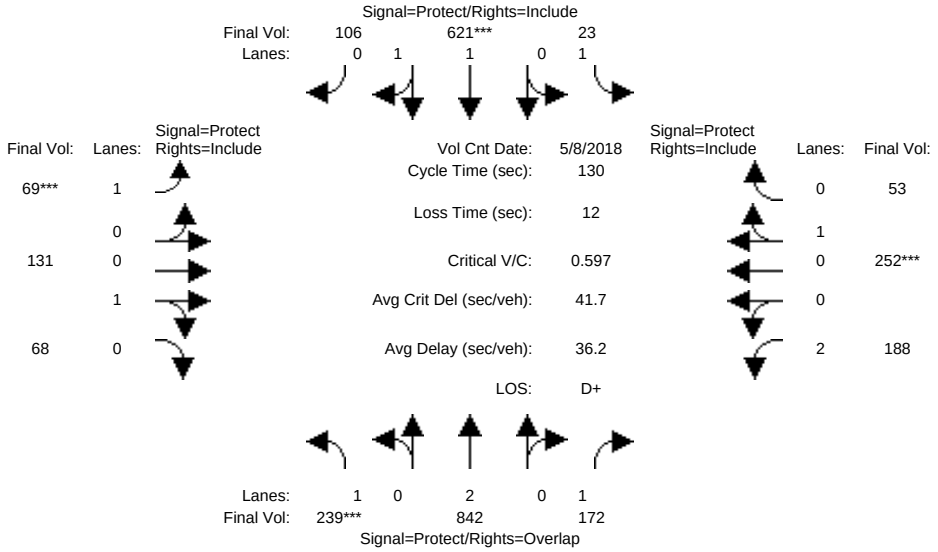
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	11	970	232	312	2320	113	65	105	31	270	117	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	970	232	312	2320	113	65	105	31	270	117	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	970	232	312	2320	113	65	105	31	270	117	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	970	232	312	2320	113	65	105	31	270	117	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	970	232	312	2320	113	65	105	31	270	117	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	970	232	312	2320	113	65	105	31	270	117	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.60	0.40	1.00	2.86	0.14	1.00	0.77	0.23	1.00	1.00	1.00
Final Sat.:	1750	2985	714	1750	5340	260	1750	1390	410	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.32	0.32	0.18	0.43	0.43	0.04	0.08	0.08	0.15	0.06	0.09
Crit Moves:		****		****				****		****		
Green Time:	8.9	52.3	52.3	28.7	72.1	72.1	15.2	12.2	12.2	24.8	21.8	50.5
Volume/Cap:	0.09	0.81	0.81	0.81	0.78	0.78	0.32	0.81	0.81	0.81	0.37	0.24
Uniform Del:	56.7	34.4	34.4	48.0	22.8	22.8	52.6	57.8	57.8	50.3	48.0	26.8
IncremntDel:	0.3	3.4	3.4	11.9	1.4	1.4	0.9	24.3	24.3	13.5	0.7	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.1	37.8	37.8	59.9	24.2	24.2	53.5	82.0	82.0	63.8	48.7	27.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.1	37.8	37.8	59.9	24.2	24.2	53.5	82.0	82.0	63.8	48.7	27.0
LOS by Move:	E+	D+	D+	E+	C	C	D-	F	F	E	D	C
HCM2kAvgQ:	0	22	22	13	25	25	3	8	8	13	4	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



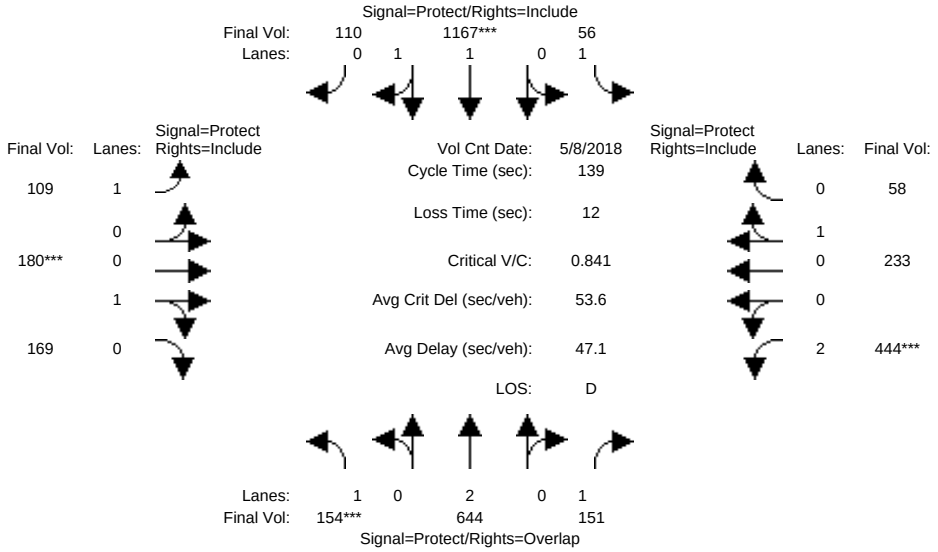
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	239	842	172	23	621	106	69	131	68	188	252	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	842	172	23	621	106	69	131	68	188	252	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	842	172	23	621	106	69	131	68	188	252	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	842	172	23	621	106	69	131	68	188	252	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	842	172	23	621	106	69	131	68	188	252	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	842	172	23	621	106	69	131	68	188	252	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.70	0.30	1.00	0.66	0.34	2.00	0.83	0.17
Final Sat.:	1750	3800	1750	1750	3160	539	1750	1185	615	3150	1487	313
Capacity Analysis Module:												
Vol/Sat:	0.14	0.22	0.10	0.01	0.20	0.20	0.04	0.11	0.11	0.06	0.17	0.17
Crit Moves:	****				****		****				****	
Green Time:	29.7	58.3	74.3	14.2	42.8	42.8	8.6	29.5	29.5	15.9	36.9	36.9
Volume/Cap:	0.60	0.49	0.17	0.12	0.60	0.60	0.60	0.49	0.49	0.49	0.60	0.60
Uniform Del:	44.8	25.4	13.2	52.3	36.4	36.4	59.0	43.6	43.6	53.2	40.1	40.1
IncremntDel:	2.5	0.2	0.1	0.3	0.8	0.8	8.3	0.9	0.9	1.0	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.2	25.6	13.3	52.6	37.2	37.2	67.3	44.6	44.6	54.2	42.1	42.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	25.6	13.3	52.6	37.2	37.2	67.3	44.6	44.6	54.2	42.1	42.1
LOS by Move:	D	C	B	D-	D+	D+	E	D	D	D-	D	D
HCM2kAvgQ:	9	11	3	1	13	13	4	8	8	4	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



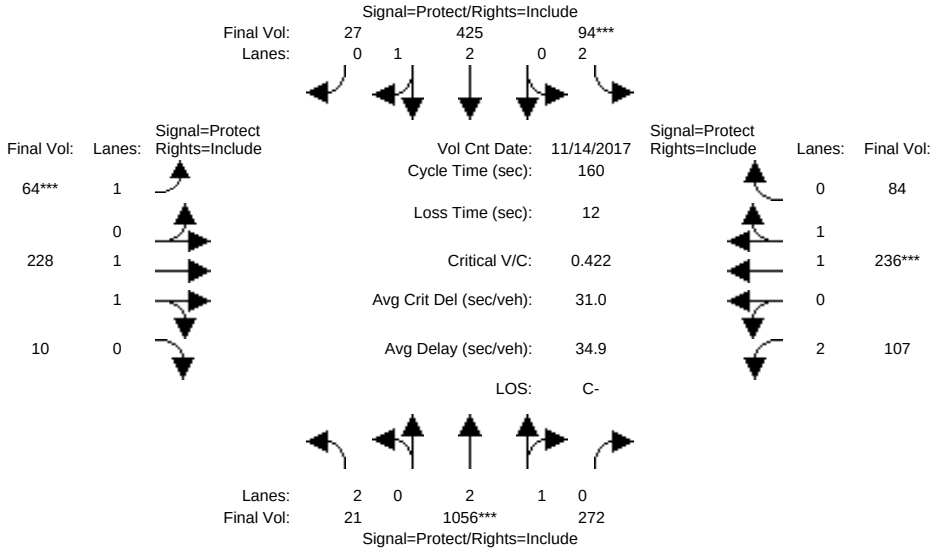
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	154	644	151	56	1167	110	109	180	169	444	233	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	644	151	56	1167	110	109	180	169	444	233	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	154	644	151	56	1167	110	109	180	169	444	233	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	644	151	56	1167	110	109	180	169	444	233	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	644	151	56	1167	110	109	180	169	444	233	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	644	151	56	1167	110	109	180	169	444	233	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.82	0.18	1.00	0.52	0.48	2.00	0.80	0.20
Final Sat.:	1750	3800	1750	1750	3381	319	1750	928	872	3150	1441	359
Capacity Analysis Module:												
Vol/Sat:	0.09	0.17	0.09	0.03	0.35	0.35	0.06	0.19	0.19	0.14	0.16	0.16
Crit Moves:	****				****			****		****		
Green Time:	14.6	55.2	78.5	16.4	57.1	57.1	15.4	32.1	32.1	23.3	40.0	40.0
Volume/Cap:	0.84	0.43	0.15	0.27	0.84	0.84	0.56	0.84	0.84	0.84	0.56	0.56
Uniform Del:	61.1	30.4	14.4	55.8	36.9	36.9	58.6	51.0	51.0	56.0	42.1	42.1
IncremntDel:	27.8	0.2	0.1	0.7	4.4	4.4	3.7	14.2	14.2	11.5	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.9	30.6	14.5	56.6	41.3	41.3	62.3	65.2	65.2	67.6	43.5	43.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.9	30.6	14.5	56.6	41.3	41.3	62.3	65.2	65.2	67.6	43.5	43.5
LOS by Move:	F	C	B	E+	D	D	E	E	E	E	D	D
HCM2kAvgQ:	8	10	3	3	27	27	5	17	17	12	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



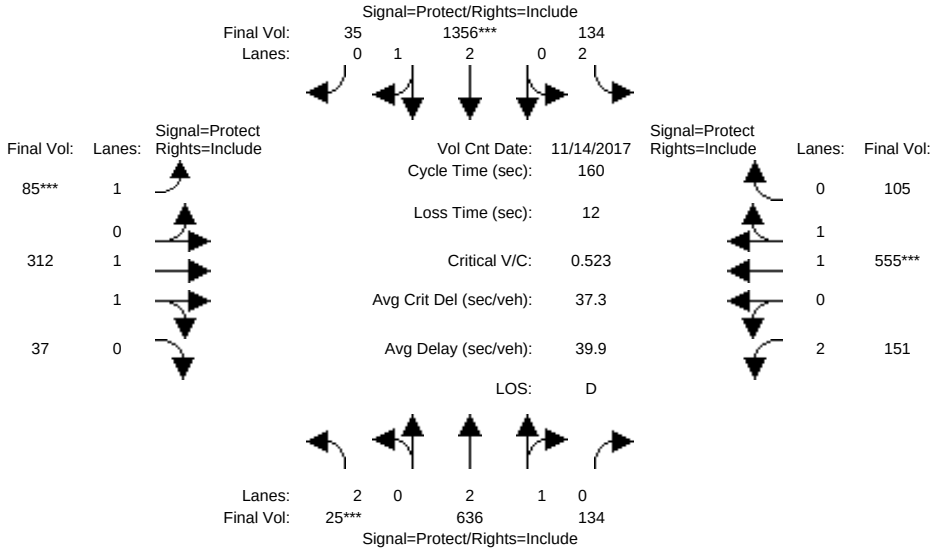
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	21	1056	272	94	425	27	64	228	10	107	236	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	1056	272	94	425	27	64	228	10	107	236	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	1056	272	94	425	27	64	228	10	107	236	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	1056	272	94	425	27	64	228	10	107	236	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1056	272	94	425	27	64	228	10	107	236	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1056	272	94	425	27	64	228	10	107	236	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.97	0.95	0.83	0.98	0.95
Lanes:	2.00	2.36	0.64	2.00	2.81	0.19	1.00	1.91	0.09	2.00	1.46	0.54
Final Sat.:	3150	4452	1147	3150	5265	334	1750	3544	155	3150	2728	971
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.03	0.08	0.08	0.04	0.06	0.06	0.03	0.09	0.09
Crit Moves:		****		****			****				****	
Green Time:	35.6	90.0	90.0	11.3	65.7	65.7	13.9	27.8	27.8	18.9	32.8	32.8
Volume/Cap:	0.03	0.42	0.42	0.42	0.20	0.20	0.42	0.37	0.37	0.29	0.42	0.42
Uniform Del:	48.7	20.1	20.1	71.2	30.2	30.2	69.3	58.4	58.4	64.4	55.3	55.3
IncremntDel:	0.0	0.1	0.1	1.3	0.0	0.0	1.9	0.4	0.4	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.7	20.2	20.2	72.5	30.3	30.3	71.2	58.7	58.7	64.8	55.7	55.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	20.2	20.2	72.5	30.3	30.3	71.2	58.7	58.7	64.8	55.7	55.7
LOS by Move:	D	C+	C+	E	C	C	E	E+	E+	E	E+	E+
HCM2kAvgQ:	0	12	12	3	5	5	3	5	5	3	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



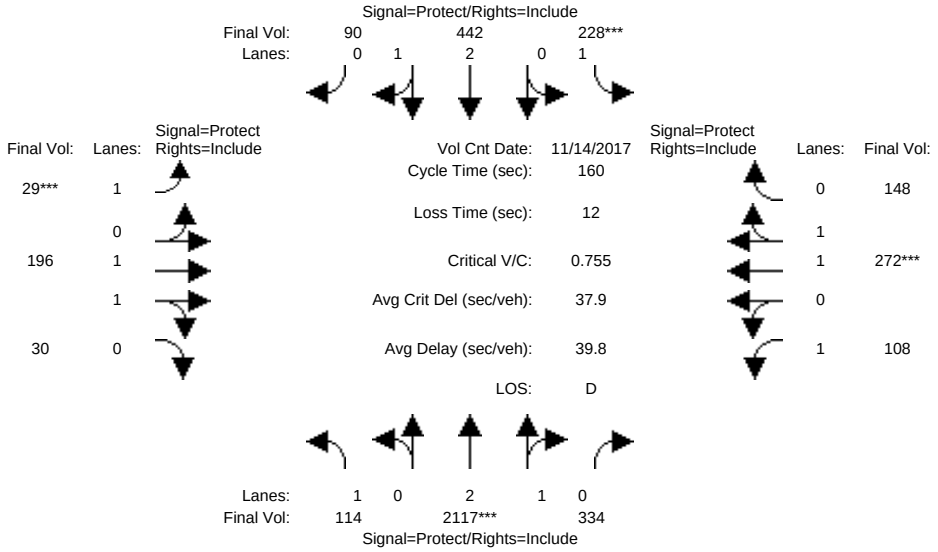
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	25	636	134	134	1356	35	85	312	37	151	555	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	636	134	134	1356	35	85	312	37	151	555	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	636	134	134	1356	35	85	312	37	151	555	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	636	134	134	1356	35	85	312	37	151	555	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	636	134	134	1356	35	85	312	37	151	555	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	636	134	134	1356	35	85	312	37	151	555	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.46	0.54	2.00	2.92	0.08	1.00	1.78	0.22	2.00	1.67	0.33
Final Sat.:	3150	4624	974	3150	5459	141	1750	3307	392	3150	3111	589
Capacity Analysis Module:												
Vol/Sat:	0.01	0.14	0.14	0.04	0.25	0.25	0.05	0.09	0.09	0.05	0.18	0.18
Crit Moves:	****				****		****				****	
Green Time:	7.0	61.2	61.2	19.5	73.7	73.7	14.4	44.6	44.6	22.7	52.9	52.9
Volume/Cap:	0.18	0.36	0.36	0.35	0.54	0.54	0.54	0.34	0.34	0.34	0.54	0.54
Uniform Del:	73.7	35.4	35.4	64.5	31.0	31.0	69.6	45.9	45.9	61.9	43.6	43.6
IncremntDel:	0.6	0.1	0.1	0.6	0.2	0.2	3.7	0.2	0.2	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.4	35.5	35.5	65.0	31.2	31.2	73.3	46.1	46.1	62.3	44.1	44.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	35.5	35.5	65.0	31.2	31.2	73.3	46.1	46.1	62.3	44.1	44.1
LOS by Move:	E	D+	D+	E	C	C	E	D	D	E	D	D
HCM2kAvgQ:	1	9	9	3	16	16	4	6	6	4	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



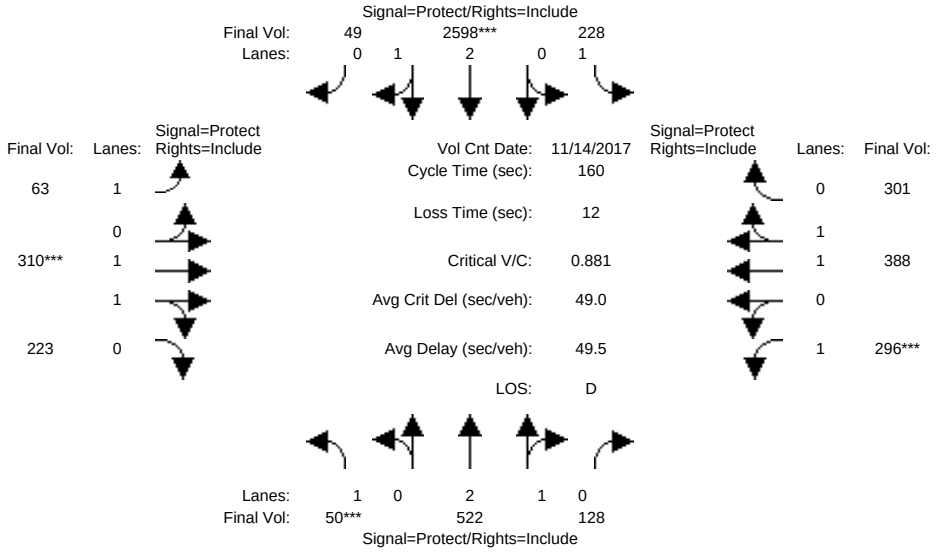
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	114	2117	334	228	442	90	29	196	30	108	272	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	2117	334	228	442	90	29	196	30	108	272	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	2117	334	228	442	90	29	196	30	108	272	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	2117	334	228	442	90	29	196	30	108	272	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	2117	334	228	442	90	29	196	30	108	272	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	2117	334	228	442	90	29	196	30	108	272	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	2.58	0.42	1.00	2.47	0.53	1.00	1.73	0.27	1.00	1.28	0.72
Final Sat.:	1750	4836	763	1750	4651	947	1750	3208	491	1750	2395	1303
Capacity Analysis Module:												
Vol/Sat:	0.07	0.44	0.44	0.13	0.10	0.10	0.02	0.06	0.06	0.06	0.11	0.11
Crit Moves:		****		****			****				****	
Green Time:	47.8	90.6	90.6	27.0	69.7	69.7	7.0	15.3	15.3	15.1	23.5	23.5
Volume/Cap:	0.22	0.77	0.77	0.77	0.22	0.22	0.38	0.64	0.64	0.65	0.77	0.77
Uniform Del:	42.1	26.8	26.8	63.6	28.1	28.1	74.4	69.6	69.6	69.9	65.7	65.7
IncremntDel:	0.2	1.2	1.2	12.0	0.0	0.0	3.1	3.8	3.8	8.9	6.8	6.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.3	28.0	28.0	75.6	28.2	28.2	77.5	73.5	73.5	78.8	72.5	72.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	28.0	28.0	75.6	28.2	28.2	77.5	73.5	73.5	78.8	72.5	72.5
LOS by Move:	D	C	C	E-	C	C	E-	E	E	E-	E	E
HCM2kAvgQ:	4	30	30	12	5	5	1	6	6	6	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



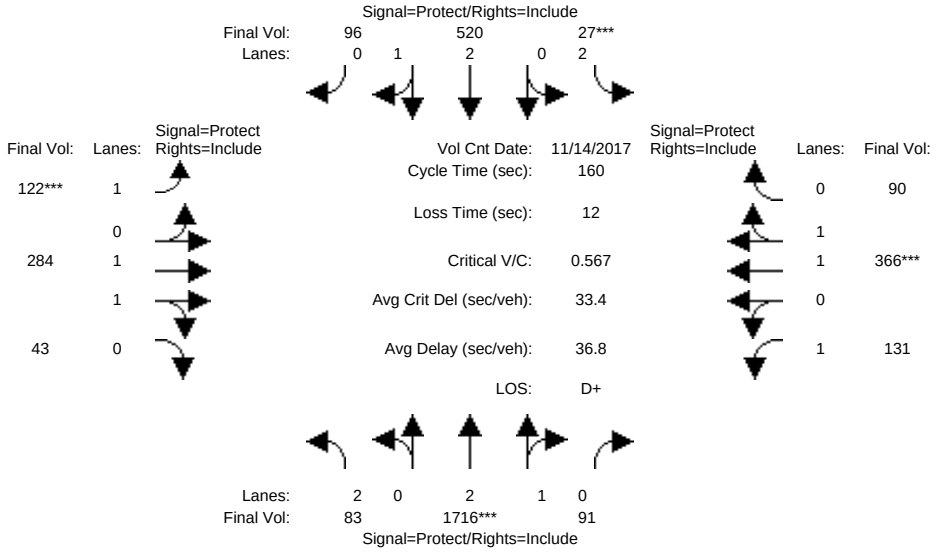
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	50	522	128	228	2598	49	63	310	223	296	388	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	522	128	228	2598	49	63	310	223	296	388	301
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	522	128	228	2598	49	63	310	223	296	388	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	522	128	228	2598	49	63	310	223	296	388	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	522	128	228	2598	49	63	310	223	296	388	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	522	128	228	2598	49	63	310	223	296	388	301
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.39	0.61	1.00	2.94	0.06	1.00	1.14	0.86	1.00	1.10	0.90
Final Sat.:	1750	4496	1102	1750	5496	104	1750	2151	1547	1750	2082	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.13	0.47	0.47	0.04	0.14	0.14	0.17	0.19	0.19
Crit Moves:	****				****			****		****		
Green Time:	7.0	43.3	43.3	48.5	84.8	84.8	10.7	25.9	25.9	30.3	45.5	45.5
Volume/Cap:	0.65	0.43	0.43	0.43	0.89	0.89	0.54	0.89	0.89	0.89	0.66	0.66
Uniform Del:	75.3	48.2	48.2	44.6	33.5	33.5	72.3	65.7	65.7	63.2	50.3	50.3
IncremntDel:	18.4	0.2	0.2	0.6	3.8	3.8	5.0	15.6	15.6	24.6	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	48.4	48.4	45.2	37.3	37.3	77.2	81.3	81.3	87.8	51.8	51.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	48.4	48.4	45.2	37.3	37.3	77.2	81.3	81.3	87.8	51.8	51.8
LOS by Move:	F	D	D	D	D+	D+	E-	F	F	F	D-	D-
HCM2kAvgQ:	3	9	9	9	36	36	3	14	14	17	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



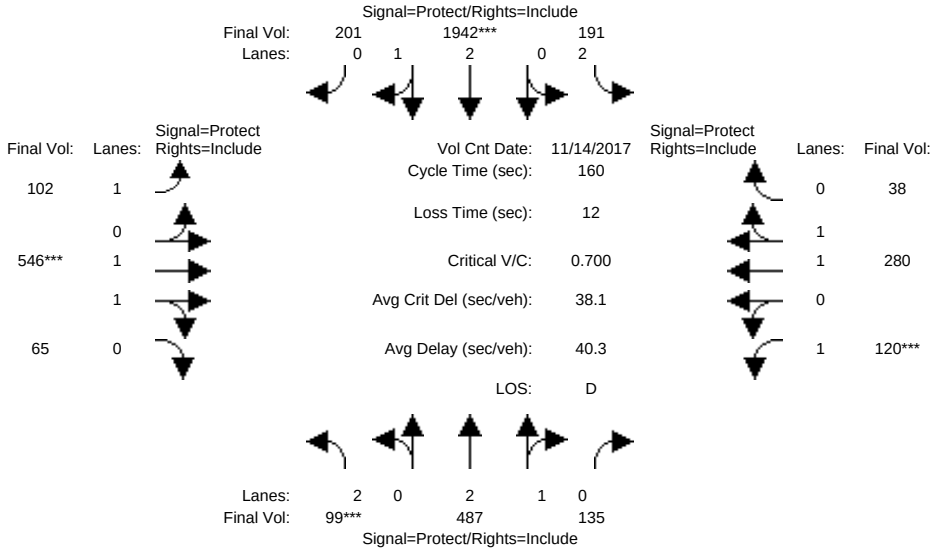
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	1716	91	27	520	96	122	284	43	131	366	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1716	91	27	520	96	122	284	43	131	366	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1716	91	27	520	96	122	284	43	131	366	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1716	91	27	520	96	122	284	43	131	366	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1716	91	27	520	96	122	284	43	131	366	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1716	91	27	520	96	122	284	43	131	366	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.84	0.16	2.00	2.52	0.48	1.00	1.73	0.27	1.00	1.59	0.41
Final Sat.:	3150	5318	282	3150	4726	873	1750	3213	486	1750	2969	730
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.01	0.11	0.11	0.07	0.09	0.09	0.07	0.12	0.12
Crit Moves:		****		****			****				****	
Green Time:	27.1	88.2	88.2	7.0	68.1	68.1	19.1	28.6	28.6	24.2	33.7	33.7
Volume/Cap:	0.16	0.59	0.59	0.20	0.26	0.26	0.59	0.50	0.50	0.50	0.59	0.59
Uniform Del:	56.7	23.8	23.8	73.8	29.6	29.6	66.7	59.2	59.2	62.3	56.9	56.9
IncremntDel:	0.1	0.3	0.3	0.7	0.1	0.1	4.2	0.6	0.6	1.5	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.8	24.1	24.1	74.5	29.7	29.7	71.0	59.8	59.8	63.8	58.0	58.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.8	24.1	24.1	74.5	29.7	29.7	71.0	59.8	59.8	63.8	58.0	58.0
LOS by Move:	E+	C	C	E	C	C	E	E+	E+	E	E+	E+
HCM2kAvgQ:	2	19	19	1	6	6	6	7	7	6	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



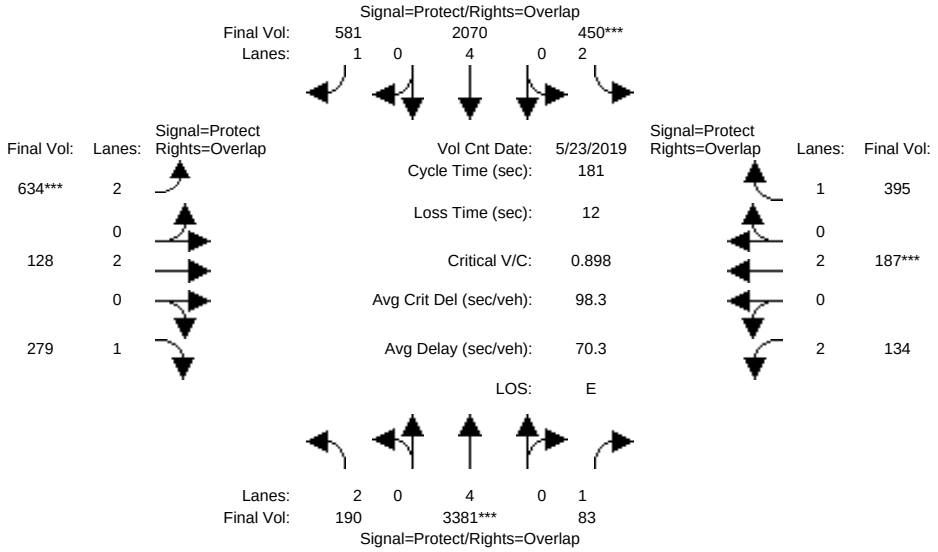
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	487	135	191	1942	201	102	546	65	120	280	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	487	135	191	1942	201	102	546	65	120	280	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	487	135	191	1942	201	102	546	65	120	280	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	487	135	191	1942	201	102	546	65	120	280	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	487	135	191	1942	201	102	546	65	120	280	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	487	135	191	1942	201	102	546	65	120	280	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.33	0.67	2.00	2.71	0.29	1.00	1.78	0.22	1.00	1.75	0.25
Final Sat.:	3150	4383	1215	3150	5074	525	1750	3306	394	1750	3258	442
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.11	0.06	0.38	0.38	0.06	0.17	0.17	0.07	0.09	0.09
Crit Moves:	****				****			****			****	
Green Time:	7.2	61.2	61.2	33.4	87.4	87.4	21.6	37.7	37.7	15.7	31.8	31.8
Volume/Cap:	0.70	0.29	0.29	0.29	0.70	0.70	0.43	0.70	0.70	0.70	0.43	0.43
Uniform Del:	75.3	34.3	34.3	53.3	26.7	26.7	63.6	56.0	56.0	69.9	56.2	56.2
IncremntDel:	14.5	0.1	0.1	0.2	0.7	0.7	1.3	2.6	2.6	12.2	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	89.9	34.4	34.4	53.6	27.4	27.4	64.9	58.5	58.5	82.1	56.6	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.9	34.4	34.4	53.6	27.4	27.4	64.9	58.5	58.5	82.1	56.6	56.6
LOS by Move:	F	C-	C-	D-	C	C	E	E+	E+	F	E+	E+
HCM2kAvgQ:	3	7	7	4	25	25	5	14	14	6	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



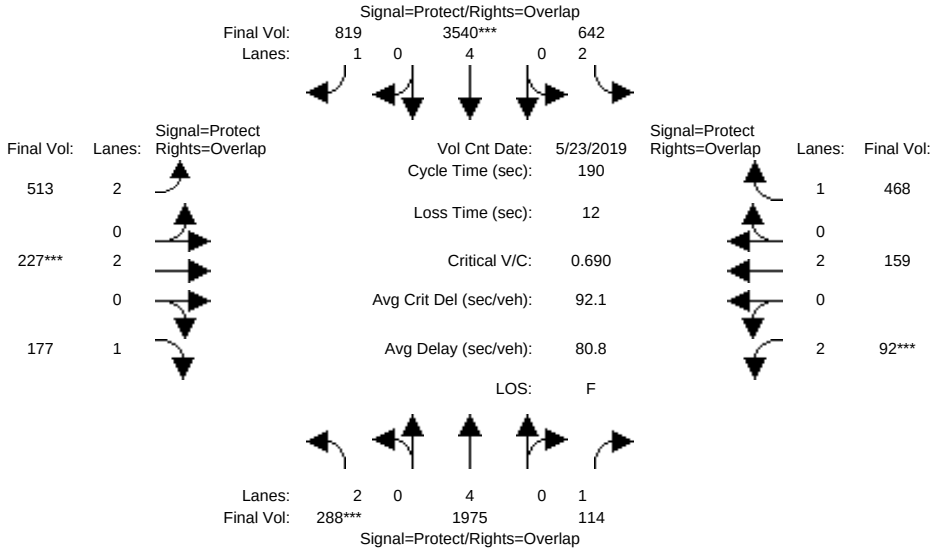
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	190	3381	83	450	2070	581	634	128	279	134	187	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	3381	83	450	2070	581	634	128	279	134	187	395
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	3381	83	450	2070	581	634	128	279	134	187	395
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	3381	83	450	2070	581	634	128	279	134	187	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	3381	83	450	2070	581	634	128	279	134	187	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	3381	83	450	2070	581	634	128	279	134	187	395
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.44	0.05	0.14	0.27	0.33	0.20	0.03	0.16	0.04	0.05	0.23
Crit Moves:		****		****			****				****	
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	0.63	0.93	0.09	1.27	0.55	0.53	1.53	0.16	0.51	0.73	0.34	0.88
Uniform Del:	78.9	44.1	20.3	80.3	31.5	18.7	78.6	57.4	50.9	83.9	69.9	64.8
IncremntDel:	4.4	4.8	0.0	143.3	0.2	0.5	250.7	0.1	0.8	14.2	0.4	18.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.3	39.9	14.3	223.7	24.5	9.9	329.3	57.5	51.8	98.1	70.3	83.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.3	39.9	14.3	223.7	24.5	9.9	329.3	57.5	51.8	98.1	70.3	83.3
LOS by Move:	F	D	B	F	C	A	F	E+	D-	F	E	F
HCM2kAvgQ:	6	39	1	24	15	10	38	3	13	6	5	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



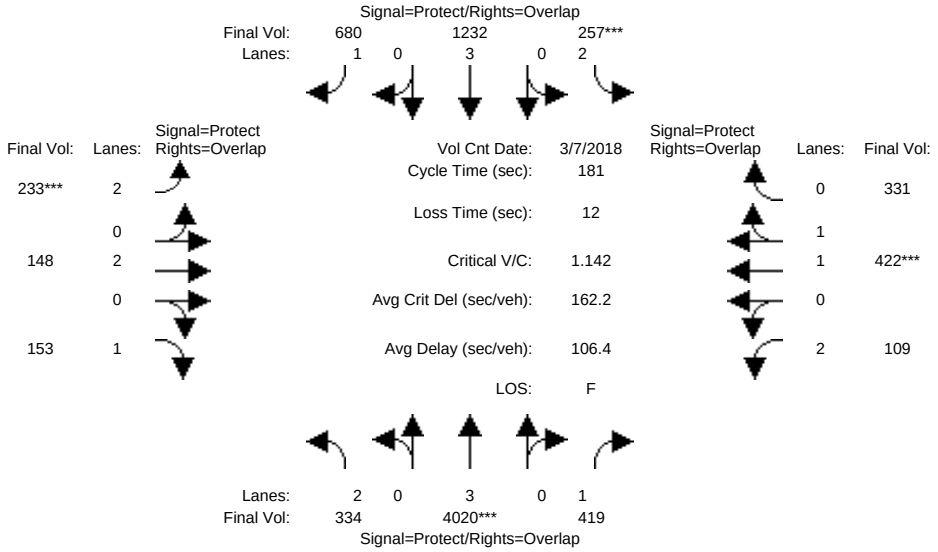
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	288	1975	114	642	3540	819	513	227	177	92	159	468
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	288	1975	114	642	3540	819	513	227	177	92	159	468
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	288	1975	114	642	3540	819	513	227	177	92	159	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	288	1975	114	642	3540	819	513	227	177	92	159	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	288	1975	114	642	3540	819	513	227	177	92	159	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	288	1975	114	642	3540	819	513	227	177	92	159	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.26	0.07	0.20	0.47	0.47	0.16	0.06	0.10	0.03	0.04	0.27
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	0.86	0.70	0.15	1.23	1.07	0.76	0.90	0.21	0.26	0.56	0.27	0.84
Uniform Del:	83.6	50.3	33.4	79.2	53.8	26.5	76.1	52.1	39.7	87.8	71.2	60.2
IncremntDel:	20.2	0.8	0.1	117.6	39.9	3.2	17.1	0.1	0.2	4.1	0.3	10.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	103.8	47.2	29.0	196.8	93.7	29.7	93.2	52.2	39.9	91.9	71.5	71.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	103.8	47.2	29.0	196.8	93.7	29.7	93.2	52.2	39.9	91.9	71.5	71.0
LOS by Move:	F	D	C	F	F	C	F	D-	D	F	E	E
HCM2kAvgQ:	11	22	3	33	62	37	20	5	7	4	4	29

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



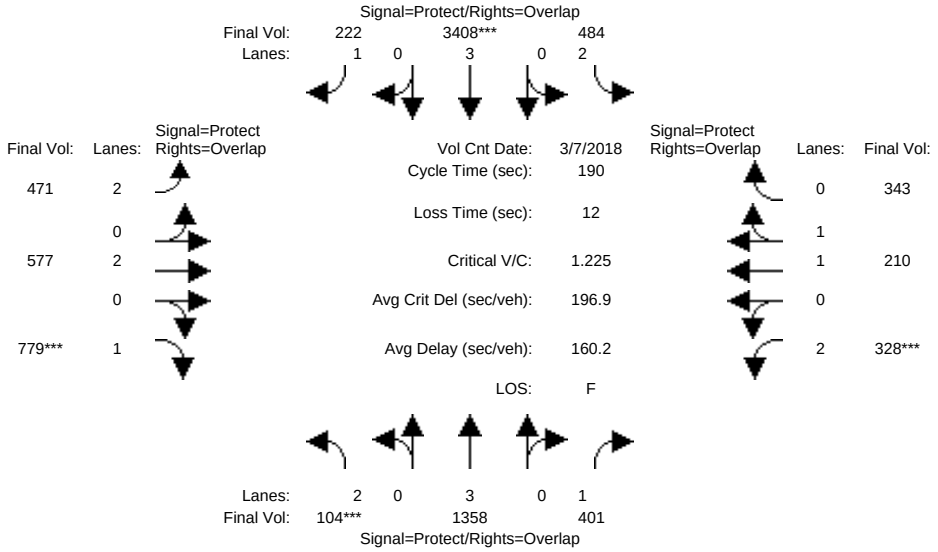
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	334	4621	419	257	1416	680	233	148	153	109	422	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	4621	419	257	1416	680	233	148	153	109	422	331
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	334	4621	419	257	1416	680	233	148	153	109	422	331
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	334	4020	419	257	1232	680	233	148	153	109	422	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	4020	419	257	1232	680	233	148	153	109	422	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	334	4020	419	257	1232	680	233	148	153	109	422	331
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.94
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.10	0.90
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2058	1614
Capacity Analysis Module:												
Vol/Sat:	0.11	0.71	0.24	0.08	0.22	0.39	0.07	0.04	0.09	0.03	0.21	0.21
Crit Moves:		****		****			****				****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	0.76	1.26	0.39	0.86	0.42	0.66	1.05	0.24	0.29	0.58	1.38	0.84
Uniform Del:	75.0	40.0	17.4	80.8	27.2	25.5	84.1	66.6	48.8	82.9	77.1	65.2
IncremntDel:	7.7	121	0.2	22.0	0.1	1.7	73.0	0.2	0.3	4.5	182	7.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.7	148	9.5	102.8	20.4	17.2	157.1	66.8	49.1	87.4	259	72.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	148	9.5	102.8	20.4	17.2	157.1	66.8	49.1	87.4	259	72.6
LOS by Move:	F	F	A	F	C+	B	F	E	D	F	F	E
HCM2kAvgQ:	10	103	6	11	10	19	10	3	7	4	34	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



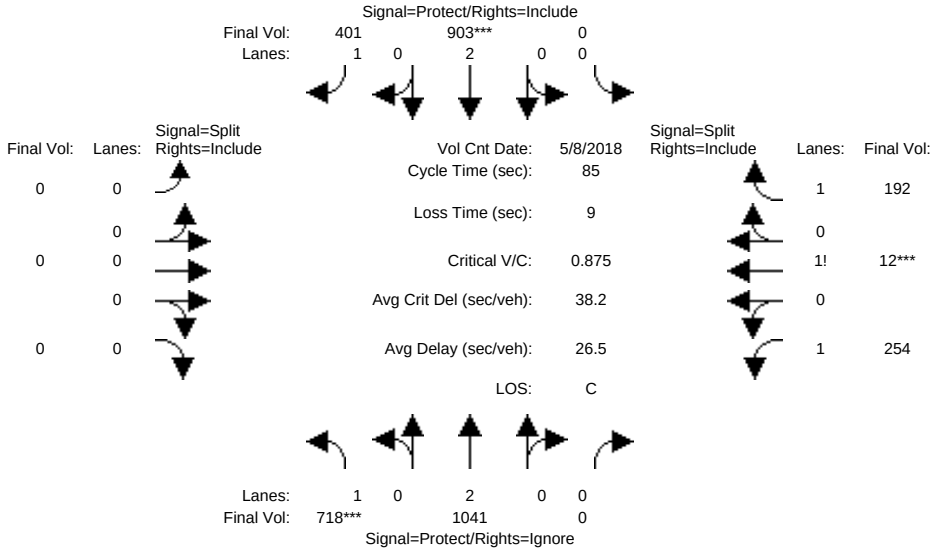
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	104	1698	401	484	4314	222	471	577	779	328	210	343
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	1698	401	484	4314	222	471	577	779	328	210	343
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	1698	401	484	4314	222	471	577	779	328	210	343
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	1358	401	484	3408	222	471	577	779	328	210	343
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1358	401	484	3408	222	471	577	779	328	210	343
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	1358	401	484	3408	222	471	577	779	328	210	343
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.24	0.23	0.15	0.60	0.13	0.15	0.15	0.45	0.10	0.11	0.20
Crit Moves:	****				****				****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	0.71	0.53	0.41	1.09	1.10	0.20	1.80	0.87	2.02	0.91	0.54	0.57
Uniform Del:	89.3	38.2	23.8	81.5	43.5	15.2	87.1	76.5	74.1	83.2	67.6	50.5
IncremntDel:	14.4	0.2	0.3	67.5	51.5	0.1	373.6	12.4	467.5	26.6	0.6	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	106.6	58.9	44.3	158.0	129	32.3	460.7	88.9	541.6	109.8	68.1	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.6	58.9	44.3	158.0	129	32.3	460.7	88.9	541.6	109.8	68.1	51.3
LOS by Move:	F	E+	D	F	F	C-	F	F	F	F	E	D-
HCM2kAvgQ:	4	23	21	23	80	11	31	17	99	12	11	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



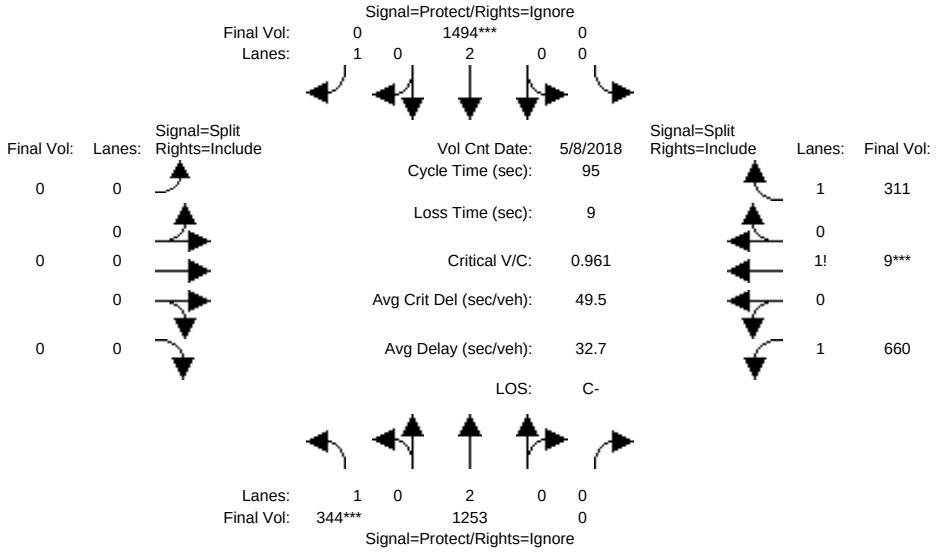
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	718	1041	0	0	903	566	0	0	0	254	12	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	718	1041	0	0	903	566	0	0	0	254	12	192
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	718	1041	0	0	903	566	0	0	0	254	12	192
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	718	1041	0	0	903	566	0	0	0	254	12	192
Reduct Vol:	0	0	0	0	0	165	0	0	0	0	0	0
Reduced Vol:	718	1041	0	0	903	401	0	0	0	254	12	192
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	718	1041	0	0	903	401	0	0	0	254	12	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.54	0.05	1.41
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2696	89	2465
Capacity Analysis Module:												
Vol/Sat:	0.41	0.27	0.00	0.00	0.24	0.23	0.00	0.00	0.00	0.09	0.13	0.08
Crit Moves:	****				****						****	
Green Time:	39.9	63.0	0.0	0.0	23.1	23.1	0.0	0.0	0.0	13.0	13.0	13.0
Volume/Cap:	0.87	0.37	0.00	0.00	0.87	0.84	0.00	0.00	0.00	0.61	0.87	0.51
Uniform Del:	20.3	3.9	0.0	0.0	29.6	29.2	0.0	0.0	0.0	33.6	35.2	33.0
IncremntDel:	10.4	0.1	0.0	0.0	8.5	12.9	0.0	0.0	0.0	1.5	15.1	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	30.7	4.0	0.0	0.0	38.0	42.2	0.0	0.0	0.0	35.2	50.3	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.7	4.0	0.0	0.0	38.0	42.2	0.0	0.0	0.0	35.2	50.3	33.5
LOS by Move:	C	A	A	A	D+	D	A	A	A	D+	D	C-
HCM2kAvgQ:	22	5	0	0	13	12	0	0	0	5	10	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



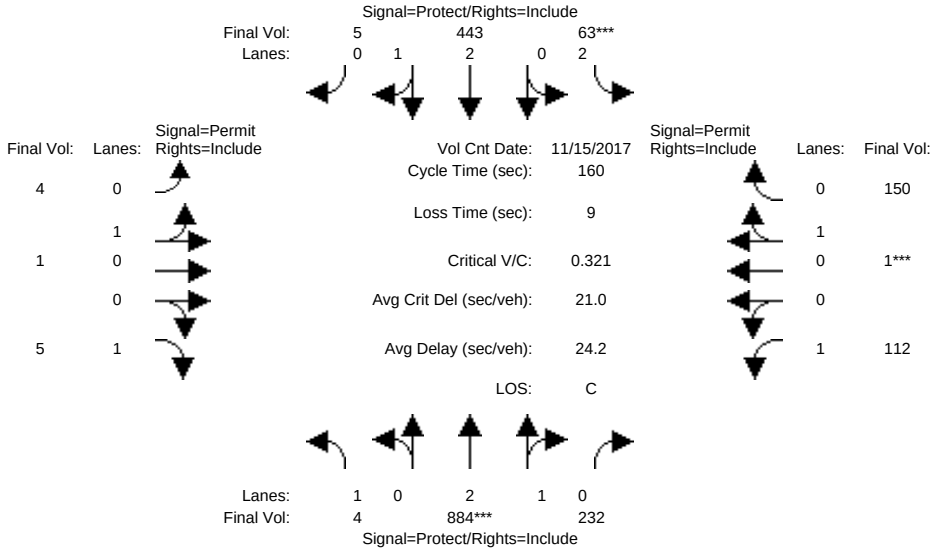
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	344	1253	0	0	1494	175	0	0	0	660	9	311
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	344	1253	0	0	1494	175	0	0	0	660	9	311
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	344	1253	0	0	1494	175	0	0	0	660	9	311
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	344	1253	0	0	1494	0	0	0	0	660	9	311
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	344	1253	0	0	1494	0	0	0	0	660	9	311
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	344	1253	0	0	1494	0	0	0	0	660	9	311
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.66	0.02	1.32
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2954	32	2306
Capacity Analysis Module:												
Vol/Sat:	0.20	0.33	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.22	0.28	0.13
Crit Moves:	****				****						****	
Green Time:	19.4	58.3	0.0	0.0	38.9	0.0	0.0	0.0	0.0	27.7	27.7	27.7
Volume/Cap:	0.96	0.54	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.77	0.96	0.46
Uniform Del:	37.4	10.6	0.0	0.0	27.3	0.0	0.0	0.0	0.0	30.7	33.1	27.6
IncremntDel:	37.1	0.2	0.0	0.0	14.5	0.0	0.0	0.0	0.0	2.9	19.3	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	74.5	10.8	0.0	0.0	41.8	0.0	0.0	0.0	0.0	33.6	52.4	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.5	10.8	0.0	0.0	41.8	0.0	0.0	0.0	0.0	33.6	52.4	27.7
LOS by Move:	E	B+	A	A	D	A	A	A	A	C-	D-	C
HCM2kAvgQ:	16	11	0	0	25	0	0	0	0	13	21	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



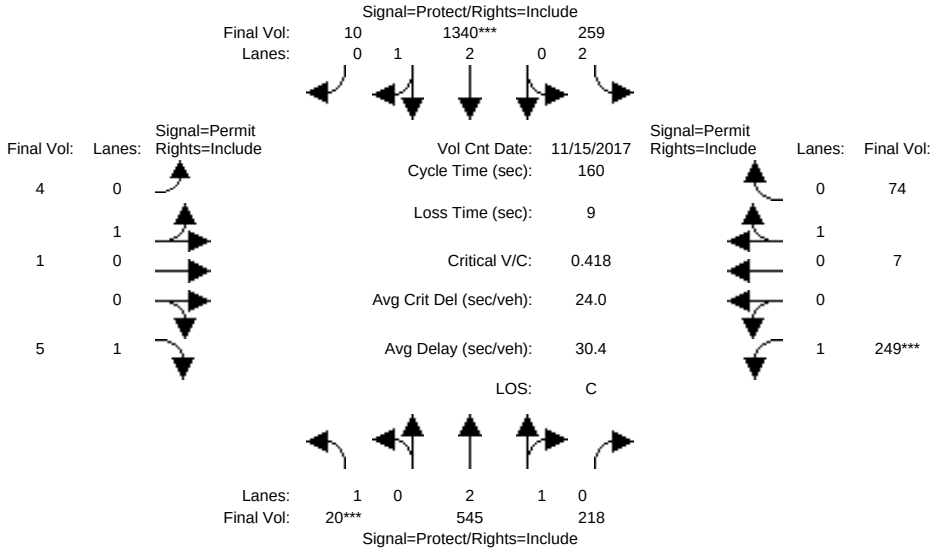
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	884	232	63	443	5	4	1	5	112	1	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	884	232	63	443	5	4	1	5	112	1	150
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	884	232	63	443	5	4	1	5	112	1	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	884	232	63	443	5	4	1	5	112	1	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	884	232	63	443	5	4	1	5	112	1	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	884	232	63	443	5	4	1	5	112	1	150
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.35	0.65	2.00	2.97	0.03	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	4434	1164	3150	5537	62	1440	360	1750	1750	12	1788
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.02	0.08	0.08	0.00	0.00	0.00	0.06	0.08	0.08
Crit Moves:		****		****							****	
Green Time:	38.6	99.3	99.3	10.0	70.6	70.6	41.8	41.8	41.8	41.8	41.8	41.8
Volume/Cap:	0.01	0.32	0.32	0.32	0.18	0.18	0.01	0.01	0.01	0.25	0.32	0.32
Uniform Del:	46.1	14.4	14.4	71.8	27.1	27.1	43.8	43.8	43.8	46.7	47.7	47.7
IncremntDel:	0.0	0.1	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.2	14.4	14.4	72.7	27.2	27.2	43.8	43.8	43.8	46.9	48.1	48.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	14.4	14.4	72.7	27.2	27.2	43.8	43.8	43.8	46.9	48.1	48.1
LOS by Move:	D	B	B	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	0	8	8	2	4	4	0	0	0	5	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



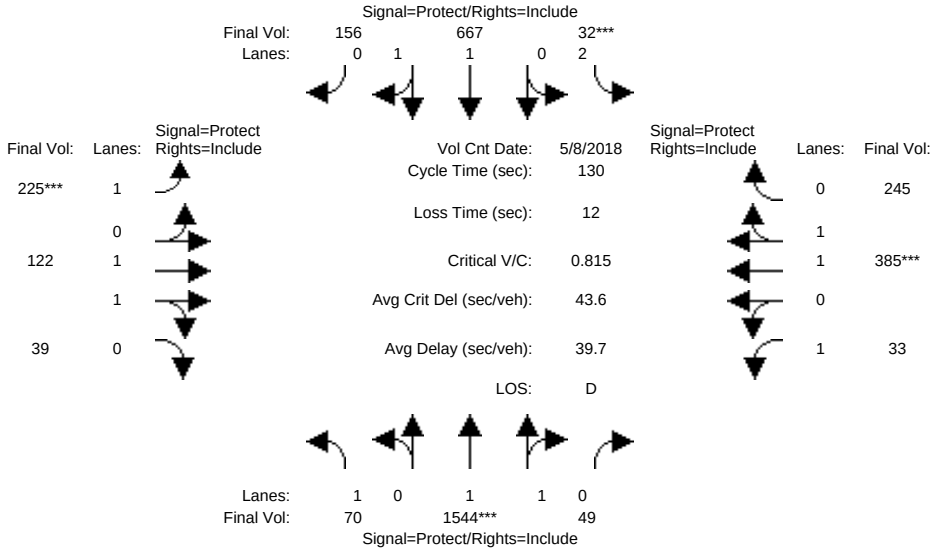
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	20	545	218	259	1340	10	4	1	5	249	7	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	545	218	259	1340	10	4	1	5	249	7	74
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	545	218	259	1340	10	4	1	5	249	7	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	545	218	259	1340	10	4	1	5	249	7	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	545	218	259	1340	10	4	1	5	249	7	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	545	218	259	1340	10	4	1	5	249	7	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.11	0.89	2.00	2.98	0.02	0.80	0.20	1.00	1.00	0.09	0.91
Final Sat.:	1750	3998	1599	3150	5558	41	1440	360	1750	1750	156	1644
Capacity Analysis Module:												
Vol/Sat:	0.01	0.14	0.14	0.08	0.24	0.24	0.00	0.00	0.00	0.14	0.05	0.05
Crit Moves:	****				****					****		
Green Time:	7.0	60.9	60.9	36.7	90.6	90.6	53.4	53.4	53.4	53.4	53.4	53.4
Volume/Cap:	0.26	0.36	0.36	0.36	0.43	0.43	0.01	0.01	0.01	0.43	0.13	0.13
Uniform Del:	74.0	35.6	35.6	51.8	19.9	19.9	35.6	35.6	35.6	41.4	37.2	37.2
IncremntDel:	1.8	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.8	35.7	35.7	52.1	20.0	20.0	35.6	35.6	35.6	41.9	37.3	37.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.8	35.7	35.7	52.1	20.0	20.0	35.6	35.6	35.6	41.9	37.3	37.3
LOS by Move:	E-	D+	D+	D-	B-	B-	D+	D+	D+	D	D+	D+
HCM2kAvgQ:	1	9	9	6	12	12	0	0	0	10	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



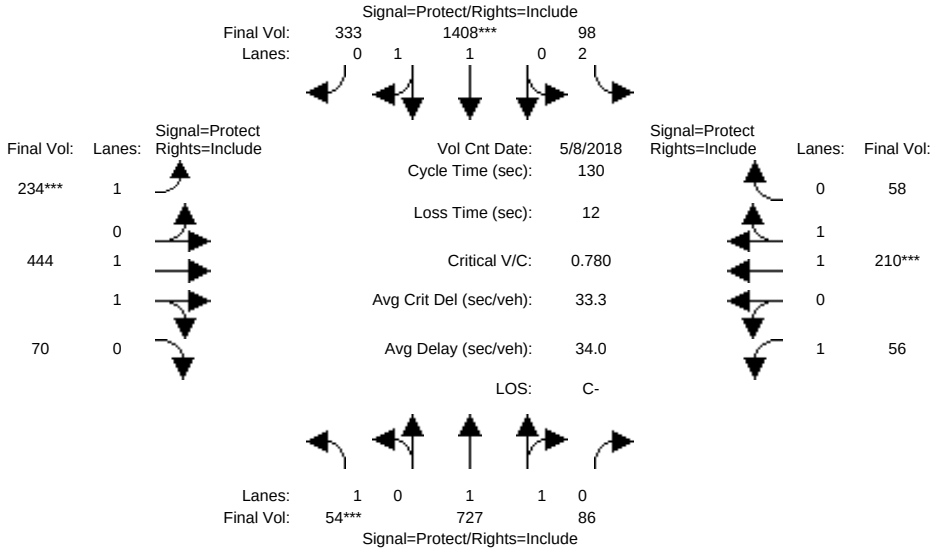
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	70	1544	49	32	667	156	225	122	39	33	385	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	1544	49	32	667	156	225	122	39	33	385	245
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	1544	49	32	667	156	225	122	39	33	385	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	1544	49	32	667	156	225	122	39	33	385	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1544	49	32	667	156	225	122	39	33	385	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	1544	49	32	667	156	225	122	39	33	385	245
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.94	0.06	2.00	1.61	0.39	1.00	1.50	0.50	1.00	1.20	0.80
Final Sat.:	1750	3586	114	3150	2998	701	1750	2803	896	1750	2260	1438
Capacity Analysis Module:												
Vol/Sat:	0.04	0.43	0.43	0.01	0.22	0.22	0.13	0.04	0.04	0.02	0.17	0.17
Crit Moves:		****		****			****				****	
Green Time:	14.1	65.5	65.5	7.0	58.4	58.4	19.6	26.8	26.8	18.7	25.9	25.9
Volume/Cap:	0.37	0.85	0.85	0.19	0.50	0.50	0.85	0.21	0.21	0.13	0.85	0.85
Uniform Del:	53.8	28.1	28.1	58.8	25.4	25.4	53.8	42.9	42.9	48.5	50.2	50.2
IncremntDel:	1.2	4.1	4.1	0.5	0.2	0.2	22.8	0.1	0.1	0.2	9.6	9.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.0	32.2	32.2	59.3	25.6	25.6	76.6	43.0	43.0	48.8	59.8	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.0	32.2	32.2	59.3	25.6	25.6	76.6	43.0	43.0	48.8	59.8	59.8
LOS by Move:	D-	C-	C-	E+	C	C	E-	D	D	D	E+	E+
HCM2kAvgQ:	3	30	30	1	12	12	10	3	3	1	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



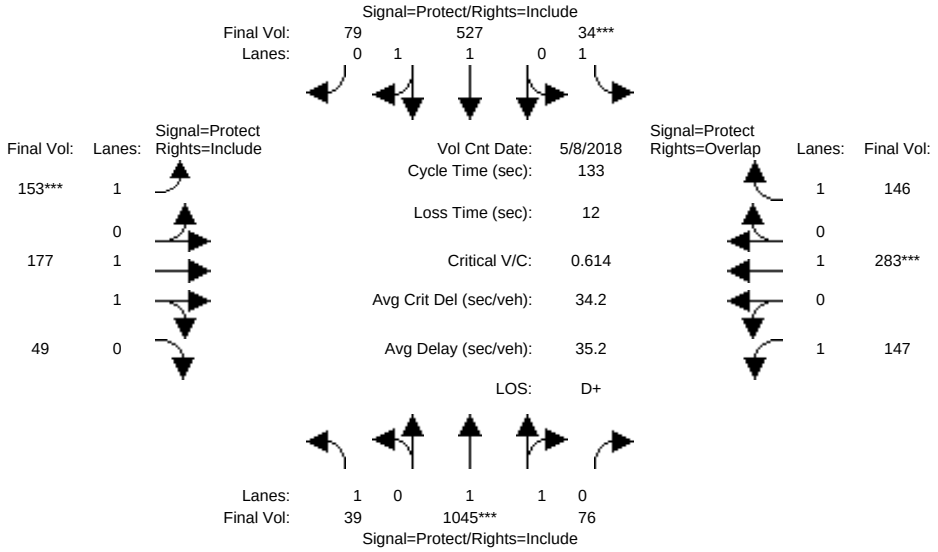
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	54	727	86	98	1408	333	234	444	70	56	210	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	727	86	98	1408	333	234	444	70	56	210	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	727	86	98	1408	333	234	444	70	56	210	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	727	86	98	1408	333	234	444	70	56	210	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	727	86	98	1408	333	234	444	70	56	210	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	727	86	98	1408	333	234	444	70	56	210	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.78	0.22	2.00	1.61	0.39	1.00	1.72	0.28	1.00	1.56	0.44
Final Sat.:	1750	3308	391	3150	2992	708	1750	3196	504	1750	2899	801
Capacity Analysis Module:												
Vol/Sat:	0.03	0.22	0.22	0.03	0.47	0.47	0.13	0.14	0.14	0.03	0.07	0.07
Crit Moves:	****				****		****				****	
Green Time:	7.0	67.6	67.6	16.6	77.2	77.2	21.9	24.4	24.4	9.4	11.9	11.9
Volume/Cap:	0.57	0.42	0.42	0.24	0.79	0.79	0.79	0.74	0.74	0.44	0.79	0.79
Uniform Del:	60.0	19.2	19.2	51.1	20.3	20.3	51.9	49.8	49.8	57.7	57.9	57.9
IncremntDel:	8.3	0.2	0.2	0.3	2.1	2.1	13.6	4.3	4.3	2.4	12.1	12.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	19.3	19.3	51.4	22.3	22.3	65.5	54.1	54.1	60.2	69.9	69.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	19.3	19.3	51.4	22.3	22.3	65.5	54.1	54.1	60.2	69.9	69.9
LOS by Move:	E	B-	B-	D-	C+	C+	E	D-	D-	E	E	E
HCM2kAvgQ:	3	10	10	2	27	27	10	10	10	2	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



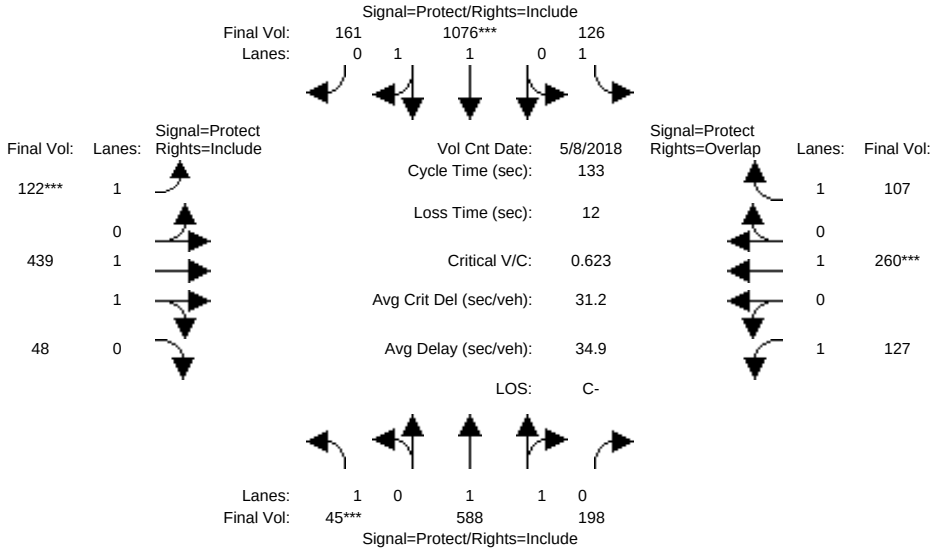
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	39	1045	76	34	527	79	153	177	49	147	283	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1045	76	34	527	79	153	177	49	147	283	146
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1045	76	34	527	79	153	177	49	147	283	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	1045	76	34	527	79	153	177	49	147	283	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	1045	76	34	527	79	153	177	49	147	283	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	1045	76	34	527	79	153	177	49	147	283	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.86	0.14	1.00	1.73	0.27	1.00	1.55	0.45	1.00	1.00	1.00
Final Sat.:	1750	3449	251	1750	3217	482	1750	2897	802	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.30	0.30	0.02	0.16	0.16	0.09	0.06	0.06	0.08	0.15	0.08
Crit Moves:		****		****			****				****	
Green Time:	17.3	64.0	64.0	7.0	53.8	53.8	18.5	23.6	23.6	26.4	31.5	38.5
Volume/Cap:	0.17	0.63	0.63	0.37	0.41	0.41	0.63	0.34	0.34	0.42	0.63	0.29
Uniform Del:	51.5	25.6	25.6	60.9	28.2	28.2	54.0	47.9	47.9	46.7	45.5	36.6
IncremntDel:	0.4	0.7	0.7	2.5	0.2	0.2	5.2	0.3	0.3	0.8	2.9	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.9	26.4	26.4	63.4	28.4	28.4	59.2	48.2	48.2	47.5	48.4	37.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.9	26.4	26.4	63.4	28.4	28.4	59.2	48.2	48.2	47.5	48.4	37.0
LOS by Move:	D-	C	C	E	C	C	E+	D	D	D	D	D+
HCM2kAvgQ:	1	17	17	2	9	9	7	4	4	5	10	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



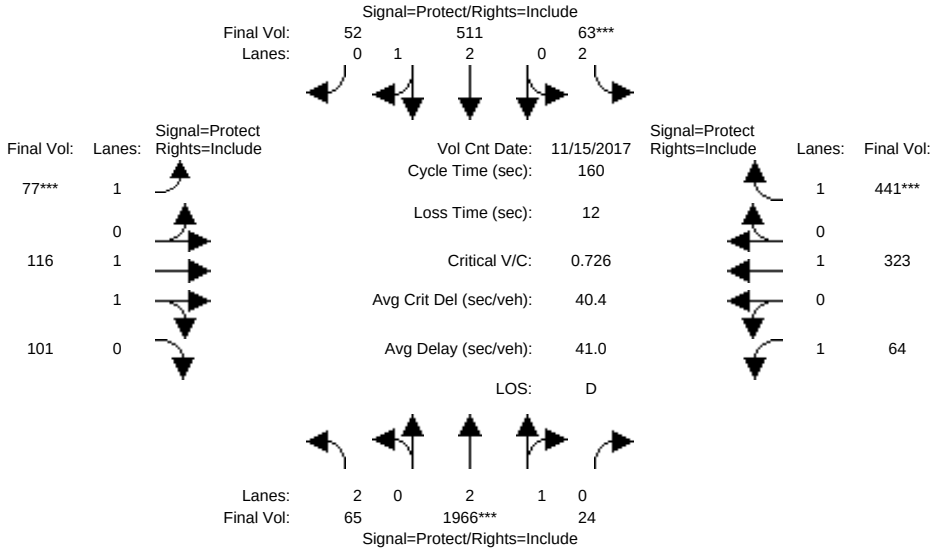
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	45	588	198	126	1076	161	122	439	48	127	260	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	588	198	126	1076	161	122	439	48	127	260	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	588	198	126	1076	161	122	439	48	127	260	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	588	198	126	1076	161	122	439	48	127	260	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	588	198	126	1076	161	122	439	48	127	260	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	588	198	126	1076	161	122	439	48	127	260	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.48	0.52	1.00	1.73	0.27	1.00	1.80	0.20	1.00	1.00	1.00
Final Sat.:	1750	2767	932	1750	3218	482	1750	3335	365	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.21	0.07	0.33	0.33	0.07	0.13	0.13	0.07	0.14	0.06
Crit Moves:	****				****		****				****	
Green Time:	7.0	57.9	57.9	19.6	70.5	70.5	14.7	28.1	28.1	15.5	28.8	48.4
Volume/Cap:	0.49	0.49	0.49	0.49	0.63	0.63	0.63	0.62	0.62	0.62	0.63	0.17
Uniform Del:	61.3	27.0	27.0	52.1	22.1	22.1	56.6	47.7	47.7	56.0	47.3	28.6
IncremntDel:	4.0	0.2	0.2	1.5	0.7	0.7	6.6	1.6	1.6	5.9	3.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.3	27.2	27.2	53.5	22.8	22.8	63.1	49.3	49.3	61.9	50.4	28.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	27.2	27.2	53.5	22.8	22.8	63.1	49.3	49.3	61.9	50.4	28.8
LOS by Move:	E	C	C	D-	C+	C+	E	D	D	E	D	C
HCM2kAvgQ:	2	11	11	6	18	18	6	10	10	5	9	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



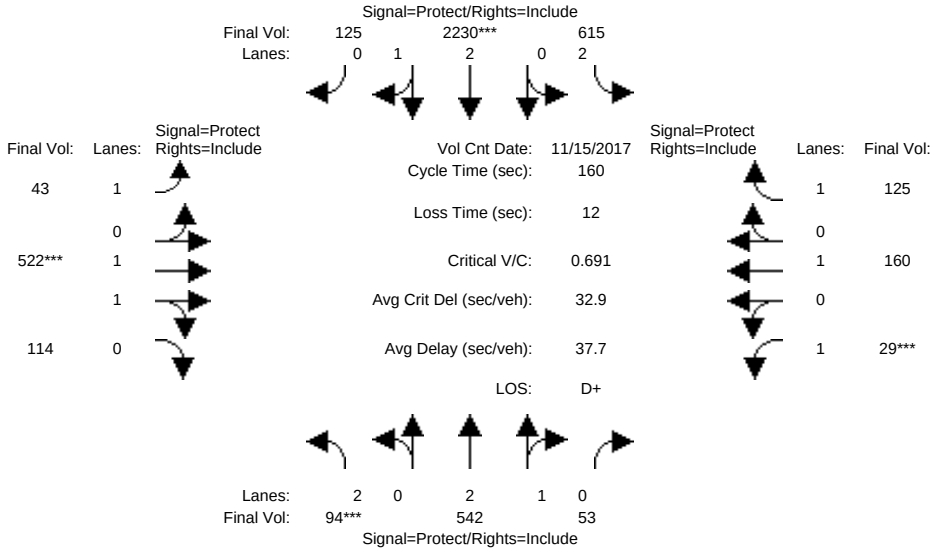
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	1966	24	63	511	52	77	116	101	64	323	441
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1966	24	63	511	52	77	116	101	64	323	441
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1966	24	63	511	52	77	116	101	64	323	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1966	24	63	511	52	77	116	101	64	323	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1966	24	63	511	52	77	116	101	64	323	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1966	24	63	511	52	77	116	101	64	323	441
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	2.00	2.96	0.04	2.00	2.71	0.29	1.00	1.04	0.96	1.00	1.00	1.00
Final Sat.:	3150	5532	68	3150	5082	517	1750	1977	1721	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.36	0.36	0.02	0.10	0.10	0.04	0.06	0.06	0.04	0.17	0.25
Crit Moves:		****		****			****					****
Green Time:	25.4	76.9	76.9	7.0	58.5	58.5	9.5	37.7	37.7	26.4	54.6	54.6
Volume/Cap:	0.13	0.74	0.74	0.46	0.28	0.28	0.74	0.25	0.25	0.22	0.50	0.74
Uniform Del:	57.8	33.5	33.5	74.6	35.8	35.8	74.0	49.7	49.7	57.9	41.9	46.5
IncremntDel:	0.1	1.1	1.1	2.4	0.1	0.1	24.2	0.2	0.2	0.4	0.6	4.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.9	34.6	34.6	77.0	35.9	35.9	98.2	49.8	49.8	58.3	42.5	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.9	34.6	34.6	77.0	35.9	35.9	98.2	49.8	49.8	58.3	42.5	51.3
LOS by Move:	E+	C-	C-	E-	D+	D+	F	D	D	E+	D	D-
HCM2kAvgQ:	2	26	26	2	6	6	4	4	4	3	12	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



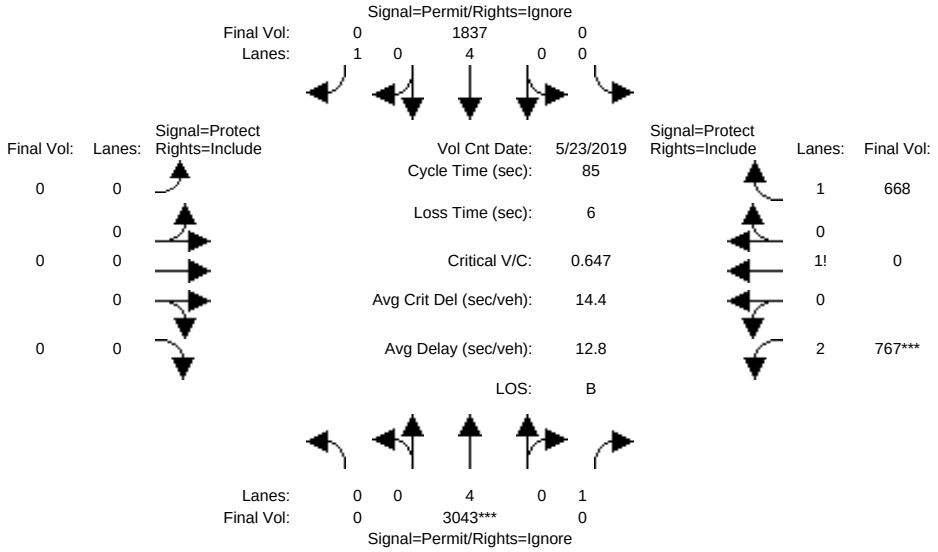
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	94	542	53	615	2230	125	43	522	114	29	160	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	542	53	615	2230	125	43	522	114	29	160	125
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	542	53	615	2230	125	43	522	114	29	160	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	542	53	615	2230	125	43	522	114	29	160	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	542	53	615	2230	125	43	522	114	29	160	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	542	53	615	2230	125	43	522	114	29	160	125
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.83	0.17	1.00	1.63	0.37	1.00	1.00	1.00
Final Sat.:	3150	5101	499	3150	5302	297	1750	3036	663	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.11	0.20	0.42	0.42	0.02	0.17	0.17	0.02	0.08	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.0	36.0	36.0	66.1	95.1	95.1	15.7	38.9	38.9	7.0	30.2	30.2
Volume/Cap:	0.68	0.47	0.47	0.47	0.71	0.71	0.25	0.71	0.71	0.38	0.45	0.38
Uniform Del:	75.4	53.8	53.8	34.2	22.7	22.7	66.7	55.4	55.4	74.4	57.5	56.7
IncremntDel:	13.1	0.3	0.3	0.3	0.7	0.7	0.8	2.6	2.6	3.1	0.9	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.5	54.1	54.1	34.5	23.4	23.4	67.5	58.0	58.0	77.5	58.4	57.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	54.1	54.1	34.5	23.4	23.4	67.5	58.0	58.0	77.5	58.4	57.4
LOS by Move:	F	D-	D-	C-	C	C	E	E+	E+	E-	E+	E+
HCM2kAvgQ:	3	8	8	12	26	26	2	14	14	2	7	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



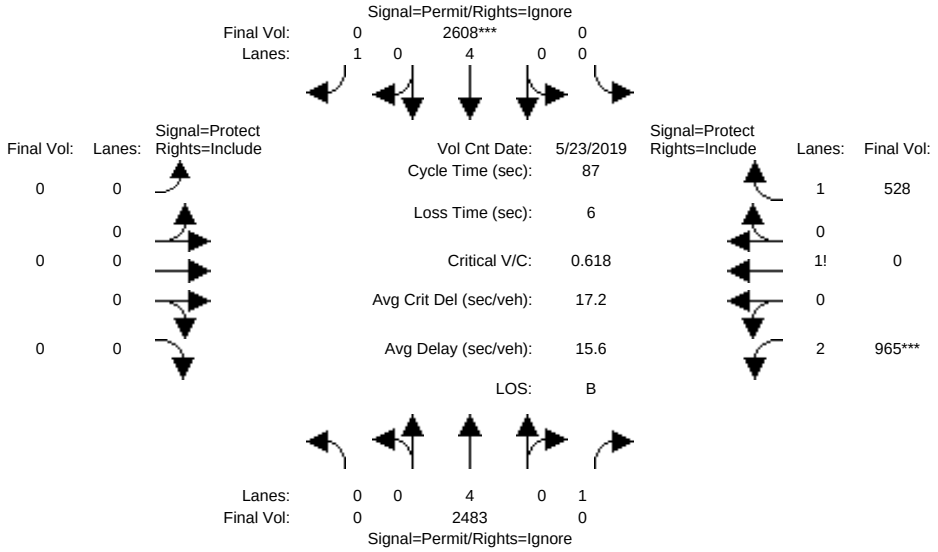
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	3043	676	0	1837	381	0	0	0	767	0	668
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3043	676	0	1837	381	0	0	0	767	0	668
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3043	676	0	1837	381	0	0	0	767	0	668
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3043	0	0	1837	0	0	0	0	767	0	668
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3043	0	0	1837	0	0	0	0	767	0	668
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	3043	0	0	1837	0	0	0	0	767	0	668
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.82	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.46	0.00	1.54
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3816	0	2688
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.20	0.00	0.25
Crit Moves:		****								****		
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	22.7
Volume/Cap:	0.00	0.67	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.75	0.00	0.93
Uniform Del:	0.0	11.3	0.0	0.0	9.0	0.0	0.0	0.0	0.0	28.5	0.0	30.4
IncremntDel:	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.7	0.0	10.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.9	0.0	0.0	5.2	0.0	0.0	0.0	0.0	30.3	0.0	40.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.9	0.0	0.0	5.2	0.0	0.0	0.0	0.0	30.3	0.0	40.6
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	D
HCM2kAvgQ:	0	10	0	0	4	0	0	0	0	11	0	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



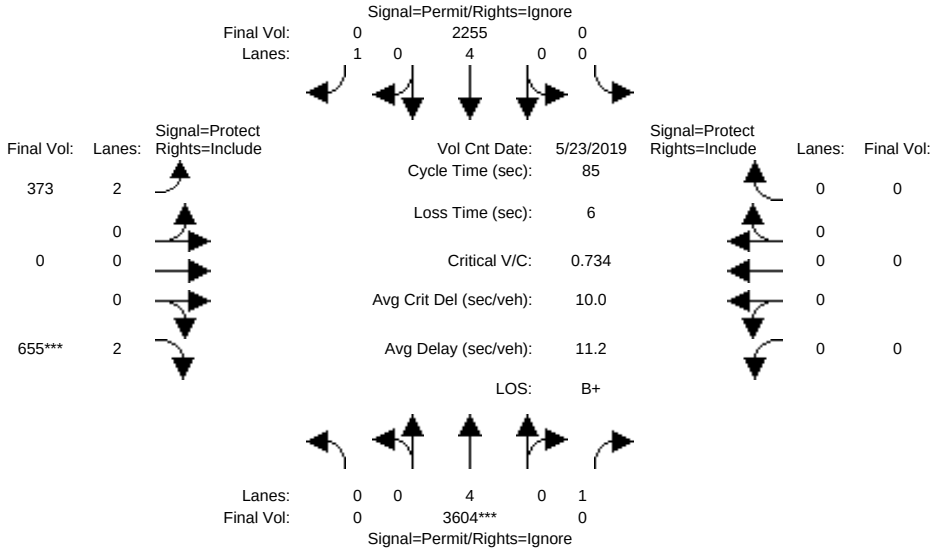
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2483	590	0	2608	551	0	0	0	965	0	528
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2483	590	0	2608	551	0	0	0	965	0	528
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2483	590	0	2608	551	0	0	0	965	0	528
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2483	0	0	2608	0	0	0	0	965	0	528
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2483	0	0	2608	0	0	0	0	965	0	528
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2483	0	0	2608	0	0	0	0	965	0	528
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.85	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.57	0.00	1.43
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	4148	0	2504
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.23	0.00	0.21
Crit Moves:					****					****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.53	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.89	0.00	0.81
Uniform Del:	0.0	9.8	0.0	0.0	10.0	0.0	0.0	0.0	0.0	31.0	0.0	30.1
IncremntDel:	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	6.5	0.0	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.9	0.0	0.0	5.6	0.0	0.0	0.0	0.0	37.4	0.0	32.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.9	0.0	0.0	5.6	0.0	0.0	0.0	0.0	37.4	0.0	32.9
LOS by Move:	A	B	A	A	A	A	A	A	A	D+	A	C-
HCM2kAvgQ:	0	12	0	0	6	0	0	0	0	15	0	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



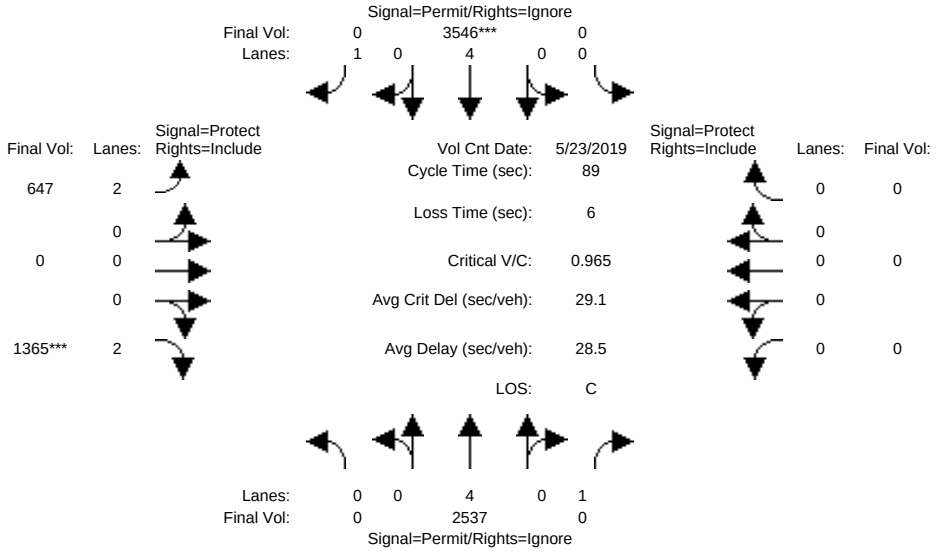
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	3604	781	0	2255	340	373	0	655	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3604	781	0	2255	340	373	0	655	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3604	781	0	2255	340	373	0	655	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3604	0	0	2255	0	373	0	655	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3604	0	0	2255	0	373	0	655	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	3604	0	0	2255	0	373	0	655	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.47	0.00	0.00	0.30	0.00	0.12	0.00	0.21	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.67	0.00	0.00	0.53	0.00	0.80	0.00	0.95	0.00	0.00	0.00
Uniform Del:	0.0	6.8	0.0	0.0	11.7	0.0	35.0	0.0	32.7	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	0.1	0.0	9.4	0.0	22.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.7	0.0	0.0	7.9	0.0	44.4	0.0	55.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.7	0.0	0.0	7.9	0.0	44.4	0.0	55.5	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	D	A	E+	A	A	A
HCM2kAvgQ:	0	5	0	0	7	0	8	0	15	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



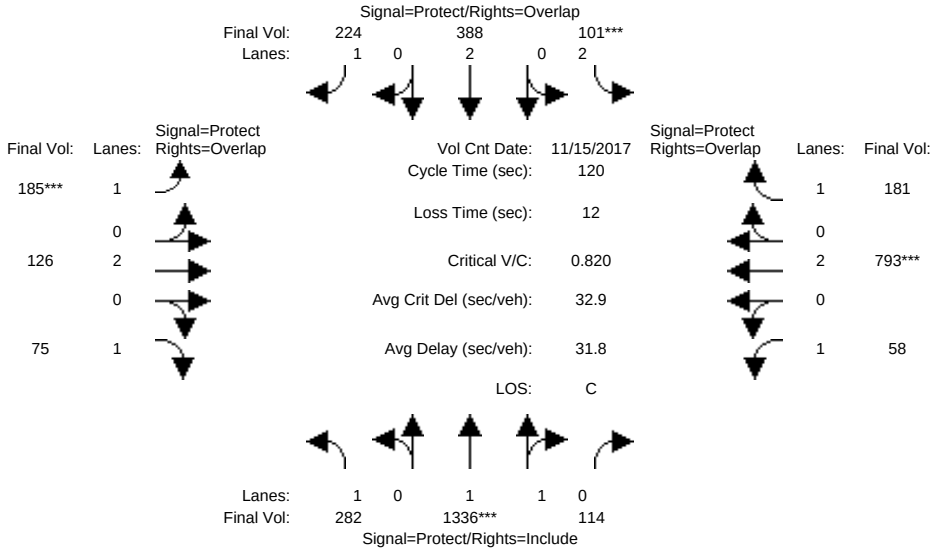
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	2537	517	0	3546	178	647	0	1365	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2537	517	0	3546	178	647	0	1365	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2537	517	0	3546	178	647	0	1365	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2537	0	0	3546	0	647	0	1365	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2537	0	0	3546	0	647	0	1365	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2537	0	0	3546	0	647	0	1365	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.47	0.00	0.21	0.00	0.43	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.48	0.00	0.00	0.93	0.00	1.16	0.00	1.00	0.00	0.00	0.00
Uniform Del:	0.0	6.2	0.0	0.0	20.8	0.0	36.7	0.0	25.3	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	4.9	0.0	92.4	0.0	25.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.8	0.0	0.0	20.8	0.0	129.0	0.0	50.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.8	0.0	0.0	20.8	0.0	129.0	0.0	50.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	C+	A	F	A	D	A	A	A
HCM2kAvgQ:	0	3	0	0	26	0	21	0	31	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



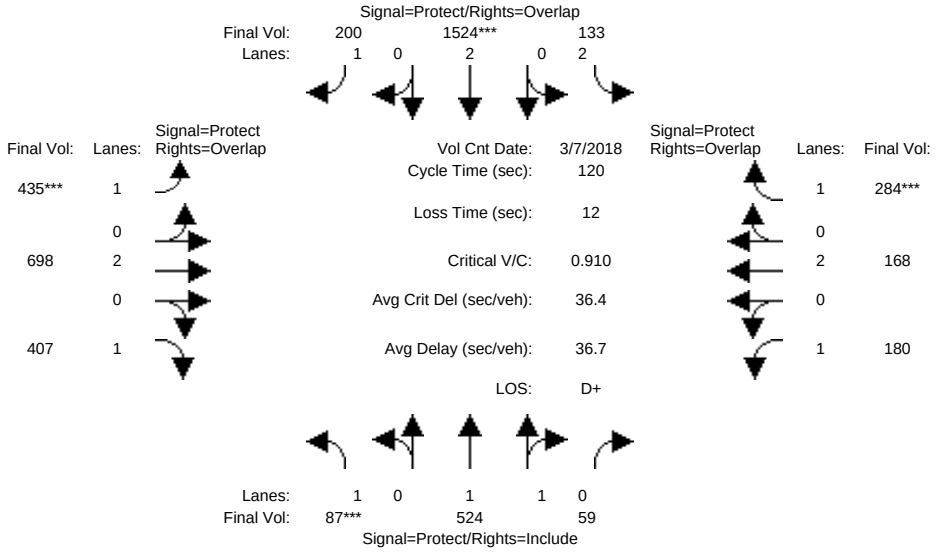
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	257	1216	104	92	353	204	168	115	68	53	722	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	257	1216	104	92	353	204	168	115	68	53	722	165
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	257	1216	104	92	353	204	168	115	68	53	722	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	282	1336	114	101	388	224	185	126	75	58	793	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	282	1336	114	101	388	224	185	126	75	58	793	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	282	1336	114	101	388	224	185	126	75	58	793	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3408	291	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.39	0.39	0.03	0.10	0.13	0.11	0.03	0.04	0.03	0.21	0.10
Crit Moves:		****		****			****				****	
Green Time:	38.9	55.5	55.5	8.0	24.6	39.5	14.9	22.2	61.1	22.2	29.6	37.6
Volume/Cap:	0.50	0.85	0.85	0.48	0.50	0.39	0.85	0.18	0.08	0.18	0.85	0.33
Uniform Del:	32.7	28.5	28.5	54.0	42.2	30.9	51.4	41.2	15.1	41.2	43.1	31.6
IncremntDel:	0.7	4.2	4.2	1.7	0.5	0.4	25.4	0.1	0.0	0.3	7.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.68	0.43	0.43	0.95	0.83	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	22.9	16.3	16.3	53.2	35.5	21.2	76.8	41.3	15.1	41.5	50.4	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.9	16.3	16.3	53.2	35.5	21.2	76.8	41.3	15.1	41.5	50.4	31.9
LOS by Move:	C+	B	B	D-	D+	C+	E-	D	B	D	D	C
HCM2kAvgQ:	7	18	18	2	6	5	8	2	1	2	14	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



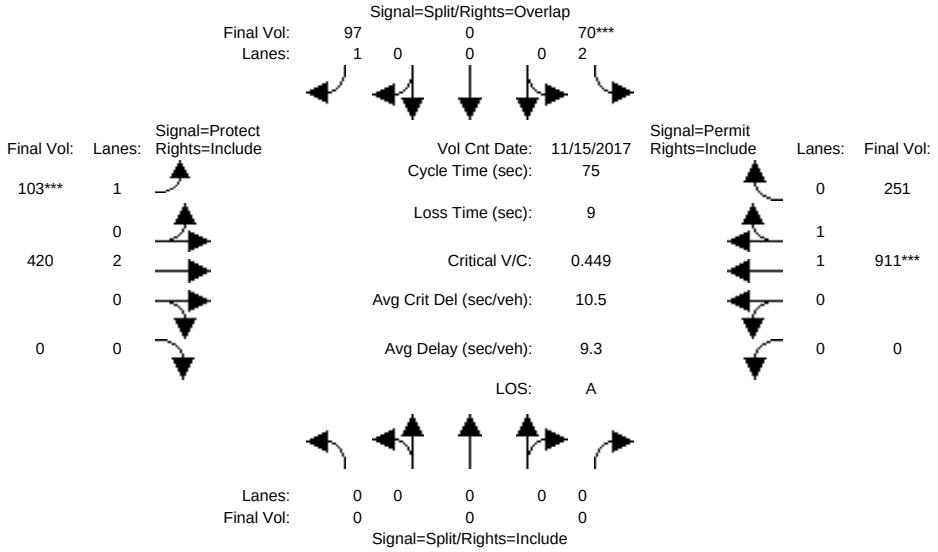
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	86	519	58	132	1509	198	431	691	403	178	166	281
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	519	58	132	1509	198	431	691	403	178	166	281
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	519	58	132	1509	198	431	691	403	178	166	281
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	87	524	59	133	1524	200	435	698	407	180	168	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	524	59	133	1524	200	435	698	407	180	168	284
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	524	59	133	1524	200	435	698	407	180	168	284
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.79	0.21	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3328	372	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.16	0.04	0.40	0.11	0.25	0.18	0.23	0.10	0.04	0.16
Crit Moves:	****				****		****					****
Green Time:	6.5	41.7	41.7	17.7	52.9	85.7	32.8	29.1	35.6	16.3	12.6	30.3
Volume/Cap:	0.91	0.45	0.45	0.29	0.91	0.16	0.91	0.76	0.78	0.76	0.42	0.64
Uniform Del:	56.4	30.3	30.3	45.6	31.4	5.5	42.2	42.2	38.6	50.0	50.3	40.1
IncremntDel:	63.7	0.3	0.3	0.3	7.8	0.1	21.4	3.7	7.6	13.1	0.7	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.96	0.64	0.64	0.88	0.47	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	117.9	19.8	19.8	40.7	22.7	0.1	63.6	45.8	46.2	63.1	51.0	43.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.9	19.8	19.8	40.7	22.7	0.1	63.6	45.8	46.2	63.1	51.0	43.3
LOS by Move:	F	B-	B-	D	C+	A	E	D	D	E	D-	D
HCM2kAvgQ:	4	6	6	2	22	0	18	12	15	7	3	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



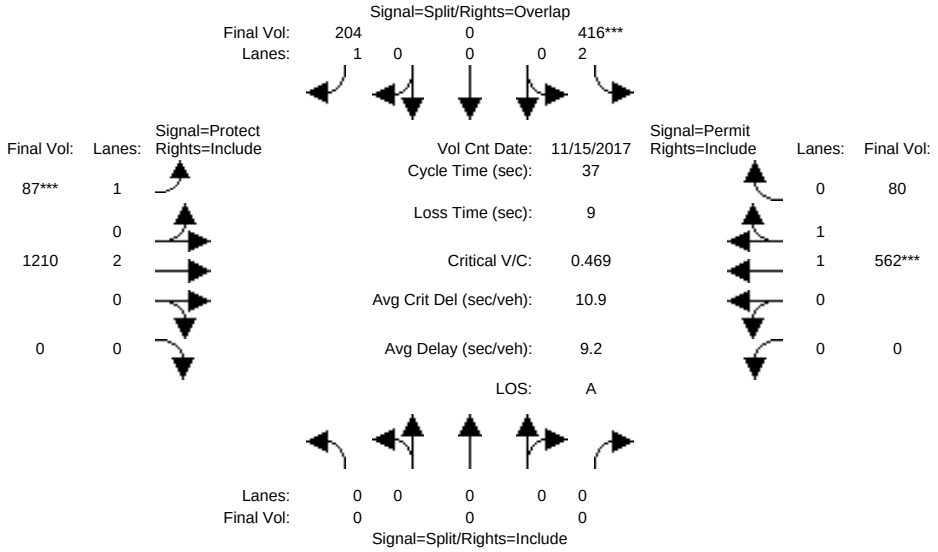
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	63	0	87	93	378	0	0	820	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	63	0	87	93	378	0	0	820	226
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	63	0	87	93	378	0	0	820	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	70	0	97	103	420	0	0	911	251
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	70	0	97	103	420	0	0	911	251
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	70	0	97	103	420	0	0	911	251
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.56	0.44
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2900	799
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.06	0.06	0.11	0.00	0.00	0.31	0.31
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	9.2	0.0	18.2	9.0	56.8	0.0	0.0	47.8	47.8
Volume/Cap:	0.00	0.00	0.00	0.18	0.00	0.23	0.49	0.15	0.00	0.00	0.49	0.49
Uniform Del:	0.0	0.0	0.0	29.5	0.0	22.8	30.9	2.5	0.0	0.0	7.2	7.2
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.3	1.8	0.0	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.7	0.0	23.0	32.7	2.5	0.0	0.0	7.4	7.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.7	0.0	23.0	32.7	2.5	0.0	0.0	7.4	7.4
LOS by Move:	A	A	A	C	A	C	C-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	2	2	1	0	0	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



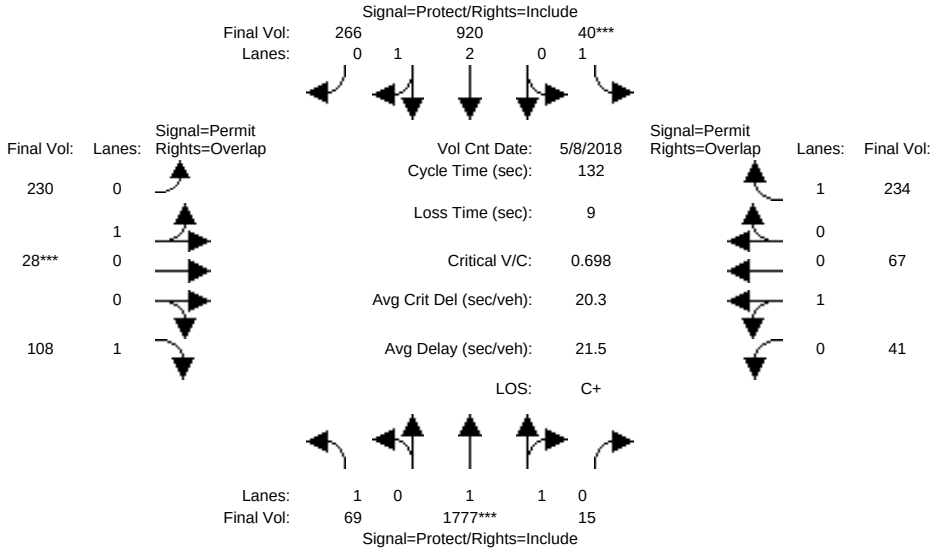
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	370	0	182	77	1077	0	0	500	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	370	0	182	77	1077	0	0	500	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	370	0	182	77	1077	0	0	500	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	416	0	204	87	1210	0	0	562	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	416	0	204	87	1210	0	0	562	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	416	0	204	87	1210	0	0	562	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.74	0.26
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3240	460
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.12	0.05	0.32	0.00	0.00	0.17	0.17
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	9.9	0.0	14.9	5.0	18.1	0.0	0.0	13.1	13.1
Volume/Cap:	0.00	0.00	0.00	0.49	0.00	0.29	0.37	0.65	0.00	0.00	0.49	0.49
Uniform Del:	0.0	0.0	0.0	11.4	0.0	7.4	14.6	7.1	0.0	0.0	9.4	9.4
IncremntDel:	0.0	0.0	0.0	0.5	0.0	0.2	1.0	0.8	0.0	0.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.9	0.0	7.7	15.5	8.0	0.0	0.0	9.7	9.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.9	0.0	7.7	15.5	8.0	0.0	0.0	9.7	9.7
LOS by Move:	A	A	A	B+	A	A	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	2	1	5	0	0	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



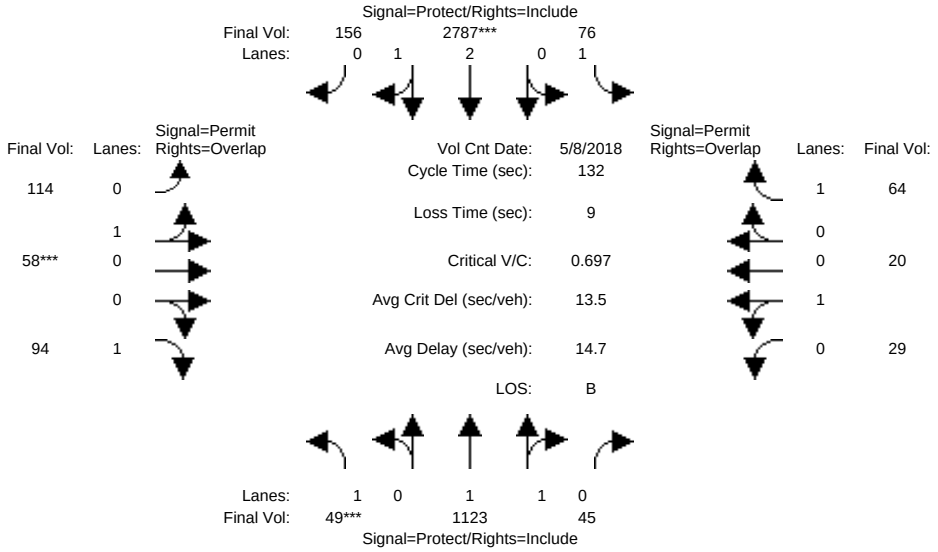
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	69	1777	15	40	920	266	230	28	108	41	67	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	1777	15	40	920	266	230	28	108	41	67	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	1777	15	40	920	266	230	28	108	41	67	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	1777	15	40	920	266	230	28	108	41	67	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	1777	15	40	920	266	230	28	108	41	67	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	1777	15	40	920	266	230	28	108	41	67	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.30	0.70	0.89	0.11	1.00	0.38	0.62	1.00
Final Sat.:	1750	3669	31	1750	4342	1256	1605	195	1750	683	1117	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.48	0.48	0.02	0.21	0.21	0.14	0.14	0.06	0.06	0.06	0.13
Crit Moves:		****		****				****				
Green Time:	19.3	89.5	89.5	7.0	77.2	77.2	26.5	26.5	45.8	26.5	26.5	33.5
Volume/Cap:	0.27	0.71	0.71	0.43	0.36	0.36	0.71	0.71	0.18	0.30	0.30	0.53
Uniform Del:	50.1	13.3	13.3	60.6	14.4	14.4	49.2	49.2	30.0	44.9	44.9	42.4
IncremntDel:	0.6	1.0	1.0	3.2	0.1	0.1	6.6	6.6	0.1	0.5	0.5	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.6	14.3	14.3	63.8	14.5	14.5	55.9	55.9	30.1	45.3	45.3	43.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.6	14.3	14.3	63.8	14.5	14.5	55.9	55.9	30.1	45.3	45.3	43.6
LOS by Move:	D	B	B	E	B	B	E+	E+	C	D	D	D
HCM2kAvgQ:	3	22	22	2	8	8	11	11	3	4	4	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



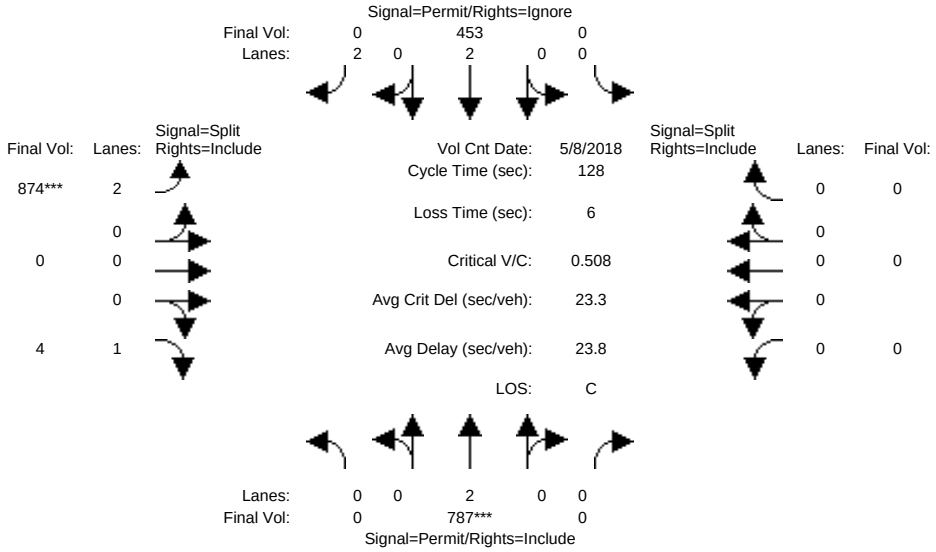
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	49	1123	45	76	2787	156	114	58	94	29	20	64
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	1123	45	76	2787	156	114	58	94	29	20	64
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	1123	45	76	2787	156	114	58	94	29	20	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	1123	45	76	2787	156	114	58	94	29	20	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	1123	45	76	2787	156	114	58	94	29	20	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	1123	45	76	2787	156	114	58	94	29	20	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.92	0.08	1.00	2.84	0.16	0.66	0.34	1.00	0.59	0.41	1.00
Final Sat.:	1750	3557	143	1750	5303	297	1193	607	1750	1065	735	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.04	0.53	0.53	0.10	0.10	0.05	0.03	0.03	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	90.0	90.0	15.1	98.2	98.2	17.8	17.8	24.8	17.8	17.8	33.0
Volume/Cap:	0.53	0.46	0.46	0.38	0.71	0.71	0.71	0.71	0.29	0.20	0.20	0.15
Uniform Del:	60.9	9.8	9.8	54.1	9.1	9.1	54.6	54.6	46.0	50.7	50.7	38.6
IncremntDel:	5.6	0.1	0.1	1.2	0.6	0.6	9.2	9.2	0.5	0.4	0.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.5	9.9	9.9	55.3	9.7	9.7	63.7	63.7	46.4	51.2	51.2	38.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	9.9	9.9	55.3	9.7	9.7	63.7	63.7	46.4	51.2	51.2	38.7
LOS by Move:	E	A	A	E+	A	A	E	E	D	D-	D-	D+
HCM2kAvgQ:	2	11	11	3	22	22	8	8	4	2	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



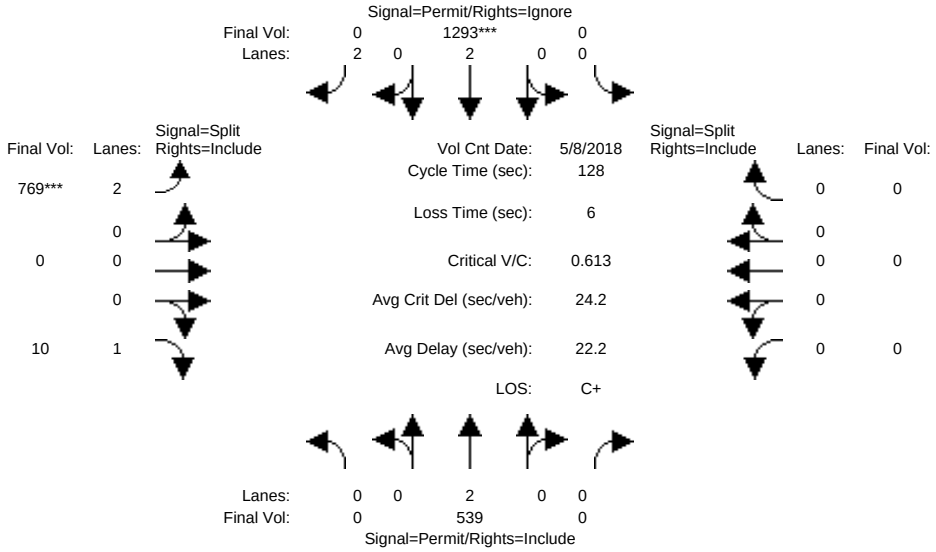
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	787	0	0	453	746	874	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	787	0	0	453	746	874	0	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	787	0	0	453	746	874	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	787	0	0	453	0	874	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	787	0	0	453	0	874	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	787	0	0	453	0	874	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.00	0.00	0.12	0.00	0.28	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	52.1	0.0	0.0	52.1	0.0	69.9	0.0	69.9	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.00	0.00	0.29	0.00	0.51	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	28.3	0.0	0.0	25.5	0.0	18.3	0.0	13.2	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	28.6	0.0	0.0	25.6	0.0	18.5	0.0	13.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.6	0.0	0.0	25.6	0.0	18.5	0.0	13.2	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B-	A	B	A	A	A
HCM2kAvgQ:	0	11	0	0	6	0	13	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



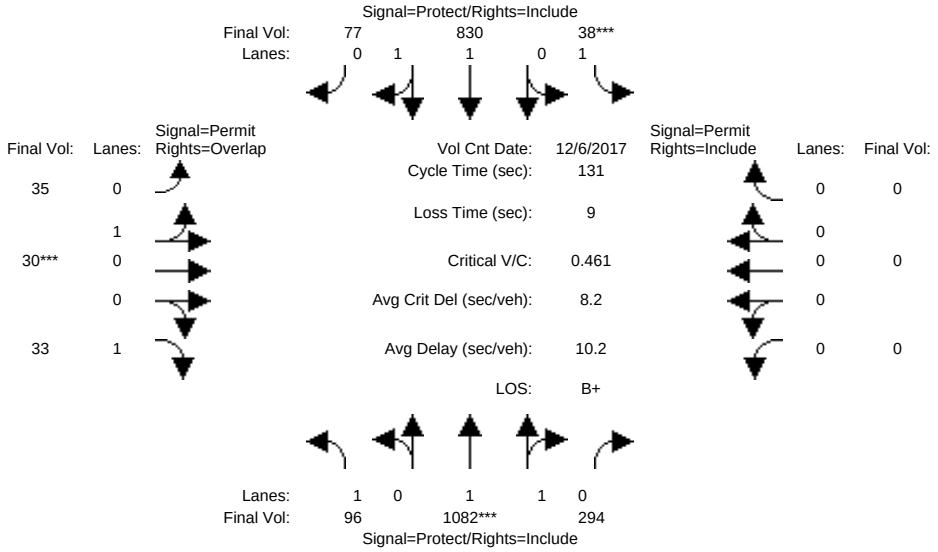
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	539	0	0	1293	1272	769	0	10	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	539	0	0	1293	1272	769	0	10	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	539	0	0	1293	1272	769	0	10	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	539	0	0	1293	0	769	0	10	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	539	0	0	1293	0	769	0	10	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	539	0	0	1293	0	769	0	10	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.00	0.00	0.34	0.00	0.24	0.00	0.01	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	71.0	0.0	0.0	71.0	0.0	51.0	0.0	51.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.26	0.00	0.00	0.61	0.00	0.61	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	14.8	0.0	0.0	19.2	0.0	30.7	0.0	23.3	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.5	0.0	0.9	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.8	0.0	0.0	19.8	0.0	31.6	0.0	23.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.8	0.0	0.0	19.8	0.0	31.6	0.0	23.3	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B-	A	C	A	C	A	A	A
HCM2kAvgQ:	0	5	0	0	16	0	15	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



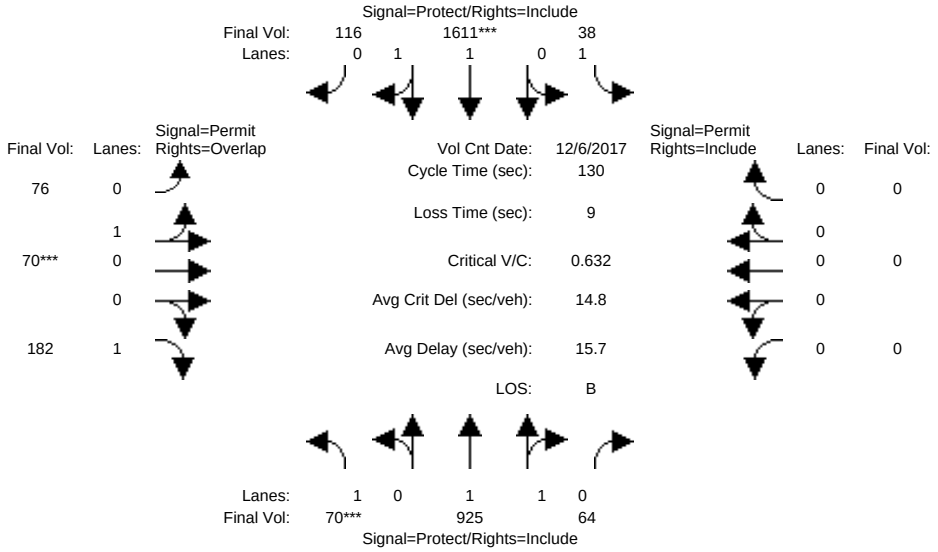
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	96	1082	294	38	830	77	35	30	33	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	1082	294	38	830	77	35	30	33	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	1082	294	38	830	77	35	30	33	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	96	1082	294	38	830	77	35	30	33	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	1082	294	38	830	77	35	30	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	96	1082	294	38	830	77	35	30	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.56	0.44	1.00	1.83	0.17	0.54	0.46	1.00	0.00	0.00	0.00
Final Sat.:	1750	2909	790	1750	3386	314	969	831	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.37	0.37	0.02	0.25	0.25	0.04	0.04	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	20.4	105	104.8	7.0	91.4	91.4	10.2	10.2	30.6	0.0	0.0	0.0
Volume/Cap:	0.35	0.46	0.46	0.41	0.35	0.35	0.46	0.46	0.08	0.00	0.00	0.00
Uniform Del:	49.4	4.2	4.2	60.0	7.9	7.9	57.8	57.8	39.2	0.0	0.0	0.0
IncremntDel:	0.8	0.1	0.1	2.9	0.1	0.1	2.4	2.4	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	50.1	4.3	4.3	62.9	8.0	8.0	60.2	60.2	39.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.1	4.3	4.3	62.9	8.0	8.0	60.2	60.2	39.3	0.0	0.0	0.0
LOS by Move:	D	A	A	E	A	A	E	E	D	A	A	A
HCM2kAvgQ:	4	9	9	2	7	7	3	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



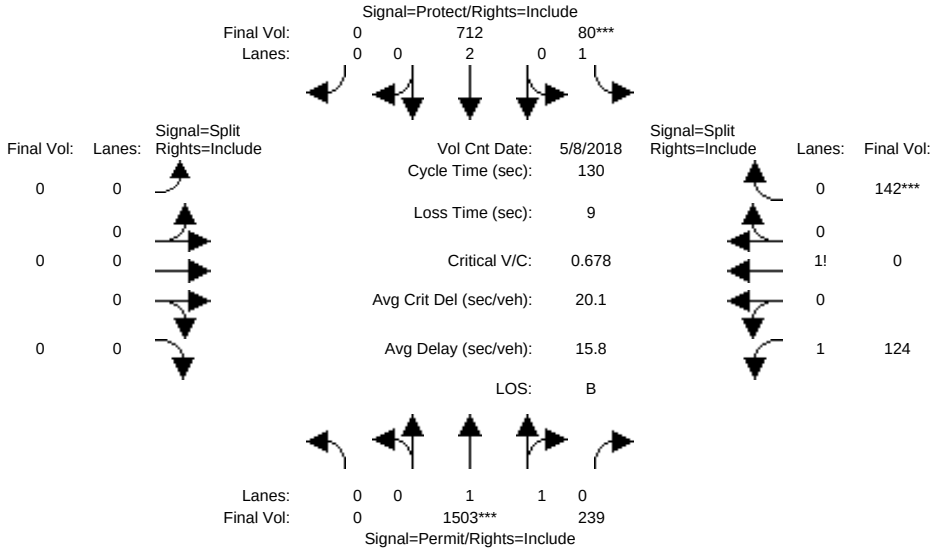
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	70	925	64	38	1611	116	76	70	182	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	925	64	38	1611	116	76	70	182	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	925	64	38	1611	116	76	70	182	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	925	64	38	1611	116	76	70	182	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	925	64	38	1611	116	76	70	182	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	925	64	38	1611	116	76	70	182	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.87	0.13	1.00	1.86	0.14	0.52	0.48	1.00	0.00	0.00	0.00
Final Sat.:	1750	3460	239	1750	3451	249	937	863	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.27	0.27	0.02	0.47	0.47	0.08	0.08	0.10	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	8.2	86.8	86.8	17.5	96.1	96.1	16.7	16.7	24.9	0.0	0.0	0.0
Volume/Cap:	0.63	0.40	0.40	0.16	0.63	0.63	0.63	0.63	0.54	0.00	0.00	0.00
Uniform Del:	59.4	9.8	9.8	49.8	8.3	8.3	53.7	53.7	47.4	0.0	0.0	0.0
IncremntDel:	11.2	0.1	0.1	0.3	0.5	0.5	5.6	5.6	1.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	70.6	9.9	9.9	50.1	8.8	8.8	59.3	59.3	49.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.6	9.9	9.9	50.1	8.8	8.8	59.3	59.3	49.2	0.0	0.0	0.0
LOS by Move:	E	A	A	D	A	A	E+	E+	D	A	A	A
HCM2kAvgQ:	3	8	8	1	16	16	6	6	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



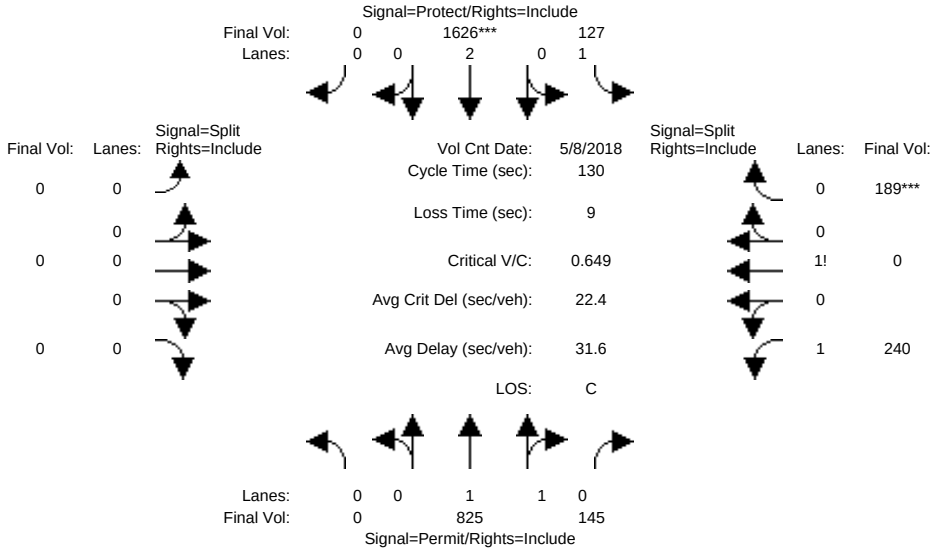
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1503	239	80	712	0	0	0	0	124	0	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1503	239	80	712	0	0	0	0	124	0	142
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1503	239	80	712	0	0	0	0	124	0	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1503	239	80	712	0	0	0	0	124	0	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1503	239	80	712	0	0	0	0	124	0	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1503	239	80	712	0	0	0	0	124	0	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.72	0.28	1.00	2.00	0.00	0.00	0.00	0.00	1.31	0.00	0.69
Final Sat.:	0	3192	508	1750	3800	0	0	0	0	2292	0	1242
Capacity Analysis Module:												
Vol/Sat:	0.00	0.47	0.47	0.05	0.19	0.00	0.00	0.00	0.00	0.05	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	90.3	90.3	8.8	99.1	0.0	0.0	0.0	0.0	21.9	0.0	21.9
Volume/Cap:	0.00	0.68	0.68	0.68	0.25	0.00	0.00	0.00	0.00	0.32	0.00	0.68
Uniform Del:	0.0	11.5	11.5	59.2	4.5	0.0	0.0	0.0	0.0	47.5	0.0	50.7
IncremntDel:	0.0	0.7	0.7	14.7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	4.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	12.2	12.2	73.9	4.6	0.0	0.0	0.0	0.0	47.7	0.0	55.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.2	12.2	73.9	4.6	0.0	0.0	0.0	0.0	47.7	0.0	55.4
LOS by Move:	A	B	B	E	A	A	A	A	A	D	A	E+
HCM2kAvgQ:	0	19	19	4	4	0	0	0	0	3	0	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



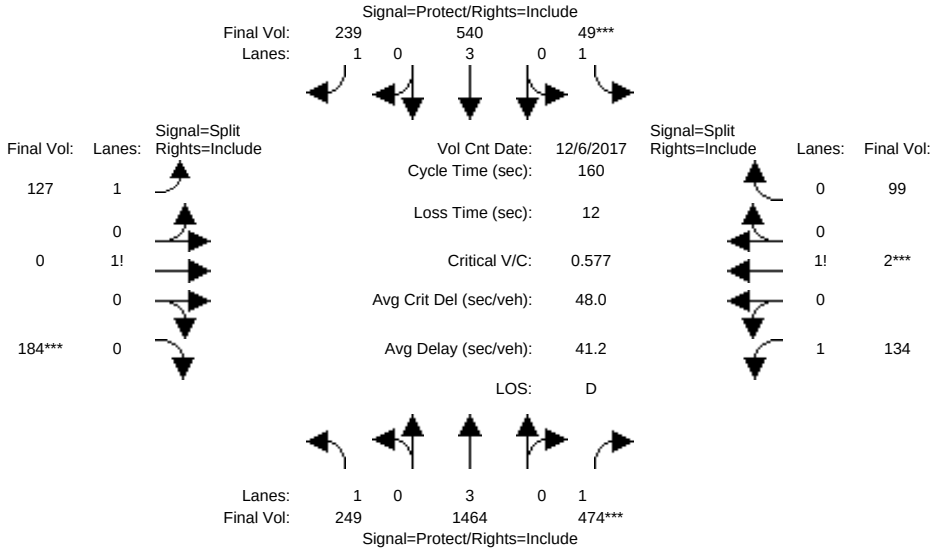
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	825	145	127	1626	0	0	0	0	240	0	189
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	825	145	127	1626	0	0	0	0	240	0	189
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	825	145	127	1626	0	0	0	0	240	0	189
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	825	145	127	1626	0	0	0	0	240	0	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	825	145	127	1626	0	0	0	0	240	0	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	825	145	127	1626	0	0	0	0	240	0	189
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.69	0.31	1.00	2.00	0.00	0.00	0.00	0.00	1.39	0.00	0.61
Final Sat.:	0	3146	553	1750	3800	0	0	0	0	2430	0	1070
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.07	0.43	0.00	0.00	0.00	0.00	0.10	0.00	0.18
Crit Moves:					****							****
Green Time:	0.0	36.6	36.6	59.7	96.3	0.0	0.0	0.0	0.0	24.7	0.0	24.7
Volume/Cap:	0.00	0.93	0.93	0.16	0.58	0.00	0.00	0.00	0.00	0.52	0.00	0.93
Uniform Del:	0.0	45.5	45.5	20.5	7.6	0.0	0.0	0.0	0.0	47.4	0.0	51.8
IncremntDel:	0.0	14.2	14.2	0.1	0.3	0.0	0.0	0.0	0.0	0.6	0.0	25.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	59.7	59.7	20.6	7.9	0.0	0.0	0.0	0.0	48.0	0.0	77.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	59.7	59.7	20.6	7.9	0.0	0.0	0.0	0.0	48.0	0.0	77.5
LOS by Move:	A	E+	E+	C+	A	A	A	A	A	D	A	E-
HCM2kAvgQ:	0	21	21	3	14	0	0	0	0	6	0	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



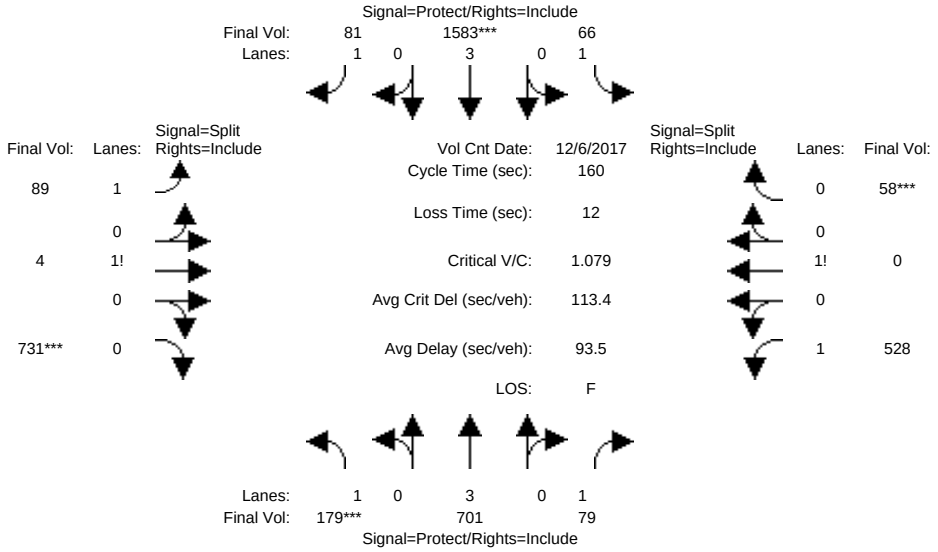
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	249	1464	474	49	540	239	127	0	184	134	2	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	1464	474	49	540	239	127	0	184	134	2	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	1464	474	49	540	239	127	0	184	134	2	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	1464	474	49	540	239	127	0	184	134	2	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	1464	474	49	540	239	127	0	184	134	2	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	1464	474	49	540	239	127	0	184	134	2	99
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.26	0.00	0.74	1.40	0.01	0.59
Final Sat.:	1750	5700	1750	1750	5700	1750	2208	0	1328	2448	21	1031
Capacity Analysis Module:												
Vol/Sat:	0.14	0.26	0.27	0.03	0.09	0.14	0.06	0.00	0.14	0.05	0.10	0.10
Crit Moves:			****	****					****		****	
Green Time:	42.3	75.2	75.2	7.8	40.6	40.6	38.4	0.0	38.4	26.6	26.6	26.6
Volume/Cap:	0.54	0.55	0.58	0.58	0.37	0.54	0.24	0.00	0.58	0.33	0.58	0.58
Uniform Del:	50.5	30.3	30.9	74.5	49.2	51.6	49.0	0.0	53.6	58.8	61.5	61.5
IncremntDel:	1.3	0.2	1.0	9.4	0.2	1.3	0.1	0.0	1.5	0.3	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.7	30.5	31.9	83.9	49.4	52.9	49.1	0.0	55.2	59.1	63.5	63.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.7	30.5	31.9	83.9	49.4	52.9	49.1	0.0	55.2	59.1	63.5	63.5
LOS by Move:	D-	C	C	F	D	D-	D	A	E+	E+	E	E
HCM2kAvgQ:	11	16	17	3	7	11	4	0	12	5	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



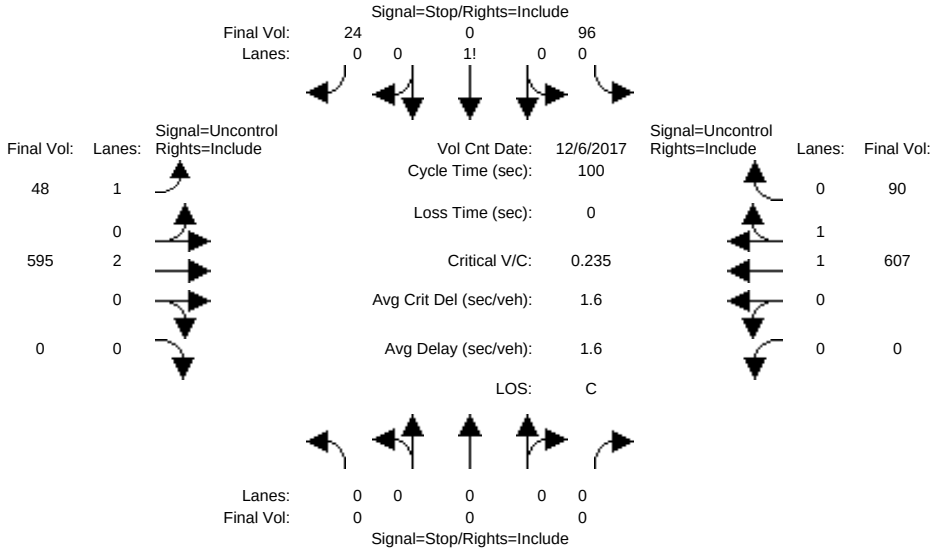
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	179	701	79	66	1583	81	89	4	731	528	0	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	701	79	66	1583	81	89	4	731	528	0	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	179	701	79	66	1583	81	89	4	731	528	0	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	179	701	79	66	1583	81	89	4	731	528	0	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	701	79	66	1583	81	89	4	731	528	0	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	179	701	79	66	1583	81	89	4	731	528	0	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.06	0.01	0.93	1.82	0.00	0.18
Final Sat.:	1750	5700	1750	1750	5700	1750	1853	9	1685	3185	0	315
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.05	0.04	0.28	0.05	0.05	0.43	0.43	0.17	0.00	0.18
Crit Moves:	****				****				****			****
Green Time:	15.2	41.6	41.6	14.8	41.2	41.2	64.3	64.3	64.3	27.3	0.0	27.3
Volume/Cap:	1.08	0.47	0.17	0.41	1.08	0.18	0.12	1.08	1.08	0.97	0.00	1.08
Uniform Del:	72.4	50.0	45.9	68.5	59.4	46.2	30.0	47.8	47.8	66.0	0.0	66.4
IncremntDel:	92.4	0.2	0.2	1.7	47.8	0.2	0.0	55.9	55.9	29.6	0.0	61.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	164.8	50.2	46.1	70.2	107	46.4	30.0	104	103.7	95.5	0.0	127.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	164.8	50.2	46.1	70.2	107	46.4	30.0	104	103.7	95.5	0.0	127.9
LOS by Move:	F	D	D	E	F	D	C	F	F	F	A	F
HCM2kAvgQ:	12	9	3	3	32	3	3	51	51	20	0	24

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background AM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	96	0	24	48	595	0	0	607	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	96	0	24	48	595	0	0	607	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Adju:	0	0	-1	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	-1	96	0	24	48	595	0	0	607	90
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	24	48	595	0	0	607	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	96	0	24	48	595	0	0	607	90
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1046	1343	349	697	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	227	153	653	909	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	218	145	653	909	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	341	303	xxxxx	408	327	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.24	0.00	0.04	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	441	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	16.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			16.2			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	-1	96	0	24	48	595	0	0	607	90
ApproachDel:	xxxxxx			16.2			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=OVERFLOW]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=-1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1459]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=120]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1459]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	-1	96	0	24	48	595	0	0	607	90

Major Street Volume: 1340
Minor Approach Volume: 120
Minor Approach Volume Threshold: 184

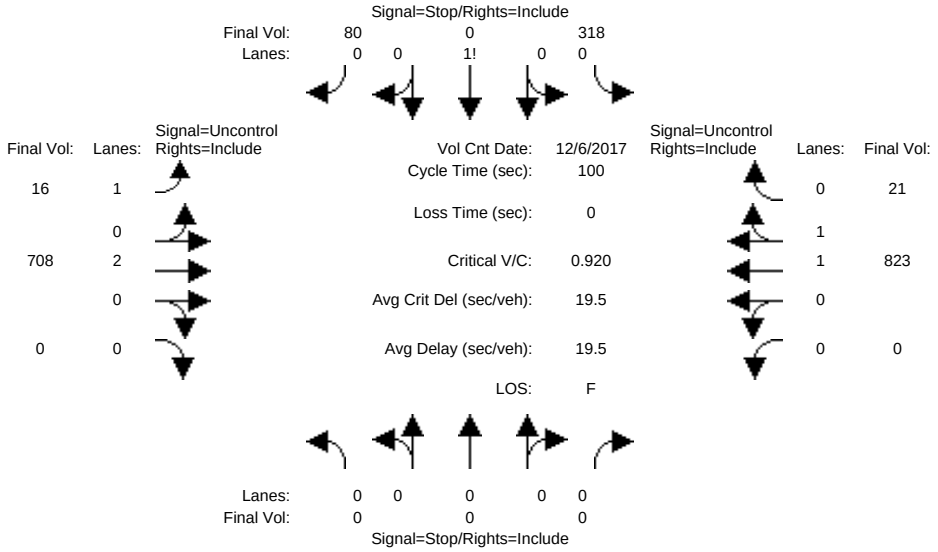
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	0	0	0	318	0	80	16	708	0	0	823	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	318	0	80	16	708	0	0	823	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	318	0	80	16	708	0	0	823	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	318	0	80	16	708	0	0	823	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	318	0	80	16	708	0	0	823	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1220	1574	422	844	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	175	111	586	801	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	173	109	586	801	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	306	280	xxxxx	346	288	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.92	0.00	0.14	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	377	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	13.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	95.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			95.9			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	318	0	80	16	708	0	0	823	21
ApproachDel:	xxxxxx			95.9			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=10.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=398]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1966]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	318	0	80	16	708	0	0	823	21

Major Street Volume: 1568
Minor Approach Volume: 398
Minor Approach Volume Threshold: 130

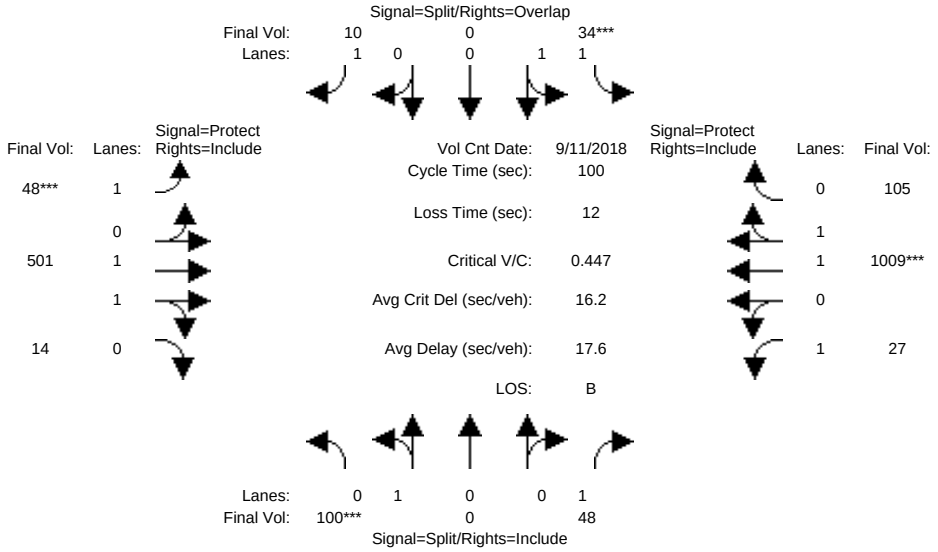
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



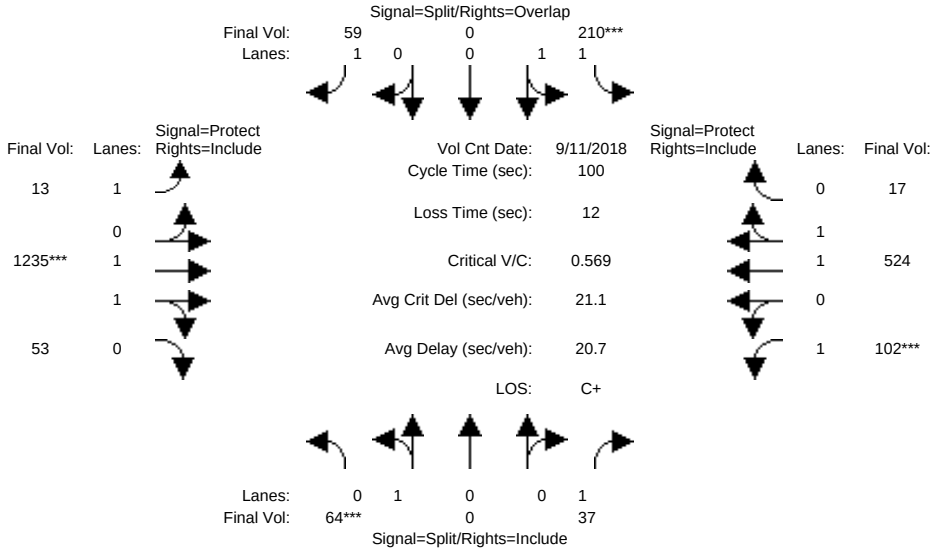
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	100	0	48	34	0	10	48	501	14	27	1009	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	0	48	34	0	10	48	501	14	27	1009	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	0	48	34	0	10	48	501	14	27	1009	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	0	48	34	0	10	48	501	14	27	1009	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	48	34	0	10	48	501	14	27	1009	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	0	48	34	0	10	48	501	14	27	1009	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.94	0.06	1.00	1.81	0.19
Final Sat.:	1800	0	1750	3550	0	1750	1750	3599	101	1750	3351	349
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.03	0.01	0.00	0.01	0.03	0.14	0.14	0.02	0.30	0.30
Crit Moves:	****			****			****				****	
Green Time:	11.1	0.0	11.1	10.0	0.0	17.0	7.0	44.5	44.5	22.4	59.9	59.9
Volume/Cap:	0.50	0.00	0.25	0.10	0.00	0.03	0.39	0.31	0.31	0.07	0.50	0.50
Uniform Del:	41.9	0.0	40.7	40.9	0.0	34.6	44.5	17.9	17.9	30.6	11.5	11.5
IncremntDel:	2.0	0.0	0.7	0.1	0.0	0.0	2.1	0.1	0.1	0.1	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.9	0.0	41.3	41.0	0.0	34.7	46.5	18.0	18.0	30.7	11.7	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	0.0	41.3	41.0	0.0	34.7	46.5	18.0	18.0	30.7	11.7	11.7
LOS by Move:	D	A	D	D	A	C-	D	B	B	C	B+	B+
HCM2kAvgQ:	4	0	2	1	0	0	2	5	5	1	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



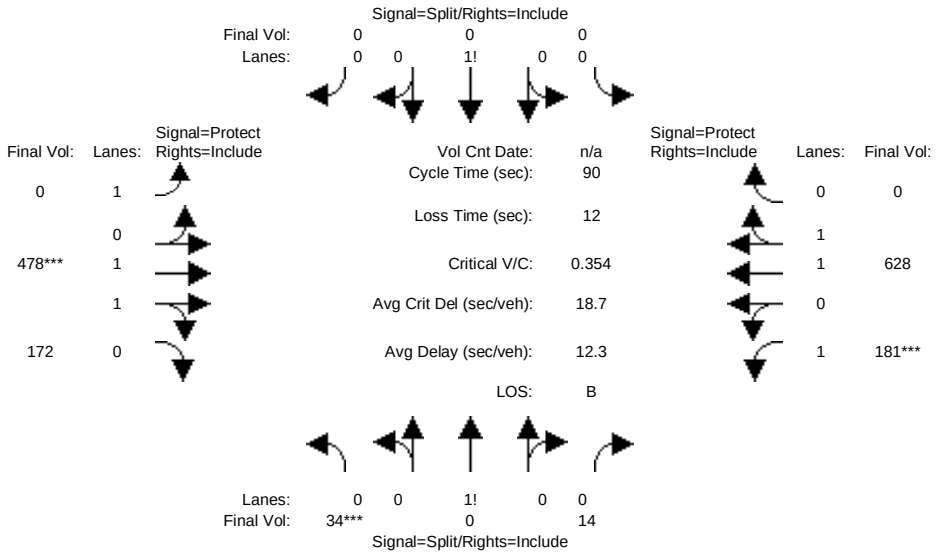
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	64	0	37	210	0	59	13	1235	53	102	524	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	0	37	210	0	59	13	1235	53	102	524	17
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	0	37	210	0	59	13	1235	53	102	524	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	0	37	210	0	59	13	1235	53	102	524	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	0	37	210	0	59	13	1235	53	102	524	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	0	37	210	0	59	13	1235	53	102	524	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.97	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.92	0.08	1.00	1.94	0.06
Final Sat.:	1800	0	1750	3550	0	1750	1750	3548	152	1750	3584	116
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.06	0.00	0.03	0.01	0.35	0.35	0.06	0.15	0.15
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	10.0	10.0	0.0	32.0	22.0	58.2	58.2	9.8	46.0	46.0
Volume/Cap:	0.36	0.00	0.21	0.59	0.00	0.11	0.03	0.60	0.60	0.60	0.32	0.32
Uniform Del:	42.0	0.0	41.4	43.0	0.0	23.9	30.6	13.4	13.4	43.2	17.1	17.1
IncremntDel:	1.2	0.0	0.6	2.7	0.0	0.1	0.0	0.5	0.5	5.7	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	0.0	42.0	45.7	0.0	24.0	30.7	13.8	13.8	49.0	17.2	17.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	0.0	42.0	45.7	0.0	24.0	30.7	13.8	13.8	49.0	17.2	17.2
LOS by Move:	D	A	D	D	A	C	C	B	B	D	B	B
HCM2kAvgQ:	2	0	1	4	0	1	0	13	13	3	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



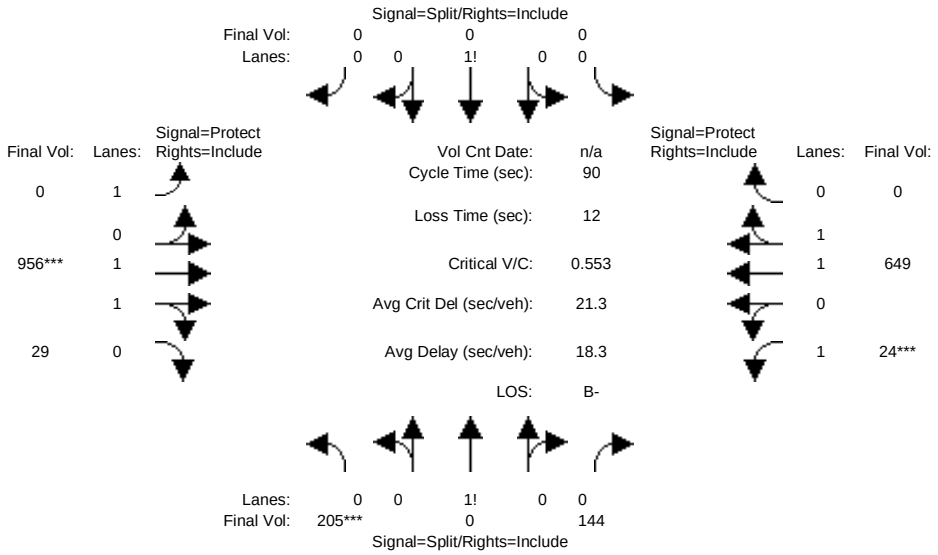
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	0	14	0	0	0	0	478	172	181	628	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	14	0	0	0	0	478	172	181	628	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	14	0	0	0	0	478	172	181	628	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	14	0	0	0	0	478	172	181	628	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	14	0	0	0	0	478	172	181	628	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	14	0	0	0	0	478	172	181	628	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.97	0.92
Lanes:	0.71	0.00	0.29	0.00	1.00	0.00	1.00	1.46	0.54	1.00	2.00	0.00
Final Sat.:	1240	0	510	0	1750	0	1750	2720	979	1750	3700	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.18	0.18	0.10	0.17	0.00
Crit Moves:	****							****		****		
Green Time:	10.0	0.0	10.0	0.0	0.0	0.0	0.0	42.8	42.8	25.2	68.0	0.0
Volume/Cap:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.37	0.37	0.37	0.22	0.00
Uniform Del:	36.6	0.0	36.6	0.0	0.0	0.0	0.0	15.0	15.0	26.0	3.2	0.0
IncremntDel:	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	37.2	0.0	37.2	0.0	0.0	0.0	0.0	15.1	15.1	26.5	3.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	0.0	37.2	0.0	0.0	0.0	0.0	15.1	15.1	26.5	3.3	0.0
LOS by Move:	D+	A	D+	A	A	A	A	B	B	C	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	6	6	4	3	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



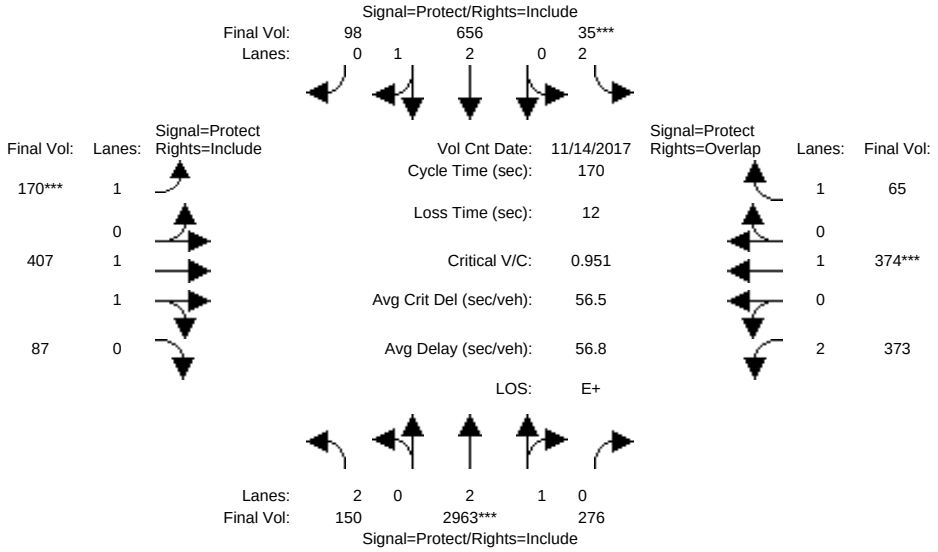
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	0	144	0	0	0	0	956	29	24	649	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	0	144	0	0	0	0	956	29	24	649	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	0	144	0	0	0	0	956	29	24	649	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	0	144	0	0	0	0	956	29	24	649	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	0	144	0	0	0	0	956	29	24	649	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	0	144	0	0	0	0	956	29	24	649	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.95	0.92	0.97	0.92
Lanes:	0.59	0.00	0.41	0.00	1.00	0.00	1.00	1.94	0.06	1.00	2.00	0.00
Final Sat.:	1028	0	722	0	1750	0	1750	3591	109	1750	3700	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.27	0.27	0.01	0.18	0.00
Crit Moves:	****							****		****		
Green Time:	30.4	0.0	30.4	0.0	0.0	0.0	0.0	40.6	40.6	7.0	47.6	0.0
Volume/Cap:	0.59	0.00	0.59	0.00	0.00	0.00	0.00	0.59	0.59	0.18	0.33	0.00
Uniform Del:	24.6	0.0	24.6	0.0	0.0	0.0	0.0	18.5	18.5	38.8	12.1	0.0
IncremntDel:	1.6	0.0	1.6	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	26.2	0.0	26.2	0.0	0.0	0.0	0.0	19.0	19.0	39.4	12.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	26.2	0.0	0.0	0.0	0.0	19.0	19.0	39.4	12.2	0.0
LOS by Move:	C	A	C	A	A	A	A	B-	B-	D	B	A
HCM2kAvgQ:	9	0	9	0	0	0	0	10	10	1	5	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



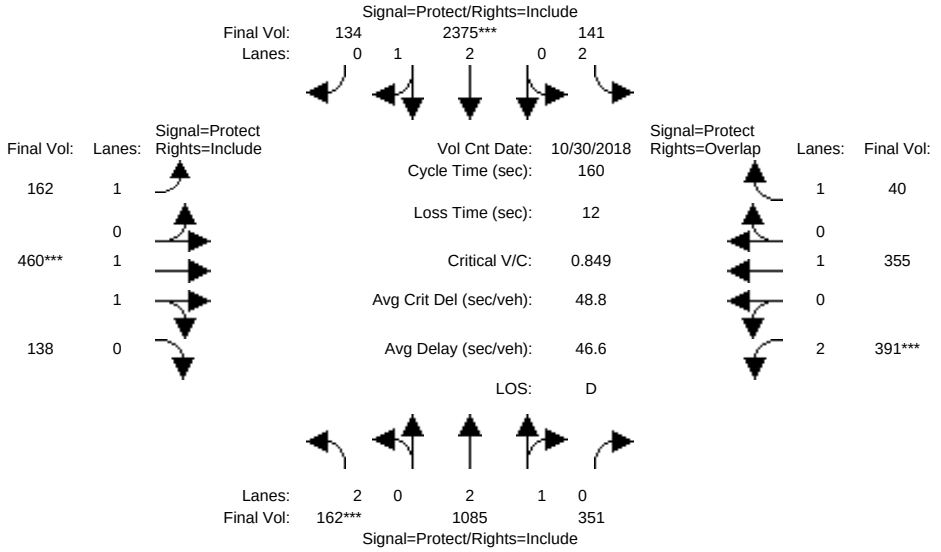
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	150	2963	276	35	656	98	170	407	87	373	374	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	2963	276	35	656	98	170	407	87	373	374	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2963	276	35	656	98	170	407	87	373	374	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	2963	276	35	656	98	170	407	87	373	374	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	2963	276	35	656	98	170	407	87	373	374	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	2963	276	35	656	98	170	407	87	373	374	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.73	0.27	2.00	2.60	0.40	1.00	1.64	0.36	2.00	1.00	1.00
Final Sat.:	3150	5122	477	3150	4871	728	1750	3048	652	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.58	0.58	0.01	0.13	0.13	0.10	0.13	0.13	0.12	0.20	0.04
Crit Moves:		****		****			****				****	
Green Time:	28.0	100	100.1	7.0	79.1	79.1	16.8	27.0	27.0	23.9	34.1	41.1
Volume/Cap:	0.29	0.98	0.98	0.27	0.29	0.29	0.98	0.84	0.84	0.84	0.98	0.15
Uniform Del:	62.3	34.1	34.1	79.0	28.1	28.1	76.4	69.4	69.4	71.2	67.7	50.8
IncremntDel:	0.3	11.8	11.8	1.1	0.1	0.1	62.9	10.6	10.6	13.6	41.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	62.6	45.9	45.9	80.1	28.1	28.1	139.4	80.1	80.1	84.8	109	50.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.6	45.9	45.9	80.1	28.1	28.1	139.4	80.1	80.1	84.8	109	50.9
LOS by Move:	E	D	D	F	C	C	F	F	F	F	F	D
HCM2kAvgQ:	4	62	62	1	8	8	13	15	15	12	21	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



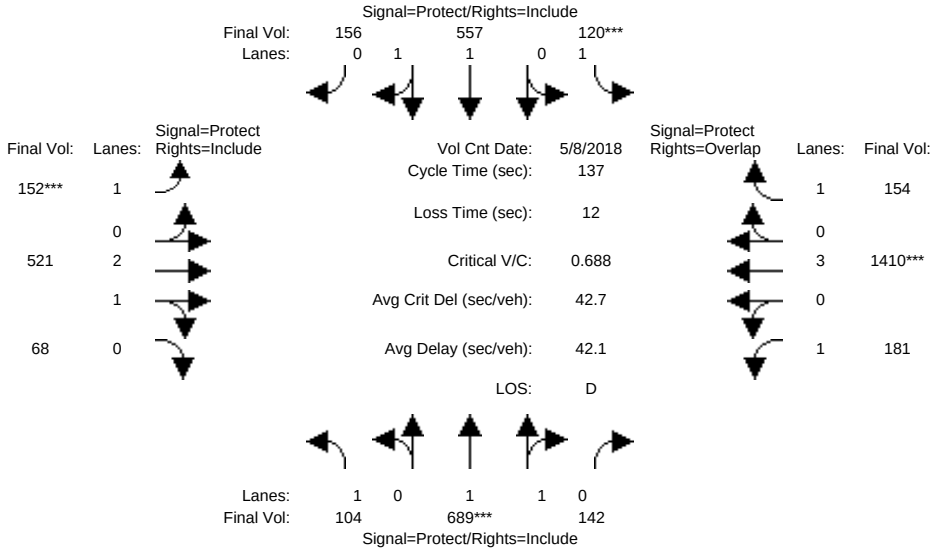
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	162	1085	351	141	2375	134	162	460	138	391	355	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	1085	351	141	2375	134	162	460	138	391	355	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	1085	351	141	2375	134	162	460	138	391	355	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	1085	351	141	2375	134	162	460	138	391	355	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	1085	351	141	2375	134	162	460	138	391	355	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	1085	351	141	2375	134	162	460	138	391	355	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.24	0.76	2.00	2.83	0.17	1.00	1.53	0.47	2.00	1.00	1.00
Final Sat.:	3150	4229	1368	3150	5301	299	1750	2846	854	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.26	0.04	0.45	0.45	0.09	0.16	0.16	0.12	0.19	0.02
Crit Moves:	****				****			****			****	
Green Time:	9.7	80.2	80.2	14.0	84.4	84.4	17.8	30.5	30.5	23.4	36.0	50.0
Volume/Cap:	0.85	0.51	0.51	0.51	0.85	0.85	0.83	0.85	0.85	0.85	0.83	0.07
Uniform Del:	74.4	26.8	26.8	69.7	32.3	32.3	69.6	62.5	62.5	66.6	59.1	38.7
IncremntDel:	28.4	0.2	0.2	1.6	2.5	2.5	24.8	9.5	9.5	13.8	12.8	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	102.8	27.0	27.0	71.4	34.8	34.8	94.4	72.1	72.1	80.4	71.9	38.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	102.8	27.0	27.0	71.4	34.8	34.8	94.4	72.1	72.1	80.4	71.9	38.8
LOS by Move:	F	C	C	E	C-	C-	F	E	E	F	E	D+
HCM2kAvgQ:	5	16	16	4	37	37	11	17	17	12	17	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



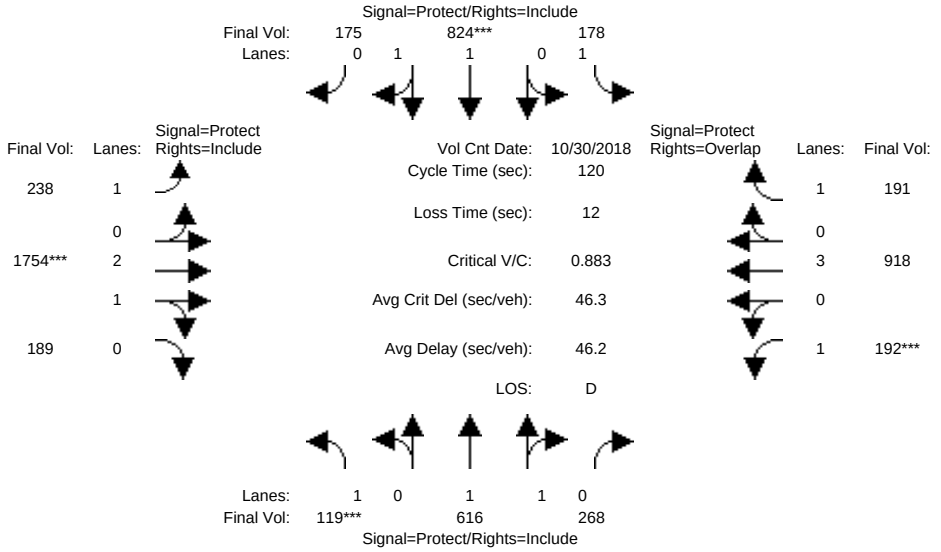
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	104	689	142	120	557	156	152	521	68	181	1410	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	689	142	120	557	156	152	521	68	181	1410	154
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	689	142	120	557	156	152	521	68	181	1410	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	689	142	120	557	156	152	521	68	181	1410	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	689	142	120	557	156	152	521	68	181	1410	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	689	142	120	557	156	152	521	68	181	1410	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.65	0.35	1.00	1.55	0.45	1.00	2.64	0.36	1.00	3.00	1.00
Final Sat.:	1750	3067	632	1750	2890	809	1750	4953	646	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.22	0.22	0.07	0.19	0.19	0.09	0.11	0.11	0.10	0.25	0.09
Crit Moves:		****		****			****				****	
Green Time:	13.8	44.8	44.8	13.7	44.6	44.6	17.3	33.6	33.6	33.0	49.3	62.9
Volume/Cap:	0.59	0.69	0.69	0.69	0.59	0.59	0.69	0.43	0.43	0.43	0.69	0.19
Uniform Del:	58.9	40.1	40.1	59.6	38.6	38.6	57.3	43.6	43.6	44.0	37.3	21.9
IncremntDel:	5.3	1.7	1.7	11.0	0.8	0.8	8.8	0.2	0.2	0.7	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.2	41.7	41.7	70.6	39.3	39.3	66.0	43.8	43.8	44.7	38.3	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.2	41.7	41.7	70.6	39.3	39.3	66.0	43.8	43.8	44.7	38.3	22.1
LOS by Move:	E	D	D	E	D	D	E	D	D	D	D+	C+
HCM2kAvgQ:	4	14	14	5	13	13	7	7	7	7	16	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



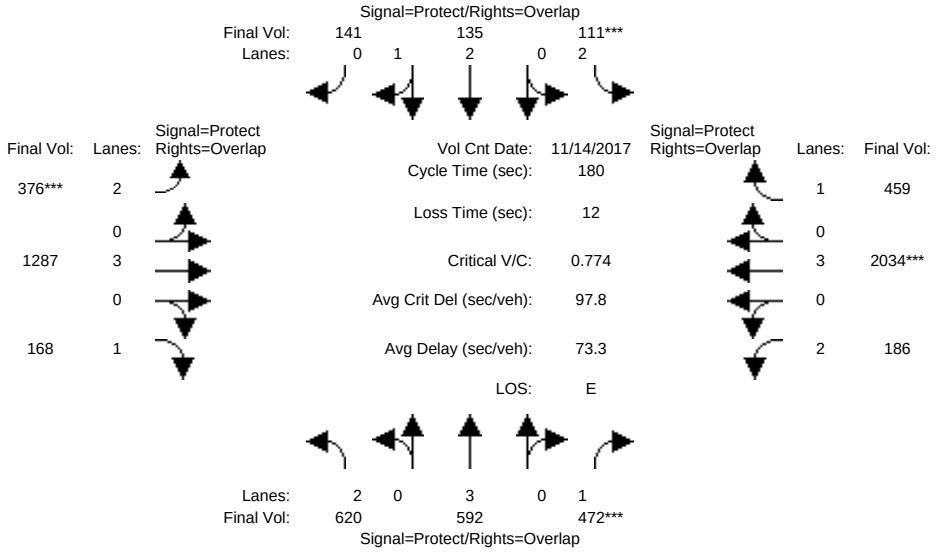
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	119	616	268	178	824	175	238	1754	189	192	918	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	616	268	178	824	175	238	1754	189	192	918	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	616	268	178	824	175	238	1754	189	192	918	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	616	268	178	824	175	238	1754	189	192	918	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	616	268	178	824	175	238	1754	189	192	918	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	616	268	178	824	175	238	1754	189	192	918	191
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.38	0.62	1.00	1.64	0.36	1.00	2.70	0.30	1.00	3.00	1.00
Final Sat.:	1750	2577	1121	1750	3051	648	1750	5055	545	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.24	0.10	0.27	0.27	0.14	0.35	0.35	0.11	0.16	0.11
Crit Moves:	****				****			****			****	
Green Time:	9.2	32.2	32.2	13.7	36.7	36.7	28.4	47.2	47.2	14.9	33.6	47.4
Volume/Cap:	0.88	0.89	0.89	0.89	0.88	0.88	0.57	0.88	0.88	0.88	0.57	0.28
Uniform Del:	54.8	42.2	42.2	52.4	39.6	39.6	40.5	33.9	33.9	51.7	37.0	24.7
IncremntDel:	44.5	10.0	10.0	35.1	8.4	8.4	2.0	4.6	4.6	31.7	0.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	99.3	52.2	52.2	87.5	48.0	48.0	42.4	38.5	38.5	83.4	37.5	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	99.3	52.2	52.2	87.5	48.0	48.0	42.4	38.5	38.5	83.4	37.5	24.9
LOS by Move:	F	D-	D-	F	D	D	D	D+	D+	F	D+	C
HCM2kAvgQ:	5	17	17	8	19	19	8	24	24	9	9	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



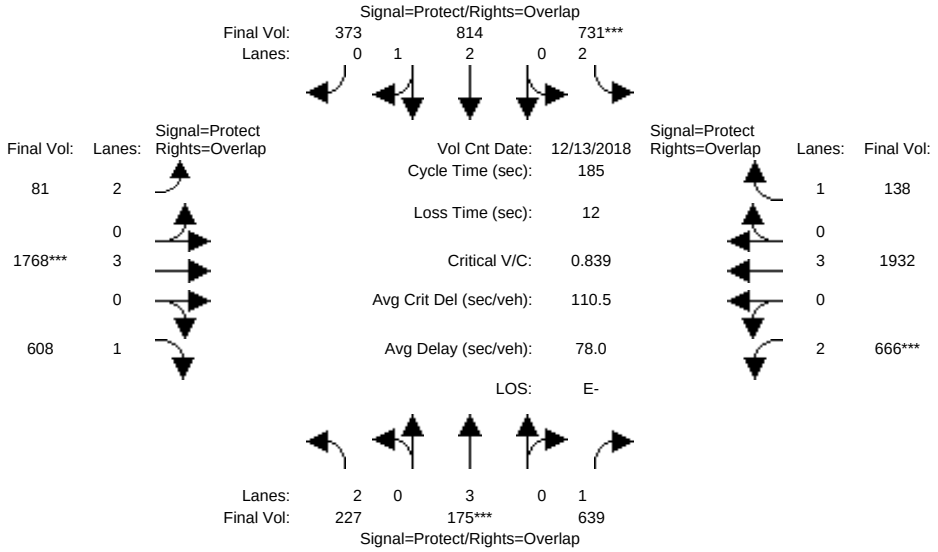
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	620	592	472	111	135	141	376	1287	168	186	2034	459
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	620	592	472	111	135	141	376	1287	168	186	2034	459
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	620	592	472	111	135	141	376	1287	168	186	2034	459
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	620	592	472	111	135	141	376	1287	168	186	2034	459
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	620	592	472	111	135	141	376	1287	168	186	2034	459
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	620	592	472	111	135	141	376	1287	168	186	2034	459
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.10	0.27	0.04	0.04	0.08	0.12	0.23	0.10	0.06	0.36	0.26
Crit Moves:			****	****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.91	0.32	0.63	0.54	0.20	0.32	1.68	0.61	0.16	0.57	0.88	0.56
Uniform Del:	68.9	46.1	40.6	81.4	63.0	55.1	83.6	46.0	17.0	76.8	49.6	34.3
IncremntDel:	16.4	0.1	1.8	2.8	0.1	0.2	324.2	0.5	0.1	2.4	4.4	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.3	46.2	42.4	84.2	63.1	55.4	407.8	46.5	17.0	79.2	54.0	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.3	46.2	42.4	84.2	63.1	55.4	407.8	46.5	17.0	79.2	54.0	35.1
LOS by Move:	F	D	D	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	22	8	22	4	3	7	25	19	4	7	37	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



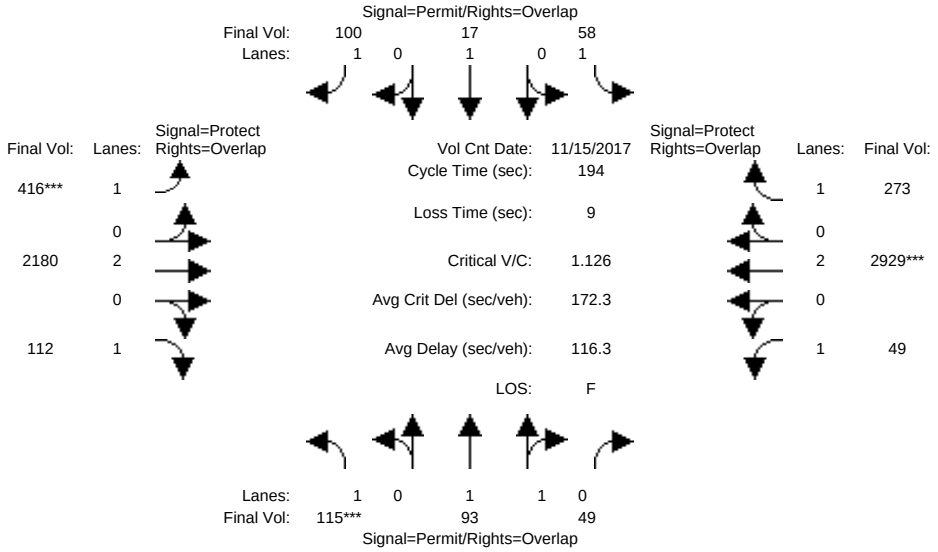
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	227	175	639	731	814	373	81	1768	608	666	1932	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	175	639	731	814	373	81	1768	608	666	1932	138
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	227	175	639	731	814	373	81	1768	608	666	1932	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	175	639	731	814	373	81	1768	608	666	1932	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	175	639	731	814	373	81	1768	608	666	1932	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	227	175	639	731	814	373	81	1768	608	666	1932	138
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.02	0.98	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3838	1759	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.37	0.23	0.21	0.21	0.03	0.31	0.35	0.21	0.34	0.08
Crit Moves:		****		****				****		****		
Green Time:	18.6	37.0	80.0	39.8	58.2	67.3	9.1	53.2	71.8	43.0	87.1	126.9
Volume/Cap:	0.72	0.15	0.84	1.08	0.67	0.58	0.52	1.08	0.89	0.91	0.72	0.11
Uniform Del:	80.6	61.1	46.9	72.6	55.2	47.5	85.8	65.9	53.1	69.1	39.2	9.9
IncremntDel:	7.6	0.1	8.6	57.7	1.0	0.4	3.2	46.8	14.4	15.4	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.13	1.02	1.21	1.61
Delay/Veh:	88.2	61.1	55.6	130.3	56.2	48.0	89.0	116	74.2	86.1	48.2	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.2	61.1	55.6	130.3	56.2	48.0	89.0	116	74.2	86.1	48.2	16.0
LOS by Move:	F	E	E+	F	E+	D	F	F	E	F	D	B
HCM2kAvgQ:	8	3	36	32	20	18	3	42	38	25	32	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



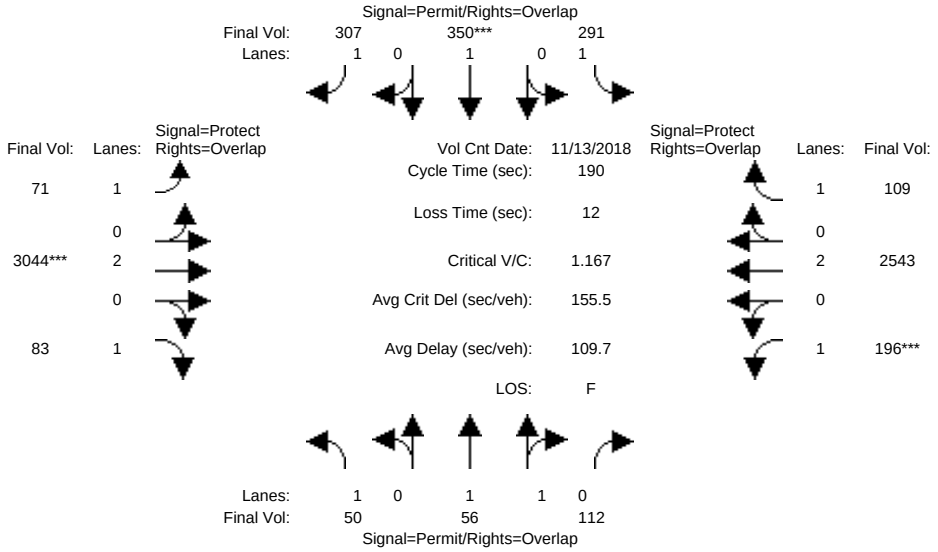
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	115	93	49	58	17	100	416	2180	112	49	2929	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	93	49	58	17	100	416	2180	112	49	2929	273
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	93	49	58	17	100	416	2180	112	49	2929	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	93	49	58	17	100	416	2180	112	49	2929	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	93	49	58	17	100	416	2180	112	49	2929	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	93	49	58	17	100	416	2180	112	49	2929	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	2422	1276	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.04	0.03	0.01	0.06	0.24	0.57	0.06	0.03	0.77	0.16
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.54	0.31	0.20	0.27	0.07	0.19	1.34	0.81	0.09	0.38	1.27	0.26
Uniform Del:	80.0	77.7	65.3	77.1	75.2	50.3	79.8	19.1	8.7	85.7	38.1	17.7
IncremntDel:	2.7	0.4	0.1	0.7	0.1	0.2	171.9	1.9	0.0	1.9	125	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	52.2	22.9	87.6	163	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	52.2	22.9	87.6	163	17.9
LOS by Move:	F	E-	E	E-	E-	D	F	D-	C+	F	F	B
HCM2kAvgQ:	7	4	3	3	1	5	42	59	5	3	119	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



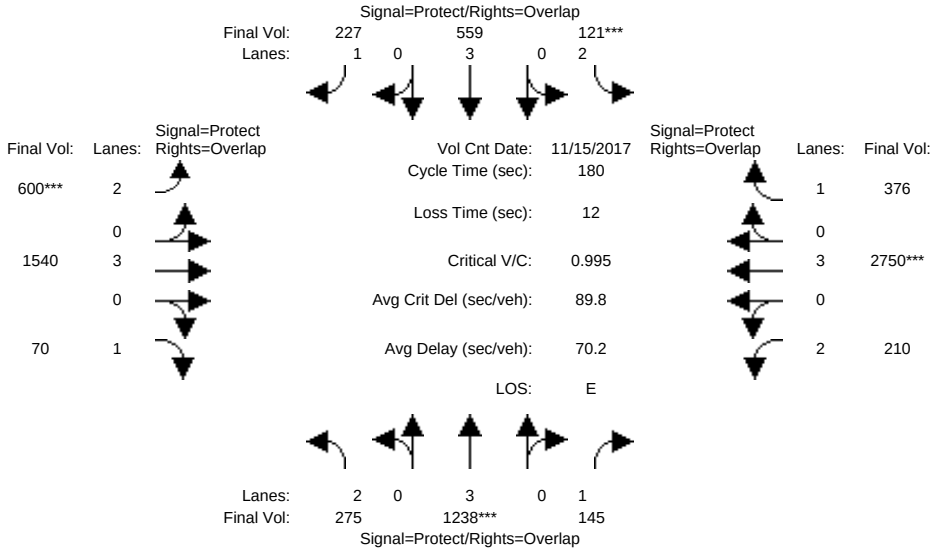
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	50	56	112	291	350	307	71	3044	83	196	2543	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	56	112	291	350	307	71	3044	83	196	2543	109
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	56	112	291	350	307	71	3044	83	196	2543	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	56	112	291	350	307	71	3044	83	196	2543	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	56	112	291	350	307	71	3044	83	196	2543	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	56	112	291	350	307	71	3044	83	196	2543	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.17	0.18	0.18	0.04	0.80	0.05	0.11	0.67	0.06
Crit Moves:					****			****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.15	0.15	0.23	0.86	0.95	0.68	0.63	1.22	0.07	1.26	0.98	0.09
Uniform Del:	67.7	67.8	55.6	78.9	80.6	67.5	92.2	34.5	12.4	92.0	30.6	10.8
IncremntDel:	0.2	0.1	0.2	19.6	35.0	4.2	11.0	101	0.0	157.1	13.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	154	18.9	249.1	62.2	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	154	18.9	249.1	62.2	17.3
LOS by Move:	E	E	E+	F	F	E	F	F	B-	F	E	B
HCM2kAvgQ:	3	3	5	20	23	18	6	124	3	19	81	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



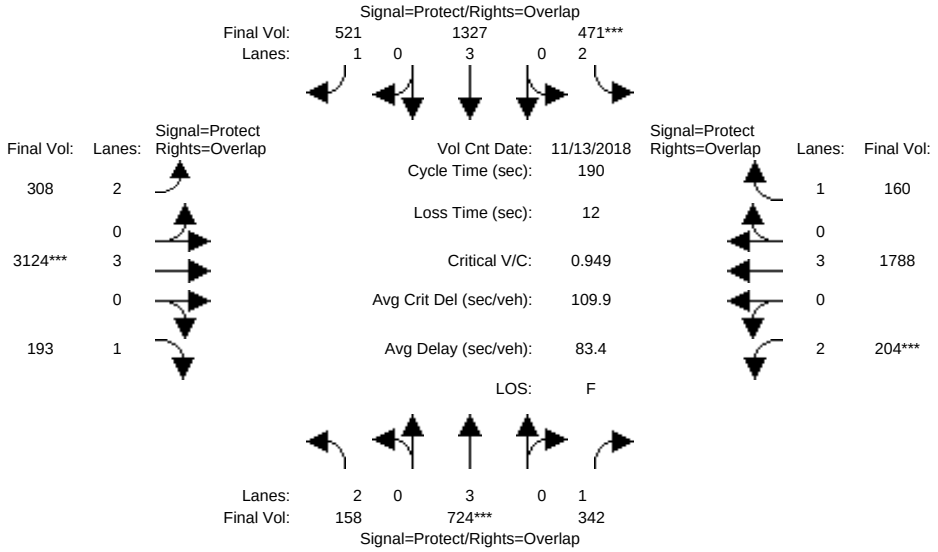
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	1238	145	121	559	227	600	1540	70	210	2750	376
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	1238	145	121	559	227	600	1540	70	210	2750	376
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.22	0.08	0.04	0.10	0.13	0.19	0.27	0.04	0.07	0.48	0.21
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.80	0.97	0.26	0.50	0.51	0.39	1.33	0.50	0.06	0.73	0.98	0.38
Uniform Del:	78.2	69.4	46.1	79.7	65.1	45.7	77.1	26.0	11.5	79.7	45.0	21.4
IncremntDel:	12.3	18.9	0.3	1.6	0.4	0.4	162.8	0.1	0.0	9.3	13.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	90.5	88.3	46.4	81.3	65.5	46.1	239.9	26.1	11.5	88.9	58.2	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.5	88.3	46.4	81.3	65.5	46.1	239.9	26.1	11.5	88.9	58.2	21.6
LOS by Move:	F	F	D	F	E	D	F	C	B+	F	E+	C+
HCM2kAvgQ:	9	23	6	4	9	10	30	17	1	8	55	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



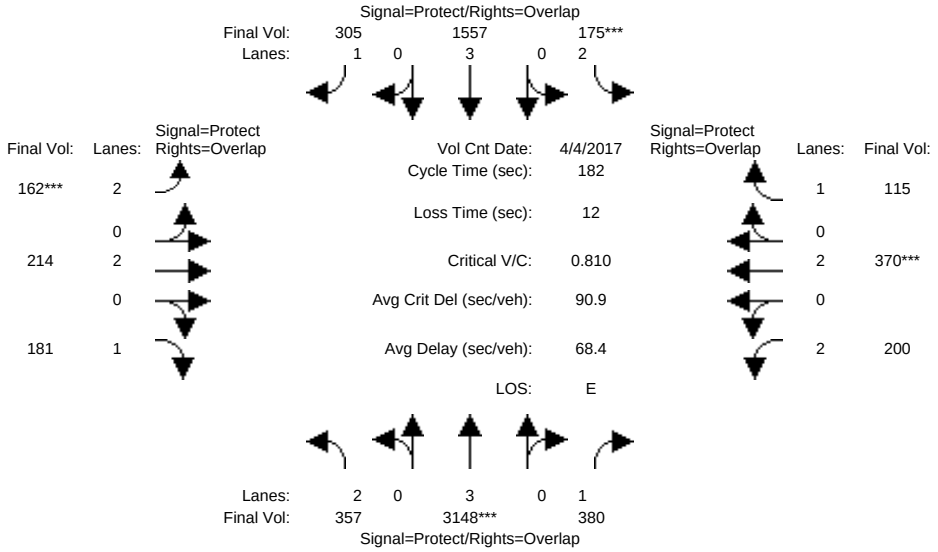
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	724	342	471	1327	521	308	3124	193	204	1788	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	724	342	471	1327	521	308	3124	193	204	1788	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.20	0.15	0.23	0.30	0.10	0.55	0.11	0.06	0.31	0.09
Crit Moves:		****		****				****		****		
Green Time:	16.7	39.0	53.0	26.8	49.1	66.3	17.2	98.2	114.9	14.0	95.0	121.8
Volume/Cap:	0.57	0.62	0.70	1.06	0.90	0.85	1.08	1.06	0.18	0.88	0.63	0.14
Uniform Del:	83.2	68.7	61.4	81.6	68.1	57.3	86.4	45.9	16.7	87.2	34.6	13.5
IncremntDel:	2.9	1.0	4.5	59.6	7.9	11.2	76.1	35.4	0.1	29.5	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.71	2.02	1.00	0.77	0.47
Delay/Veh:	86.1	69.8	65.9	141.2	76.0	68.5	168.2	114	33.8	116.6	27.0	6.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.1	69.8	65.9	141.2	76.0	68.5	168.2	114	33.8	116.6	27.0	6.3
LOS by Move:	F	E	E	F	E-	E	F	F	C-	F	C	A
HCM2kAvgQ:	5	12	19	20	26	31	12	64	9	9	20	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



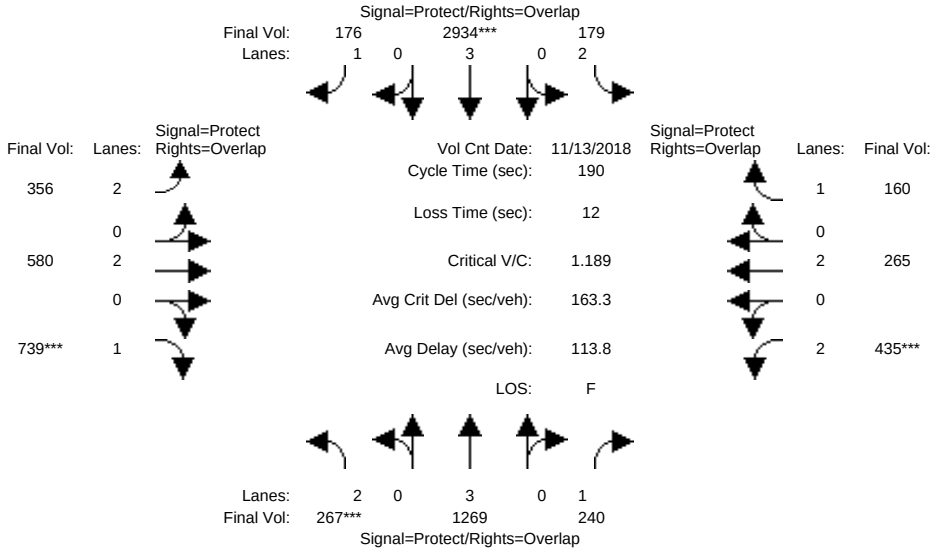
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	357	3618	380	175	1790	305	162	214	181	200	370	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	357	3618	380	175	1790	305	162	214	181	200	370	115
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	357	3618	380	175	1790	305	162	214	181	200	370	115
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	357	3148	380	175	1557	305	162	214	181	200	370	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	357	3148	380	175	1557	305	162	214	181	200	370	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	357	3148	380	175	1557	305	162	214	181	200	370	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.55	0.22	0.06	0.27	0.17	0.05	0.06	0.11	0.06	0.10	0.07
Crit Moves:		****			****			****			****	
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.88	1.07	0.36	0.59	0.57	0.31	0.60	0.32	0.37	0.77	0.57	0.25
Uniform Del:	77.9	44.0	18.7	79.1	33.8	20.8	80.2	65.6	49.7	81.8	69.1	52.5
IncremntDel:	19.6	38.7	0.2	3.2	0.3	0.2	3.7	0.3	0.5	13.2	1.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	97.5	94.2	26.3	82.2	27.2	13.7	83.9	65.9	50.2	95.0	70.3	52.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.5	94.2	26.3	82.2	27.2	13.7	83.9	65.9	50.2	95.0	70.3	52.8
LOS by Move:	F	F	C	F	C	B	F	E	D	F	E	D-
HCM2kAvgQ:	14	69	15	5	16	6	5	5	8	7	9	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



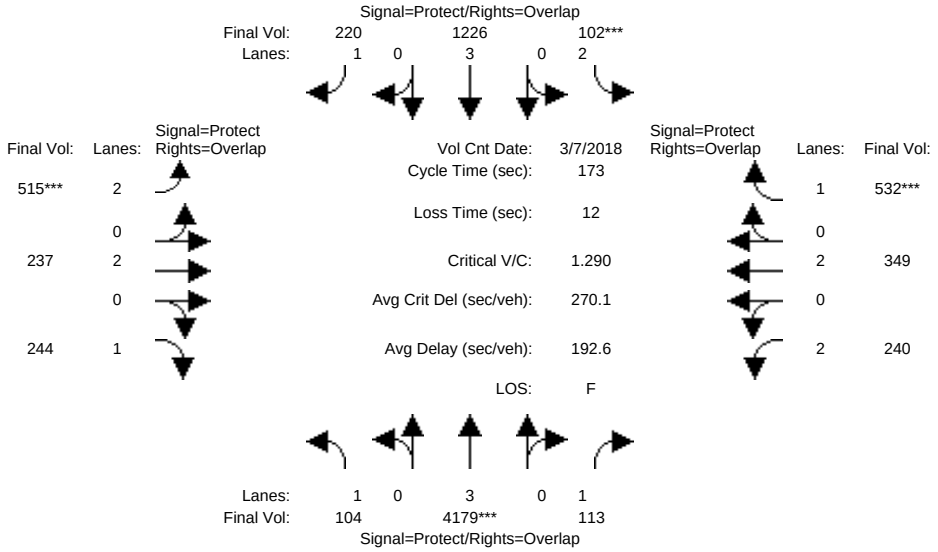
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	267	1894	240	179	3667	176	356	580	739	435	265	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	1894	240	179	3667	176	356	580	739	435	265	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	1894	240	179	3667	176	356	580	739	435	265	160
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	267	1269	240	179	2934	176	356	580	739	435	265	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	1269	240	179	2934	176	356	580	739	435	265	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	267	1269	240	179	2934	176	356	580	739	435	265	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.14	0.06	0.51	0.10	0.11	0.15	0.46	0.14	0.07	0.09
Crit Moves:	****				****				****	****		
Green Time:	22.0	86.0	110.0	15.0	79.0	107.4	28.4	53.0	75.0	24.0	48.6	63.6
Volume/Cap:	0.73	0.49	0.24	0.72	1.24	0.18	0.76	0.55	1.17	1.09	0.27	0.27
Uniform Del:	81.2	36.6	19.5	85.4	55.5	19.9	77.4	58.3	57.5	83.0	56.6	46.3
IncremntDel:	7.4	0.1	0.1	9.8	111	0.1	6.9	0.6	92.4	72.6	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.6	30.6	12.3	95.2	175	26.7	84.3	58.9	149.9	155.6	56.7	46.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.6	30.6	12.3	95.2	175	26.7	84.3	58.9	149.9	155.6	56.7	46.6
LOS by Move:	F	C	B	F	F	C	F	E+	F	F	E+	D
HCM2kAvgQ:	10	14	4	6	76	7	12	14	61	19	6	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



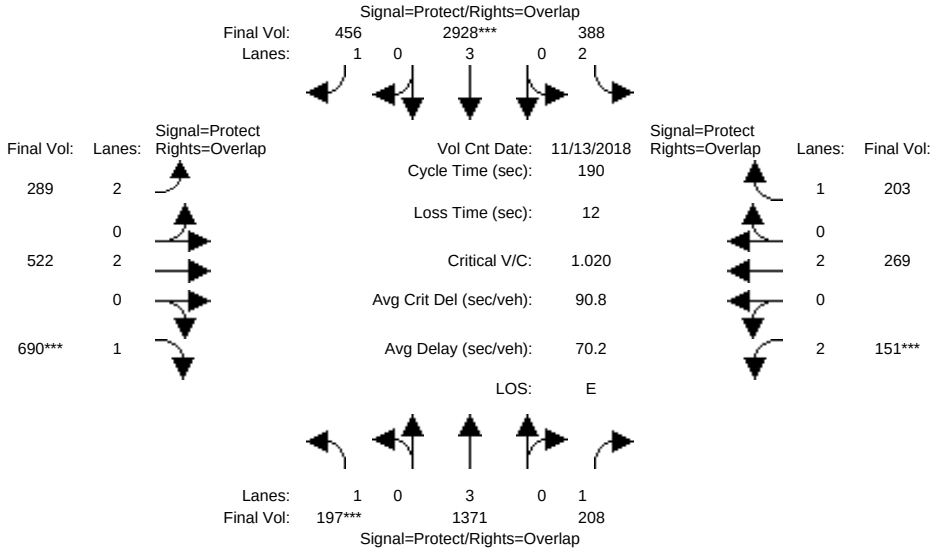
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	104	4804	113	102	1409	220	515	237	244	240	349	532
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	4804	113	102	1409	220	515	237	244	240	349	532
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	4804	113	102	1409	220	515	237	244	240	349	532
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	4179	113	102	1226	220	515	237	244	240	349	532
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	4179	113	102	1226	220	515	237	244	240	349	532
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	4179	113	102	1226	220	515	237	244	240	349	532
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.73	0.06	0.03	0.22	0.13	0.16	0.06	0.14	0.08	0.09	0.30
Crit Moves:		****		****			****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	0.73	1.58	0.11	0.42	0.47	0.21	1.22	0.28	0.46	0.76	0.49	1.15
Uniform Del:	77.6	46.3	17.5	76.3	32.1	16.3	75.0	55.8	48.7	75.8	62.8	63.6
IncremntDel:	17.3	261	0.1	1.2	0.1	0.1	120.6	0.2	0.6	10.4	0.5	90.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	94.9	299	11.4	77.5	26.5	9.7	195.6	56.0	49.3	86.3	63.3	153.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	94.9	299	11.4	77.5	26.5	9.7	195.6	56.0	49.3	86.3	63.3	153.8
LOS by Move:	F	F	B+	E-	C	A	F	E+	D	F	E	F
HCM2kAvgQ:	6	132	2	3	11	3	24	5	11	8	8	40

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



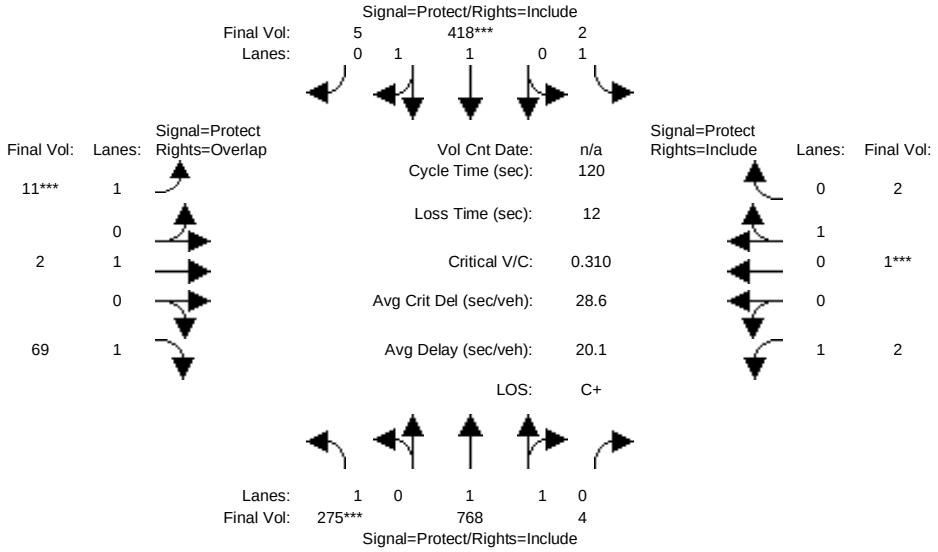
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	197	1693	208	388	4067	456	289	522	690	151	269	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	1693	208	388	4067	456	289	522	690	151	269	203
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	1693	208	388	4067	456	289	522	690	151	269	203
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	197	1371	208	388	2928	456	289	522	690	151	269	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	1371	208	388	2928	456	289	522	690	151	269	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	197	1371	208	388	2928	456	289	522	690	151	269	203
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.24	0.12	0.12	0.51	0.26	0.09	0.14	0.39	0.05	0.07	0.12
Crit Moves:	****				****				****	****		
Green Time:	18.3	91.0	105.0	27.3	100	120.2	20.2	45.7	64.0	14.0	39.5	66.8
Volume/Cap:	1.17	0.50	0.22	0.86	0.98	0.41	0.86	0.57	1.17	0.65	0.34	0.33
Uniform Del:	85.9	34.0	21.6	79.5	43.8	17.3	83.5	63.5	63.0	85.6	64.2	45.2
IncremntDel:	122.7	0.1	0.1	15.0	11.4	0.3	19.7	0.9	93.9	6.4	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.68	1.00	1.27	1.46	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	208.5	27.3	14.7	94.4	67.3	25.6	103.2	64.4	156.9	92.0	64.4	45.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	208.5	27.3	14.7	94.4	67.3	25.6	103.2	64.4	156.9	92.0	64.4	45.5
LOS by Move:	F	C	B	F	E	C	F	E	F	F	E	D
HCM2kAvgQ:	17	14	4	12	53	18	11	13	57	5	6	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM (Intuitive)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



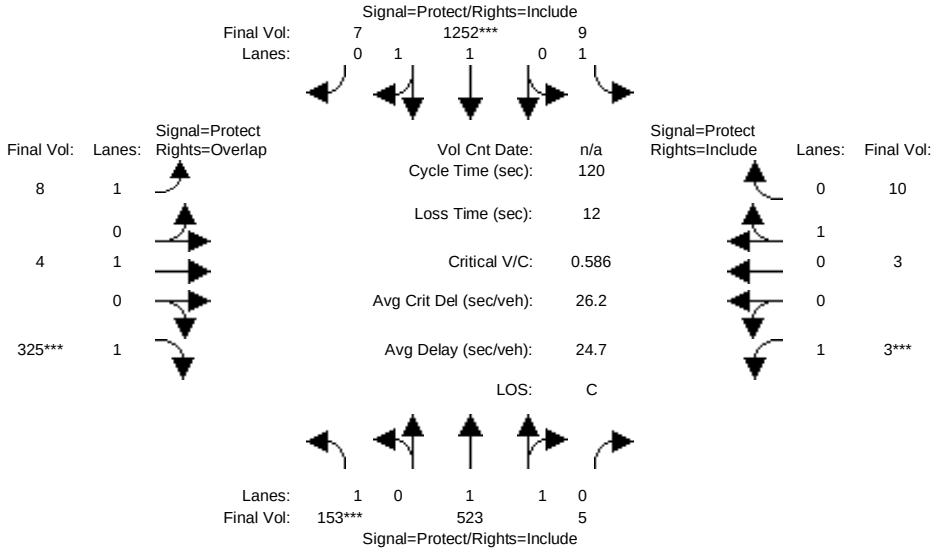
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	275	768	4	2	418	5	11	2	69	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	768	4	2	418	5	11	2	69	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	768	4	2	418	5	11	2	69	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	768	4	2	418	5	11	2	69	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	768	4	2	418	5	11	2	69	2	1	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	768	4	2	418	5	11	2	69	2	1	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.99	0.01	1.00	1.98	0.02	1.00	1.00	1.00	1.00	0.33	0.67
Final Sat.:	1750	3681	19	1750	3656	44	1750	1900	1750	1750	600	1200
Capacity Analysis Module:												
Vol/Sat:	0.16	0.21	0.21	0.00	0.11	0.11	0.01	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****				****		****				****	
Green Time:	52.7	71.1	71.1	19.9	38.3	38.3	7.0	10.0	62.7	7.0	10.0	10.0
Volume/Cap:	0.36	0.35	0.35	0.01	0.36	0.36	0.11	0.01	0.08	0.02	0.02	0.02
Uniform Del:	22.4	12.6	12.6	41.8	31.4	31.4	53.5	50.5	14.3	53.3	50.5	50.5
IncremntDel:	0.3	0.1	0.1	0.0	0.2	0.2	0.5	0.0	0.0	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	22.7	12.7	12.7	41.8	31.6	31.6	54.0	50.5	14.3	53.3	50.6	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.7	12.7	12.7	41.8	31.6	31.6	54.0	50.5	14.3	53.3	50.6	50.6
LOS by Move:	C+	B	B	D	C	C	D-	D	B	D-	D	D
HCM2kAvgQ:	7	7	7	0	6	6	0	0	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM (Intuitive)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



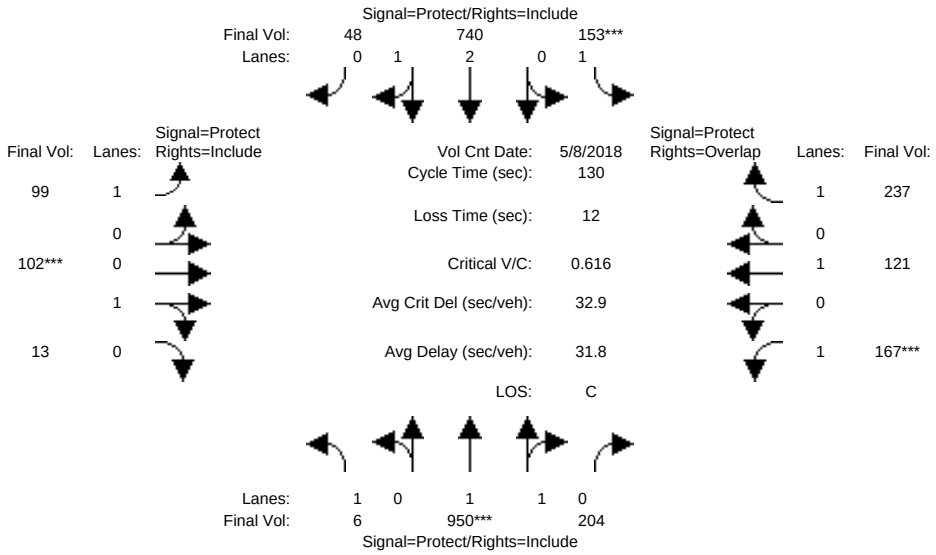
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	153	523	5	9	1252	7	8	4	325	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	523	5	9	1252	7	8	4	325	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	523	5	9	1252	7	8	4	325	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	523	5	9	1252	7	8	4	325	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	523	5	9	1252	7	8	4	325	3	3	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	153	523	5	9	1252	7	8	4	325	3	3	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.98	0.02	1.00	1.99	0.01	1.00	1.00	1.00	1.00	0.23	0.77
Final Sat.:	1750	3665	35	1750	3679	21	1750	1900	1750	1750	415	1385
Capacity Analysis Module:												
Vol/Sat:	0.09	0.14	0.14	0.01	0.34	0.34	0.00	0.00	0.19	0.00	0.01	0.01
Crit Moves:	****				****				****	****		
Green Time:	16.8	58.3	58.3	23.8	65.3	65.3	10.7	18.9	35.7	7.0	15.2	15.2
Volume/Cap:	0.62	0.29	0.29	0.03	0.62	0.62	0.05	0.01	0.62	0.03	0.06	0.06
Uniform Del:	48.6	18.5	18.5	38.7	18.9	18.9	50.0	42.7	36.4	53.3	46.1	46.1
IncremntDel:	5.0	0.1	0.1	0.0	0.6	0.6	0.1	0.0	2.4	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.6	18.6	18.6	38.8	19.5	19.5	50.2	42.7	38.8	53.4	46.2	46.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	18.6	18.6	38.8	19.5	19.5	50.2	42.7	38.8	53.4	46.2	46.2
LOS by Move:	D-	B-	B-	D+	B-	B-	D	D	D+	D-	D	D
HCM2kAvgQ:	7	6	6	0	16	16	0	0	12	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



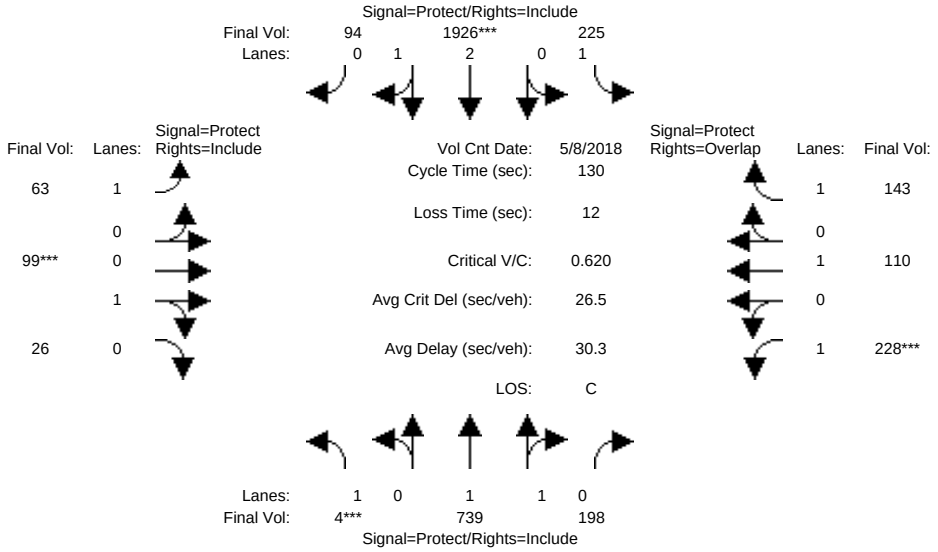
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	6	943	201	153	700	48	99	102	13	167	121	237
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	943	201	153	700	48	99	102	13	167	121	237
Added Vol:	0	7	3	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	950	204	153	740	48	99	102	13	167	121	237
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	950	204	153	740	48	99	102	13	167	121	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	950	204	153	740	48	99	102	13	167	121	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	950	204	153	740	48	99	102	13	167	121	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	2.81	0.19	1.00	0.89	0.11	1.00	1.00	1.00
Final Sat.:	1750	3045	654	1750	5258	341	1750	1597	203	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.09	0.14	0.14	0.06	0.06	0.06	0.10	0.06	0.14
Crit Moves:		****		****				****		****		
Green Time:	23.3	65.9	65.9	18.5	61.0	61.0	14.3	13.5	13.5	20.2	19.4	37.9
Volume/Cap:	0.02	0.62	0.62	0.62	0.30	0.30	0.52	0.62	0.62	0.62	0.43	0.47
Uniform Del:	43.9	23.0	23.0	52.4	21.3	21.3	54.6	55.8	55.8	51.3	50.3	37.8
IncremntDel:	0.0	0.6	0.6	4.6	0.1	0.1	2.4	6.0	6.0	4.2	1.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.9	23.6	23.6	57.0	21.4	21.4	57.0	61.8	61.8	55.5	51.3	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	23.6	23.6	57.0	21.4	21.4	57.0	61.8	61.8	55.5	51.3	38.4
LOS by Move:	D	C	C	E+	C+	C+	E+	E	E	E+	D-	D+
HCM2kAvgQ:	0	17	17	6	6	6	5	6	6	8	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



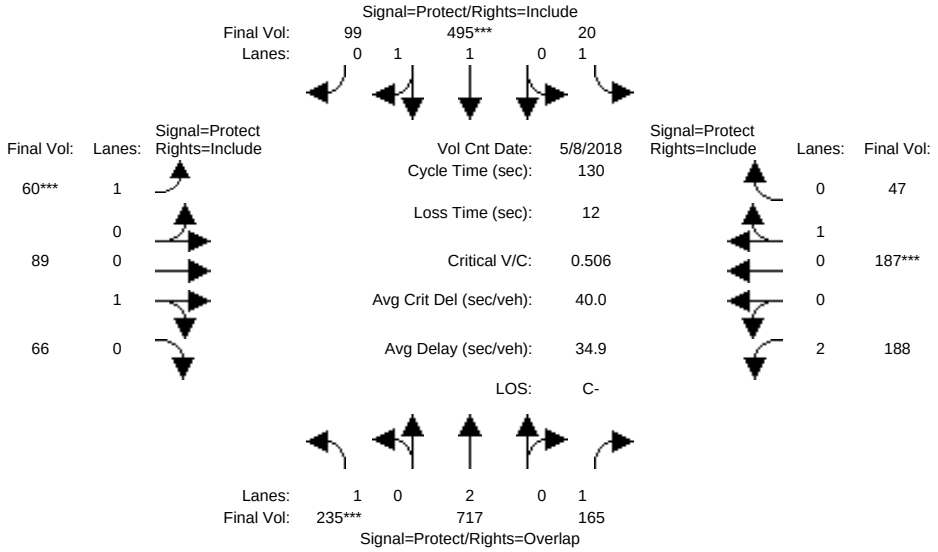
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	4	692	179	225	1921	94	63	99	26	228	110	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	692	179	225	1921	94	63	99	26	228	110	143
Added Vol:	0	47	19	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	739	198	225	1926	94	63	99	26	228	110	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	739	198	225	1926	94	63	99	26	228	110	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	739	198	225	1926	94	63	99	26	228	110	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	739	198	225	1926	94	63	99	26	228	110	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.57	0.43	1.00	2.86	0.14	1.00	0.79	0.21	1.00	1.00	1.00
Final Sat.:	1750	2918	782	1750	5339	261	1750	1426	374	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.13	0.36	0.36	0.04	0.07	0.07	0.13	0.06	0.08
Crit Moves:	****				****			****			****	
Green Time:	7.0	52.0	52.0	26.4	71.4	71.4	16.3	13.8	13.8	25.8	23.3	49.7
Volume/Cap:	0.04	0.63	0.63	0.63	0.66	0.66	0.29	0.66	0.66	0.66	0.32	0.21
Uniform Del:	58.3	31.3	31.3	47.4	20.6	20.6	51.6	55.9	55.9	48.0	46.5	27.0
IncremntDel:	0.2	0.9	0.9	3.7	0.5	0.5	0.7	8.1	8.1	4.5	0.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	32.2	32.2	51.1	21.2	21.2	52.3	63.9	63.9	52.5	47.1	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	32.2	32.2	51.1	21.2	21.2	52.3	63.9	63.9	52.5	47.1	27.2
LOS by Move:	E+	C-	C-	D-	C+	C+	D-	E	E	D-	D	C
HCM2kAvgQ:	0	15	15	9	19	19	3	6	6	10	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



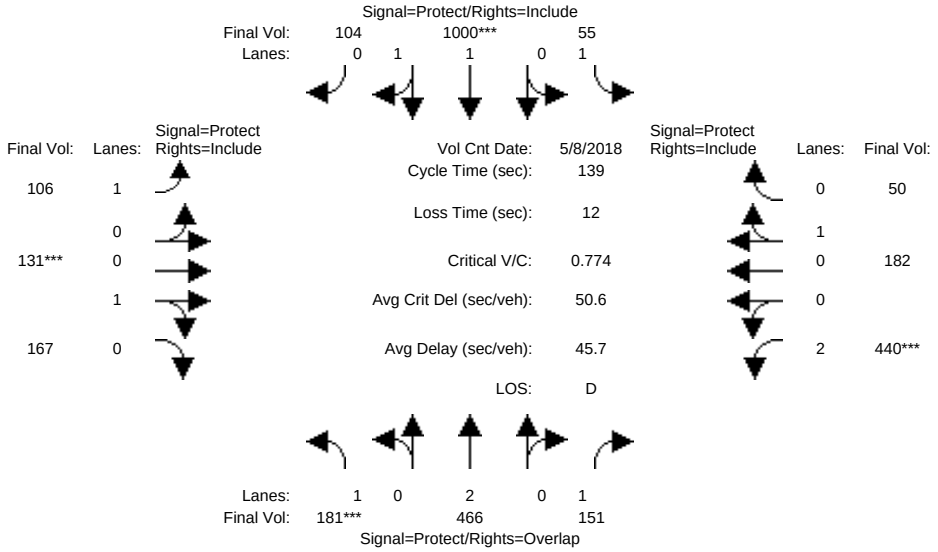
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	230	717	165	20	495	99	60	89	66	188	187	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	717	165	20	495	99	60	89	66	188	187	47
Added Vol:	5	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	717	165	20	495	99	60	89	66	188	187	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	717	165	20	495	99	60	89	66	188	187	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	717	165	20	495	99	60	89	66	188	187	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	717	165	20	495	99	60	89	66	188	187	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.66	0.34	1.00	0.57	0.43	2.00	0.80	0.20
Final Sat.:	1750	3800	1750	1750	3083	617	1750	1034	766	3150	1438	362
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.09	0.01	0.16	0.16	0.03	0.09	0.09	0.06	0.13	0.13
Crit Moves:	****				****		****				****	
Green Time:	34.5	59.0	76.2	16.8	41.3	41.3	8.8	24.9	24.9	17.3	33.4	33.4
Volume/Cap:	0.51	0.42	0.16	0.09	0.51	0.51	0.51	0.45	0.45	0.45	0.51	0.51
Uniform Del:	40.5	23.9	12.3	49.8	36.1	36.1	58.5	46.5	46.5	52.0	41.2	41.2
IncremntDel:	0.9	0.2	0.1	0.2	0.4	0.4	3.5	0.9	0.9	0.8	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.4	24.1	12.3	50.0	36.4	36.4	62.0	47.4	47.4	52.7	42.2	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.4	24.1	12.3	50.0	36.4	36.4	62.0	47.4	47.4	52.7	42.2	42.2
LOS by Move:	D	C	B	D	D+	D+	E	D	D	D-	D	D
HCM2kAvgQ:	8	9	3	1	10	10	3	6	6	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



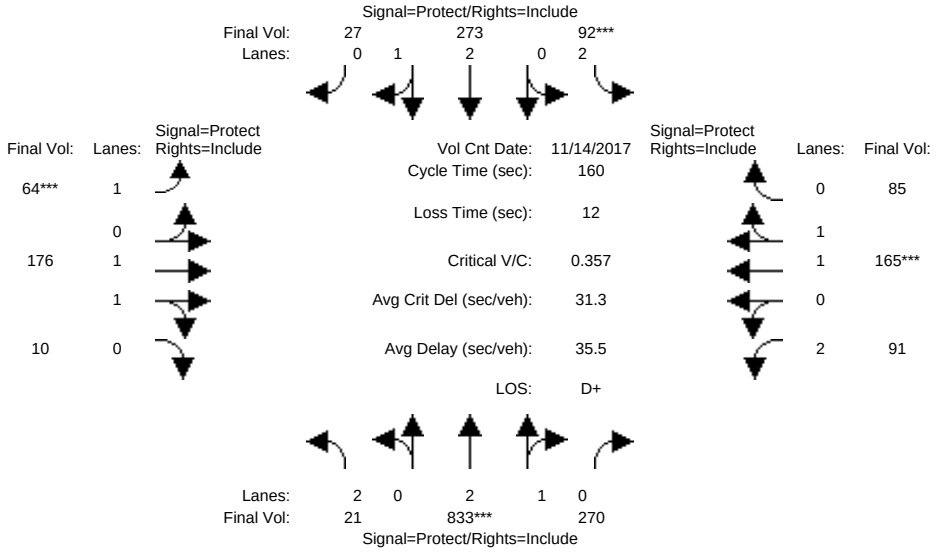
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	150	466	151	55	1000	104	106	131	167	440	182	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	466	151	55	1000	104	106	131	167	440	182	50
Added Vol:	31	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	466	151	55	1000	104	106	131	167	440	182	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	181	466	151	55	1000	104	106	131	167	440	182	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	466	151	55	1000	104	106	131	167	440	182	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	181	466	151	55	1000	104	106	131	167	440	182	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	0.44	0.56	2.00	0.78	0.22
Final Sat.:	1750	3800	1750	1750	3351	349	1750	791	1009	3150	1412	388
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.09	0.03	0.30	0.30	0.06	0.17	0.17	0.14	0.13	0.13
Crit Moves:	****				****			****		****		
Green Time:	18.6	51.2	76.3	21.0	53.6	53.6	17.5	29.7	29.7	25.1	37.3	37.3
Volume/Cap:	0.77	0.33	0.16	0.21	0.77	0.77	0.48	0.77	0.77	0.77	0.48	0.48
Uniform Del:	58.2	31.6	15.5	51.7	37.4	37.4	56.5	51.5	51.5	54.3	42.7	42.7
IncremntDel:	14.8	0.1	0.1	0.4	2.7	2.7	1.6	9.4	9.4	6.5	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.0	31.8	15.6	52.1	40.1	40.1	58.1	60.9	60.9	60.8	43.5	43.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.0	31.8	15.6	52.1	40.1	40.1	58.1	60.9	60.9	60.8	43.5	43.5
LOS by Move:	E	C	B	D-	D	D	E+	E	E	E	D	D
HCM2kAvgQ:	8	7	3	2	22	22	5	14	14	11	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



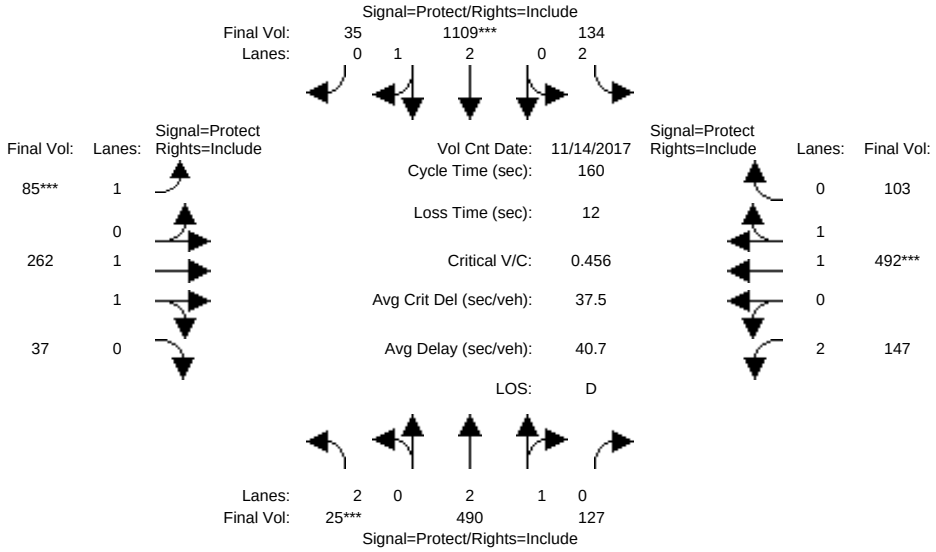
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	21	823	270	92	233	27	64	176	10	91	165	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	823	270	92	233	27	64	176	10	91	165	85
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	833	270	92	273	27	64	176	10	91	165	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	833	270	92	273	27	64	176	10	91	165	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	833	270	92	273	27	64	176	10	91	165	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	833	270	92	273	27	64	176	10	91	165	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	0.99	0.95
Lanes:	2.00	2.24	0.76	2.00	2.72	0.28	1.00	1.89	0.11	2.00	1.30	0.70
Final Sat.:	3150	4227	1370	3150	5095	504	1750	3501	199	3150	2441	1258
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.03	0.05	0.05	0.04	0.05	0.05	0.03	0.07	0.07
Crit Moves:		****		****			****				****	
Green Time:	41.7	88.3	88.3	13.1	59.6	59.6	16.4	27.4	27.4	19.2	30.3	30.3
Volume/Cap:	0.03	0.36	0.36	0.36	0.14	0.14	0.36	0.29	0.29	0.24	0.36	0.36
Uniform Del:	44.0	20.0	20.0	69.5	33.3	33.3	66.9	57.8	57.8	63.8	56.4	56.4
IncremntDel:	0.0	0.1	0.1	0.9	0.0	0.0	1.2	0.3	0.3	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.0	20.1	20.1	70.3	33.3	33.3	68.1	58.1	58.1	64.1	56.7	56.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.0	20.1	20.1	70.3	33.3	33.3	68.1	58.1	58.1	64.1	56.7	56.7
LOS by Move:	D	C+	C+	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	0	10	10	3	3	3	3	4	4	2	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



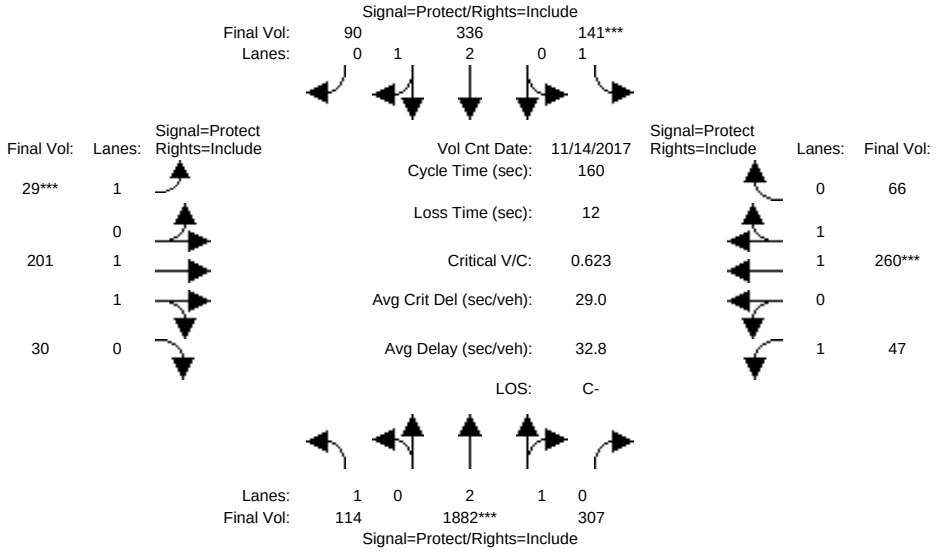
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	25	425	127	134	1104	35	85	262	37	147	492	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	425	127	134	1104	35	85	262	37	147	492	103
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	490	127	134	1109	35	85	262	37	147	492	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	490	127	134	1109	35	85	262	37	147	492	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	490	127	134	1109	35	85	262	37	147	492	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	490	127	134	1109	35	85	262	37	147	492	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.36	0.64	2.00	2.90	0.10	1.00	1.75	0.25	2.00	1.64	0.36
Final Sat.:	3150	4446	1152	3150	5428	171	1750	3242	458	3150	3059	640
Capacity Analysis Module:												
Vol/Sat:	0.01	0.11	0.11	0.04	0.20	0.20	0.05	0.08	0.08	0.05	0.16	0.16
Crit Moves:	****				****		****				****	
Green Time:	7.0	54.9	54.9	21.8	69.6	69.6	16.6	45.2	45.2	26.1	54.8	54.8
Volume/Cap:	0.18	0.32	0.32	0.31	0.47	0.47	0.47	0.29	0.29	0.29	0.47	0.47
Uniform Del:	73.7	38.8	38.8	62.4	32.1	32.1	67.6	44.8	44.8	58.7	41.2	41.2
IncremntDel:	0.6	0.1	0.1	0.4	0.1	0.1	1.9	0.2	0.2	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.4	38.9	38.9	62.8	32.2	32.2	69.5	44.9	44.9	59.1	41.5	41.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	38.9	38.9	62.8	32.2	32.2	69.5	44.9	44.9	59.1	41.5	41.5
LOS by Move:	E	D+	D+	E	C-	C-	E	D	D	E+	D	D
HCM2kAvgQ:	1	7	7	3	13	13	4	5	5	4	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



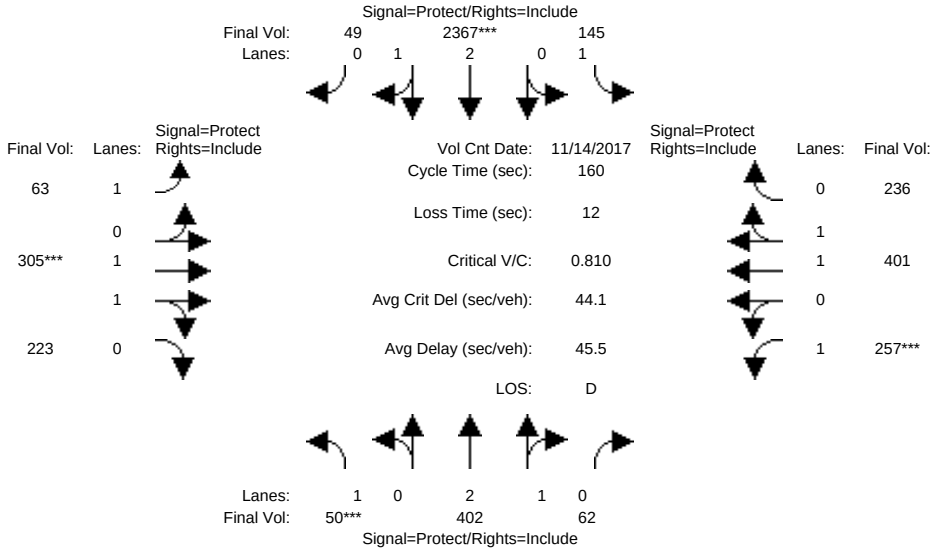
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	114	1882	275	101	336	90	29	142	30	41	244	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	1882	275	101	336	90	29	142	30	41	244	51
Added Vol:	0	0	32	40	0	0	0	59	0	6	16	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	1882	307	141	336	90	29	201	30	47	260	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	1882	307	141	336	90	29	201	30	47	260	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	1882	307	141	336	90	29	201	30	47	260	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	1882	307	141	336	90	29	201	30	47	260	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	2.56	0.44	1.00	2.34	0.66	1.00	1.73	0.27	1.00	1.58	0.42
Final Sat.:	1750	4814	785	1750	4415	1183	1750	3219	480	1750	2950	749
Capacity Analysis Module:												
Vol/Sat:	0.07	0.39	0.39	0.08	0.08	0.08	0.02	0.06	0.06	0.03	0.09	0.09
Crit Moves:		****		****			****				****	
Green Time:	54.8	98.5	98.5	20.3	64.0	64.0	7.0	17.2	17.2	12.0	22.2	22.2
Volume/Cap:	0.19	0.64	0.64	0.64	0.19	0.19	0.38	0.58	0.58	0.36	0.64	0.64
Uniform Del:	37.0	19.4	19.4	66.3	31.2	31.2	74.4	68.0	68.0	70.3	65.1	65.1
IncremntDel:	0.2	0.4	0.4	5.9	0.0	0.0	3.1	2.2	2.2	1.7	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	19.8	19.8	72.3	31.2	31.2	77.5	70.2	70.2	72.0	67.7	67.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	19.8	19.8	72.3	31.2	31.2	77.5	70.2	70.2	72.0	67.7	67.7
LOS by Move:	D+	B-	B-	E	C	C	E-	E	E	E	E	E
HCM2kAvgQ:	4	22	22	7	4	4	1	6	6	2	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



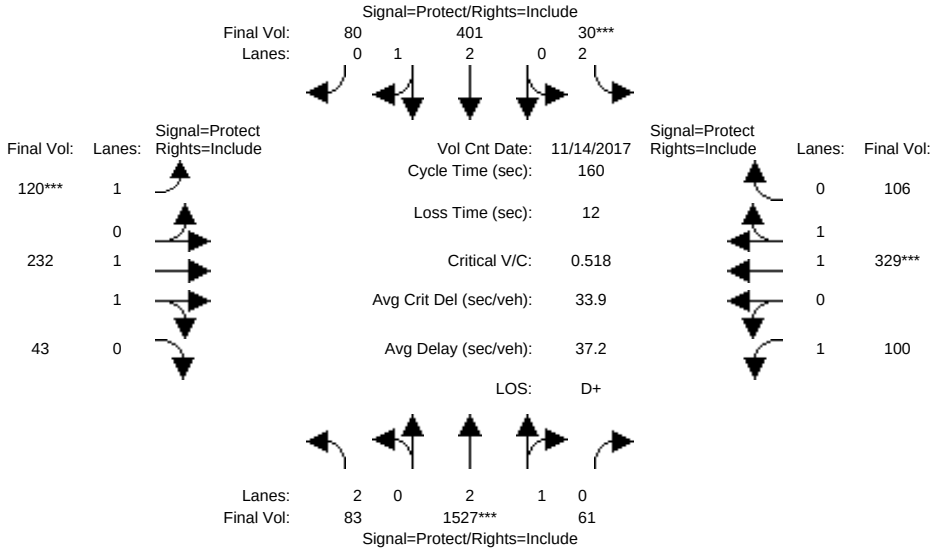
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	50	402	58	140	2367	49	63	298	223	220	301	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	402	58	140	2367	49	63	298	223	220	301	139
Added Vol:	0	0	4	5	0	0	0	7	0	37	100	97
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	402	62	145	2367	49	63	305	223	257	401	236
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	402	62	145	2367	49	63	305	223	257	401	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	402	62	145	2367	49	63	305	223	257	401	236
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	402	62	145	2367	49	63	305	223	257	401	236
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.58	0.42	1.00	2.94	0.06	1.00	1.13	0.87	1.00	1.24	0.76
Final Sat.:	1750	4851	748	1750	5486	114	1750	2136	1562	1750	2328	1370
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.08	0.43	0.43	0.04	0.14	0.14	0.15	0.17	0.17
Crit Moves:	****				****			****			****	
Green Time:	7.0	45.7	45.7	45.7	84.4	84.4	11.5	27.9	27.9	28.7	45.2	45.2
Volume/Cap:	0.65	0.29	0.29	0.29	0.82	0.82	0.50	0.82	0.82	0.82	0.61	0.61
Uniform Del:	75.3	44.5	44.5	44.5	31.4	31.4	71.5	63.6	63.6	63.1	49.8	49.8
IncremntDel:	18.4	0.1	0.1	0.3	1.9	1.9	3.2	8.1	8.1	15.4	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	44.6	44.6	44.9	33.3	33.3	74.7	71.7	71.7	78.5	50.8	50.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	44.6	44.6	44.9	33.3	33.3	74.7	71.7	71.7	78.5	50.8	50.8
LOS by Move:	F	D	D	D	C-	C-	E	E	E	E-	D	D
HCM2kAvgQ:	3	6	6	5	31	31	3	13	13	14	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



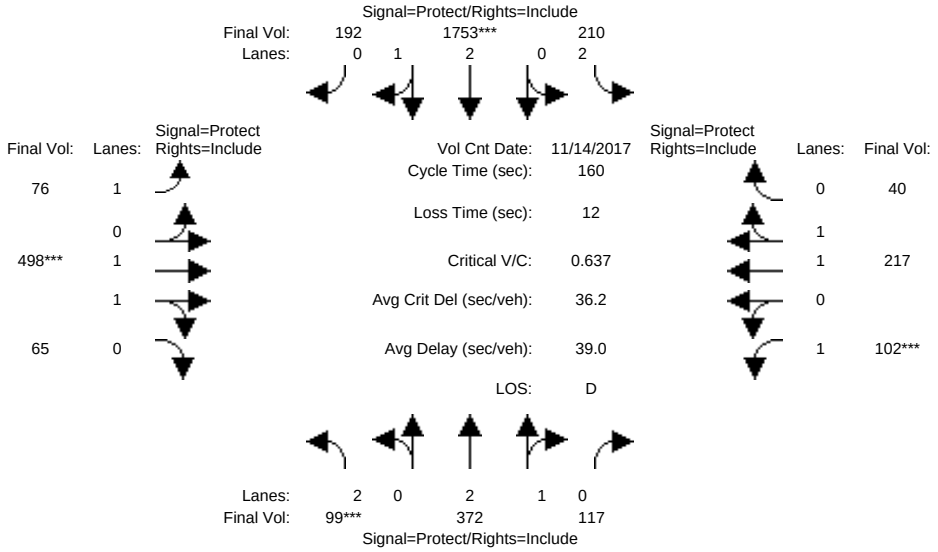
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	1511	61	27	398	80	120	232	43	100	329	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1511	61	27	398	80	120	232	43	100	329	90
Added Vol:	0	16	0	3	3	0	0	0	0	0	0	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1527	61	30	401	80	120	232	43	100	329	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1527	61	30	401	80	120	232	43	100	329	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1527	61	30	401	80	120	232	43	100	329	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1527	61	30	401	80	120	232	43	100	329	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.88	0.12	2.00	2.48	0.52	1.00	1.68	0.32	1.00	1.50	0.50
Final Sat.:	3150	5385	215	3150	4667	931	1750	3121	578	1750	2798	901
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.09	0.09	0.07	0.07	0.07	0.06	0.12	0.12
Crit Moves:		****		****			****				****	
Green Time:	31.1	85.1	85.1	7.0	61.0	61.0	20.6	31.6	31.6	24.3	35.3	35.3
Volume/Cap:	0.14	0.53	0.53	0.22	0.23	0.23	0.53	0.38	0.38	0.38	0.53	0.53
Uniform Del:	53.3	24.5	24.5	73.9	33.5	33.5	65.2	55.7	55.7	61.0	55.1	55.1
IncremntDel:	0.1	0.2	0.2	0.8	0.1	0.1	2.5	0.3	0.3	0.9	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.4	24.6	24.6	74.7	33.5	33.5	67.7	56.0	56.0	61.9	55.8	55.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.4	24.6	24.6	74.7	33.5	33.5	67.7	56.0	56.0	61.9	55.8	55.8
LOS by Move:	D-	C	C	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	2	16	16	1	5	5	6	6	6	5	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



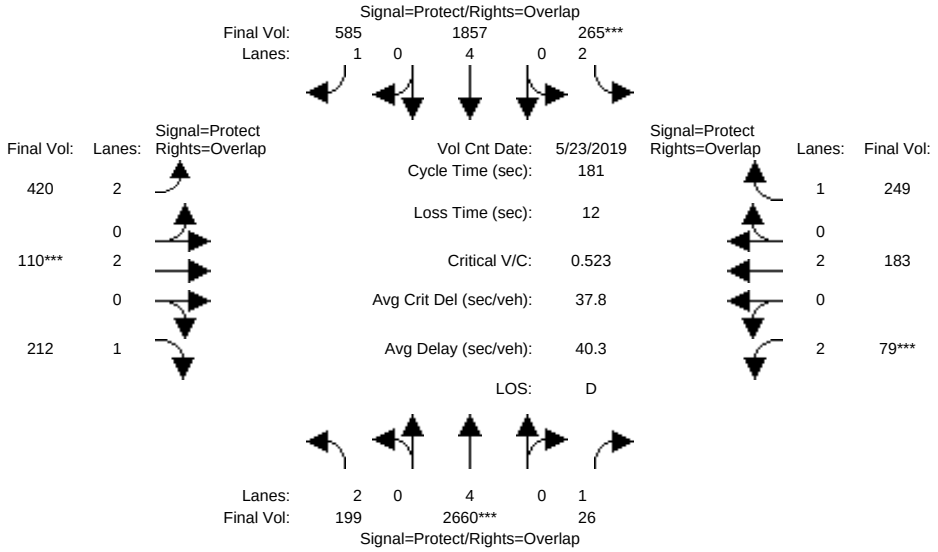
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	370	117	191	1734	192	76	498	65	102	217	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	370	117	191	1734	192	76	498	65	102	217	38
Added Vol:	0	2	0	19	19	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	372	117	210	1753	192	76	498	65	102	217	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	372	117	210	1753	192	76	498	65	102	217	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	372	117	210	1753	192	76	498	65	102	217	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	372	117	210	1753	192	76	498	65	102	217	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.26	0.74	2.00	2.69	0.31	1.00	1.76	0.24	1.00	1.68	0.32
Final Sat.:	3150	4258	1339	3150	5046	553	1750	3273	427	1750	3124	576
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.07	0.35	0.35	0.04	0.15	0.15	0.06	0.07	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.9	54.0	54.0	41.2	87.2	87.2	20.4	38.2	38.2	14.6	32.4	32.4
Volume/Cap:	0.64	0.26	0.26	0.26	0.64	0.64	0.34	0.64	0.64	0.64	0.34	0.34
Uniform Del:	74.6	38.5	38.5	47.3	25.3	25.3	63.6	54.7	54.7	70.1	54.6	54.6
IncremntDel:	8.5	0.1	0.1	0.2	0.5	0.5	0.9	1.6	1.6	8.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.1	38.6	38.6	47.4	25.8	25.8	64.6	56.2	56.2	78.4	54.9	54.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.1	38.6	38.6	47.4	25.8	25.8	64.6	56.2	56.2	78.4	54.9	54.9
LOS by Move:	F	D+	D+	D	C	C	E	E+	E+	E-	D-	D-
HCM2kAvgQ:	3	6	6	5	22	22	4	12	12	5	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



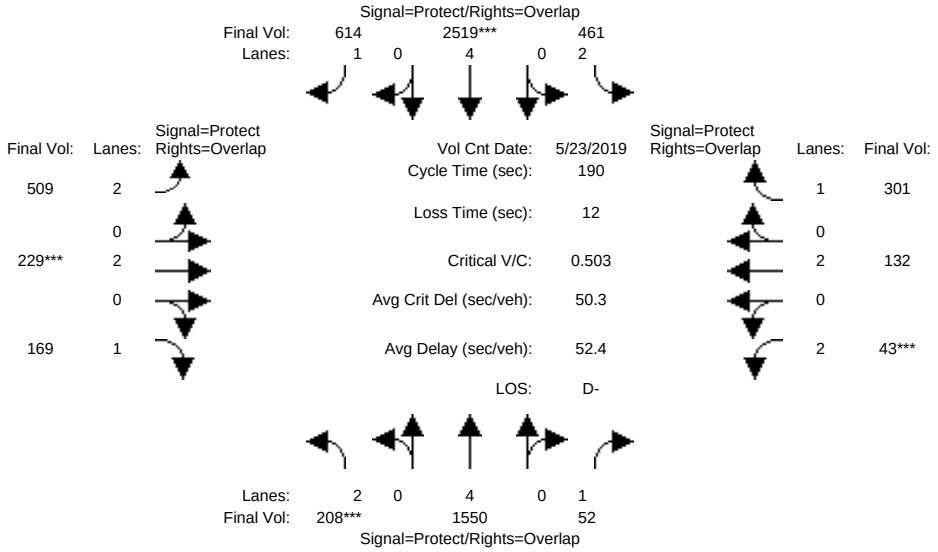
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	199	2636	26	265	1722	585	420	110	196	79	183	249
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	2636	26	265	1722	585	420	110	196	79	183	249
Added Vol:	0	24	0	0	135	0	0	0	16	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	2660	26	265	1857	585	420	110	212	79	183	249
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	2660	26	265	1857	585	420	110	212	79	183	249
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	2660	26	265	1857	585	420	110	212	79	183	249
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	2660	26	265	1857	585	420	110	212	79	183	249
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.01	0.08	0.24	0.33	0.13	0.03	0.12	0.03	0.05	0.14
Crit Moves:		****		****				****		****		
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	0.66	0.73	0.03	0.75	0.49	0.53	1.01	0.13	0.39	0.43	0.34	0.56
Uniform Del:	79.1	37.6	19.6	77.9	30.3	18.8	78.6	57.1	48.7	82.4	69.8	58.5
IncremntDel:	5.6	0.8	0.0	8.6	0.1	0.5	47.8	0.1	0.5	1.6	0.4	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.7	30.7	13.8	86.5	23.5	9.9	126.4	57.2	49.2	84.0	70.2	60.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.7	30.7	13.8	86.5	23.5	9.9	126.4	57.2	49.2	84.0	70.2	60.1
LOS by Move:	F	C	B	F	C	A	F	E+	D	F	E	E
HCM2kAvgQ:	6	23	0	10	13	10	19	2	10	3	5	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



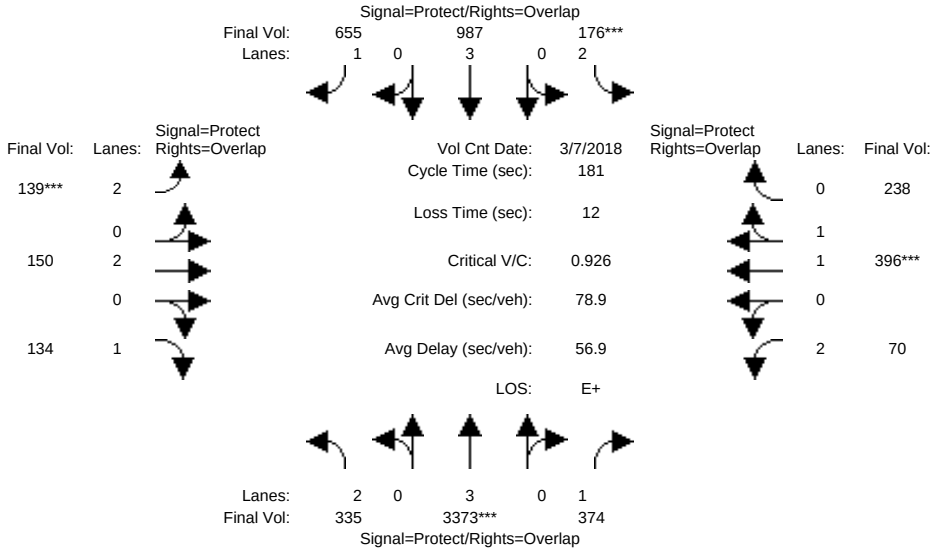
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	208	1394	52	461	2503	614	509	229	167	43	132	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1394	52	461	2503	614	509	229	167	43	132	301
Added Vol:	0	156	0	0	16	0	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	1550	52	461	2519	614	509	229	169	43	132	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1550	52	461	2519	614	509	229	169	43	132	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1550	52	461	2519	614	509	229	169	43	132	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1550	52	461	2519	614	509	229	169	43	132	301
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.20	0.03	0.15	0.33	0.35	0.16	0.06	0.10	0.01	0.03	0.17
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	0.62	0.55	0.07	0.88	0.76	0.57	0.89	0.21	0.25	0.26	0.23	0.54
Uniform Del:	81.3	46.8	32.2	77.4	45.6	21.7	76.0	52.2	39.5	86.4	70.7	53.2
IncremntDel:	3.7	0.2	0.0	15.8	1.1	0.7	16.2	0.1	0.2	0.8	0.2	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.0	43.3	27.9	93.1	46.7	22.5	92.2	52.3	39.7	87.3	70.9	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	43.3	27.9	93.1	46.7	22.5	92.2	52.3	39.7	87.3	70.9	54.3
LOS by Move:	F	D	C	F	D	C+	F	D-	D	F	E	D-
HCM2kAvgQ:	7	15	1	18	31	22	20	5	7	2	3	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



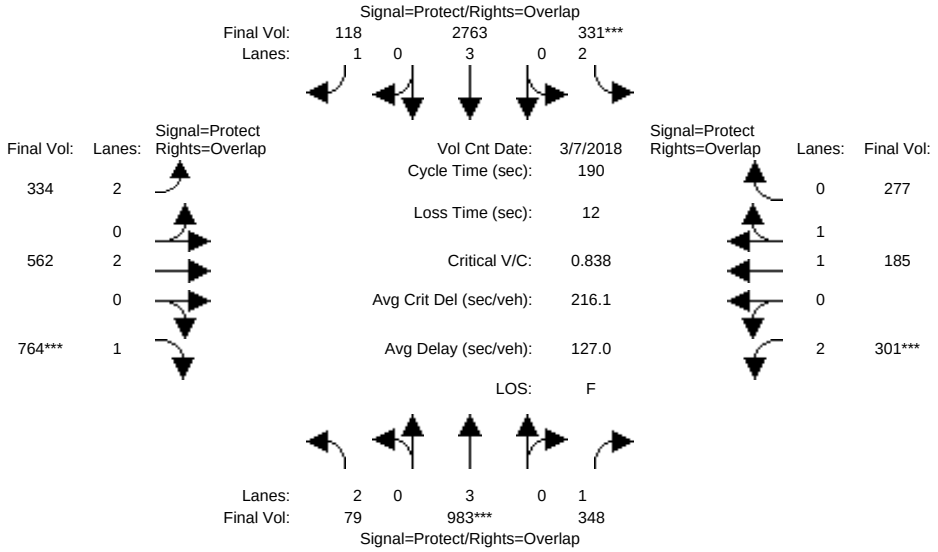
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	238	3877	374	176	1134	450	115	141	116	70	345	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	3877	374	176	1134	450	115	141	116	70	345	238
Added Vol:	97	0	0	0	0	205	24	9	18	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	335	3877	374	176	1134	655	139	150	134	70	396	238
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	335	3373	374	176	987	655	139	150	134	70	396	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	3373	374	176	987	655	139	150	134	70	396	238
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	335	3373	374	176	987	655	139	150	134	70	396	238
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.94
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.23	0.77
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2294	1379
Capacity Analysis Module:												
Vol/Sat:	0.11	0.59	0.21	0.06	0.17	0.37	0.04	0.04	0.08	0.02	0.17	0.17
Crit Moves:		****		****			****				****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	0.76	1.06	0.35	0.59	0.34	0.64	0.62	0.25	0.26	0.37	1.16	0.71
Uniform Del:	75.0	40.0	16.8	78.6	25.8	24.9	81.8	66.6	48.3	81.8	77.1	62.7
IncremntDel:	7.8	34.9	0.2	3.1	0.1	1.4	5.4	0.2	0.3	1.2	91.6	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.8	61.6	9.1	81.7	19.3	16.5	87.2	66.8	48.5	83.1	169	65.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.8	61.6	9.1	81.7	19.3	16.5	87.2	66.8	48.5	83.1	169	65.3
LOS by Move:	F	E	A	F	B-	B	F	E	D	F	F	E
HCM2kAvgQ:	10	66	5	6	7	17	5	3	6	2	24	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



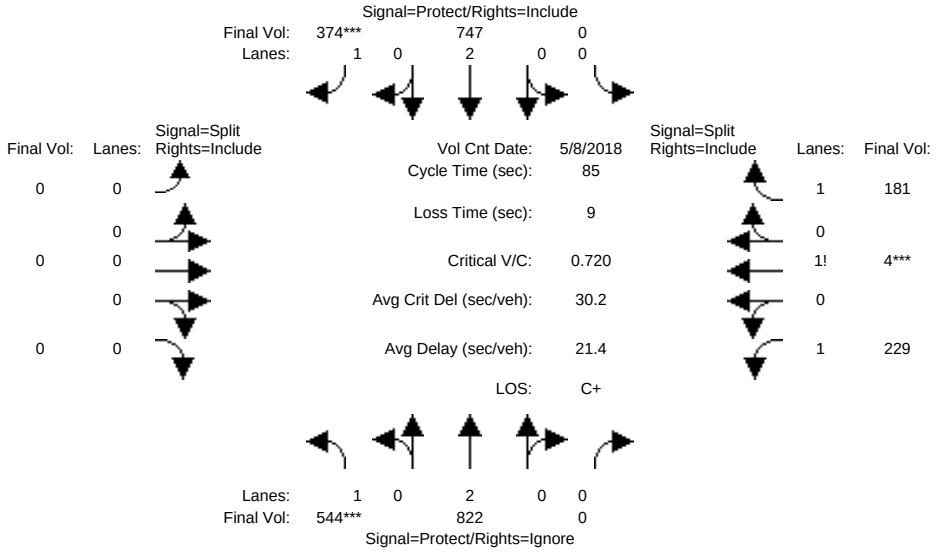
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	68	1229	348	331	3497	94	178	503	652	301	179	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1229	348	331	3497	94	178	503	652	301	179	277
Added Vol:	11	0	0	0	0	24	156	59	112	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1229	348	331	3497	118	334	562	764	301	185	277
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	983	348	331	2763	118	334	562	764	301	185	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	983	348	331	2763	118	334	562	764	301	185	277
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	983	348	331	2763	118	334	562	764	301	185	277
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.20	0.11	0.48	0.07	0.11	0.15	0.44	0.10	0.10	0.16
Crit Moves:		****		****					****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	0.54	0.39	0.35	0.74	0.89	0.11	1.27	0.85	1.98	0.84	0.48	0.46
Uniform Del:	88.5	35.1	22.9	78.2	38.6	14.3	87.1	76.1	74.1	82.4	66.6	48.2
IncremntDel:	3.8	0.1	0.2	6.6	3.7	0.0	149.8	10.3	450.2	15.6	0.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	95.3	54.1	42.5	93.4	72.8	30.2	236.9	86.4	524.2	98.0	66.9	48.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	95.3	54.1	42.5	93.4	72.8	30.2	236.9	86.4	524.2	98.0	66.9	48.6
LOS by Move:	F	D-	D	F	E	C	F	F	F	F	E	D
HCM2kAvgQ:	3	16	18	13	53	6	17	16	96	11	9	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



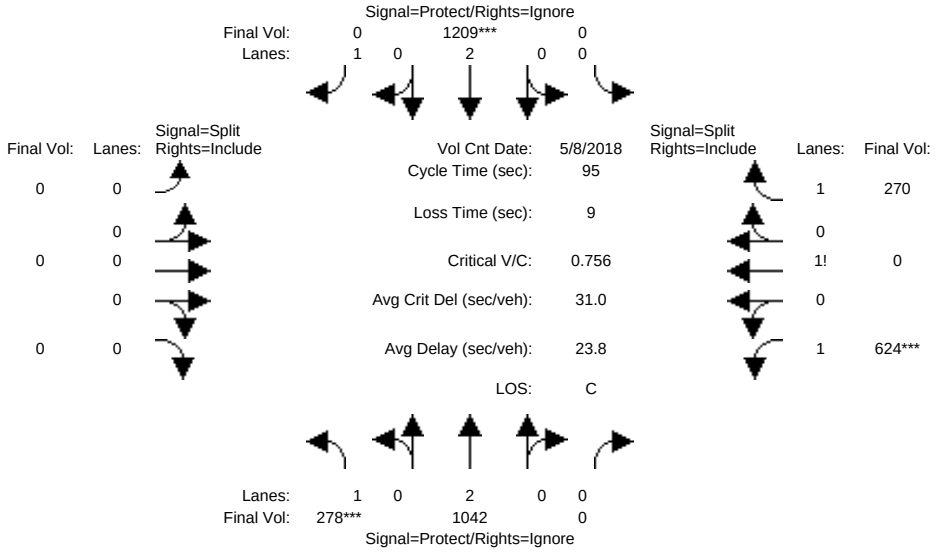
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	537	822	0	0	747	522	0	0	0	229	4	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	537	822	0	0	747	522	0	0	0	229	4	181
Added Vol:	7	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	544	822	0	0	747	522	0	0	0	229	4	181
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	544	822	0	0	747	522	0	0	0	229	4	181
Reduct Vol:	0	0	0	0	0	148	0	0	0	0	0	0
Reduced Vol:	544	822	0	0	747	374	0	0	0	229	4	181
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	544	822	0	0	747	374	0	0	0	229	4	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.55	0.02	1.43
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2709	33	2508
Capacity Analysis Module:												
Vol/Sat:	0.31	0.22	0.00	0.00	0.20	0.21	0.00	0.00	0.00	0.08	0.12	0.07
Crit Moves:	****					****					****	
Green Time:	36.7	61.9	0.0	0.0	25.2	25.2	0.0	0.0	0.0	14.1	14.1	14.1
Volume/Cap:	0.72	0.30	0.00	0.00	0.66	0.72	0.00	0.00	0.00	0.51	0.72	0.44
Uniform Del:	19.9	4.0	0.0	0.0	26.2	26.7	0.0	0.0	0.0	32.3	33.6	31.9
IncremntDel:	3.4	0.1	0.0	0.0	1.5	4.9	0.0	0.0	0.0	0.5	4.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	23.3	4.1	0.0	0.0	27.7	31.6	0.0	0.0	0.0	32.8	38.0	32.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.3	4.1	0.0	0.0	27.7	31.6	0.0	0.0	0.0	32.8	38.0	32.2
LOS by Move:	C	A	A	A	C	C	A	A	A	C-	D+	C-
HCM2kAvgQ:	14	4	0	0	9	10	0	0	0	4	7	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



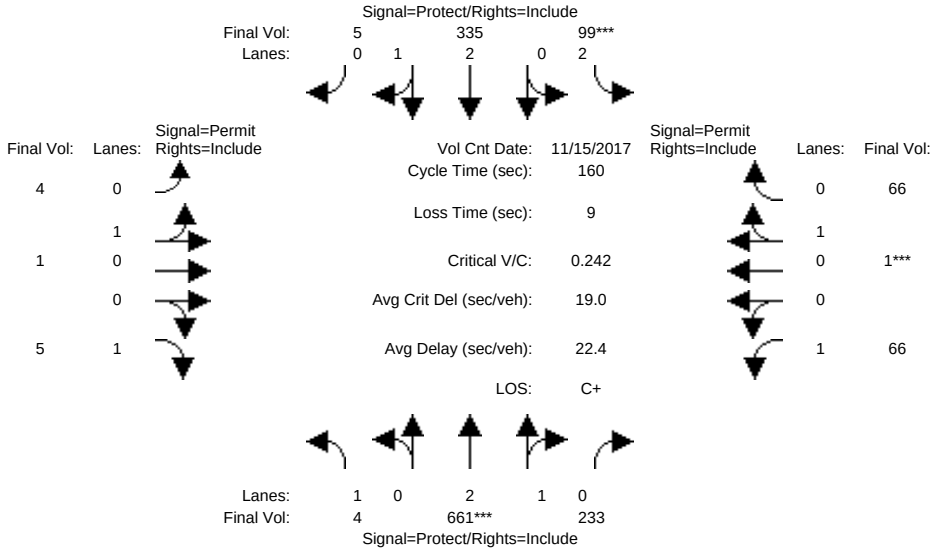
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	231	1042	0	0	1209	190	0	0	0	624	0	270
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	1042	0	0	1209	190	0	0	0	624	0	270
Added Vol:	47	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	278	1042	0	0	1209	190	0	0	0	624	0	270
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	278	1042	0	0	1209	0	0	0	0	624	0	270
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	278	1042	0	0	1209	0	0	0	0	624	0	270
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	278	1042	0	0	1209	0	0	0	0	624	0	270
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.93	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.69	0.00	1.31
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	3009	0	2284
Capacity Analysis Module:												
Vol/Sat:	0.16	0.27	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.21	0.00	0.12
Crit Moves:	****				****					****		
Green Time:	20.0	59.9	0.0	0.0	40.0	0.0	0.0	0.0	0.0	26.1	0.0	26.1
Volume/Cap:	0.76	0.43	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.76	0.00	0.43
Uniform Del:	35.2	8.9	0.0	0.0	23.4	0.0	0.0	0.0	0.0	31.6	0.0	28.4
IncremntDel:	8.7	0.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	2.8	0.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	43.9	9.0	0.0	0.0	25.5	0.0	0.0	0.0	0.0	34.4	0.0	28.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	9.0	0.0	0.0	25.5	0.0	0.0	0.0	0.0	34.4	0.0	28.5
LOS by Move:	D	A	A	A	C	A	A	A	A	C-	A	C
HCM2kAvgQ:	10	8	0	0	15	0	0	0	0	12	0	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



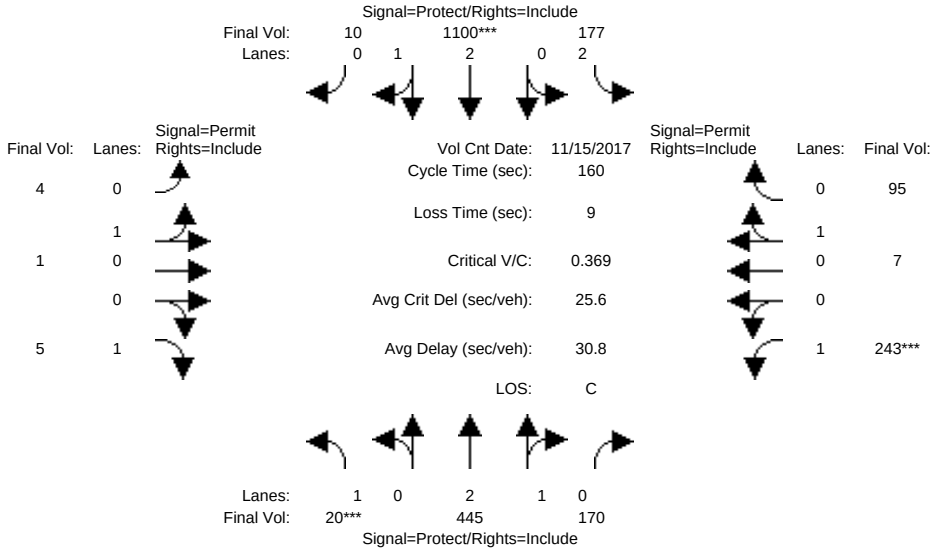
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	651	233	99	295	5	4	1	5	66	1	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	651	233	99	295	5	4	1	5	66	1	66
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	661	233	99	335	5	4	1	5	66	1	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	661	233	99	335	5	4	1	5	66	1	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	661	233	99	335	5	4	1	5	66	1	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	661	233	99	335	5	4	1	5	66	1	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.19	0.81	2.00	2.95	0.05	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	4139	1459	3150	5518	82	1440	360	1750	1750	27	1773
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.03	0.06	0.06	0.00	0.00	0.00	0.04	0.04	0.04
Crit Moves:		****		****							****	
Green Time:	52.0	106	105.6	20.8	74.3	74.3	24.6	24.6	24.6	24.6	24.6	24.6
Volume/Cap:	0.01	0.24	0.24	0.24	0.13	0.13	0.02	0.02	0.02	0.25	0.24	0.24
Uniform Del:	36.5	11.0	11.0	62.5	24.4	24.4	57.4	57.4	57.4	59.5	59.5	59.5
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.5	11.0	11.0	62.8	24.4	24.4	57.5	57.5	57.5	60.0	60.0	60.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.5	11.0	11.0	62.8	24.4	24.4	57.5	57.5	57.5	60.0	60.0	60.0
LOS by Move:	D+	B+	B+	E	C	C	E+	E+	E+	E	E+	E+
HCM2kAvgQ:	0	6	6	3	3	3	0	0	0	3	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



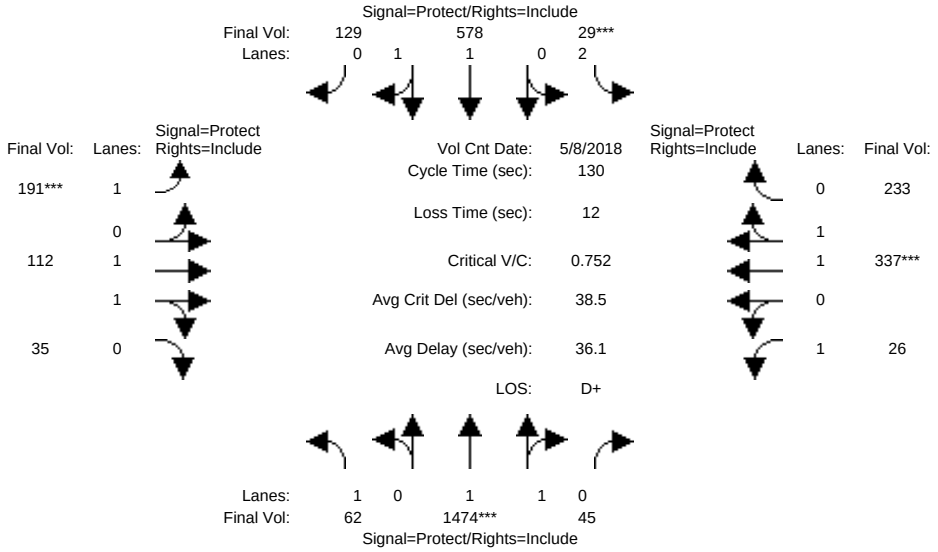
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	20	380	170	177	1095	10	4	1	5	243	7	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	380	170	177	1095	10	4	1	5	243	7	95
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	445	170	177	1100	10	4	1	5	243	7	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	445	170	177	1100	10	4	1	5	243	7	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	445	170	177	1100	10	4	1	5	243	7	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	445	170	177	1100	10	4	1	5	243	7	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.14	0.86	2.00	2.97	0.03	0.80	0.20	1.00	1.00	0.07	0.93
Final Sat.:	1750	4050	1547	3150	5549	50	1440	360	1750	1750	124	1676
Capacity Analysis Module:												
Vol/Sat:	0.01	0.11	0.11	0.06	0.20	0.20	0.00	0.00	0.00	0.14	0.06	0.06
Crit Moves:	****				****					****		
Green Time:	7.0	60.7	60.7	31.0	84.7	84.7	59.3	59.3	59.3	59.3	59.3	59.3
Volume/Cap:	0.26	0.29	0.29	0.29	0.37	0.37	0.01	0.01	0.01	0.37	0.15	0.15
Uniform Del:	74.0	34.6	34.6	55.1	22.1	22.1	31.8	31.8	31.8	36.8	33.6	33.6
IncremntDel:	1.8	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.8	34.7	34.7	55.3	22.2	22.2	31.8	31.8	31.8	37.1	33.7	33.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.8	34.7	34.7	55.3	22.2	22.2	31.8	31.8	31.8	37.1	33.7	33.7
LOS by Move:	E-	C-	C-	E+	C+	C+	C	C	C	D+	C-	C-
HCM2kAvgQ:	1	7	7	4	10	10	0	0	0	9	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



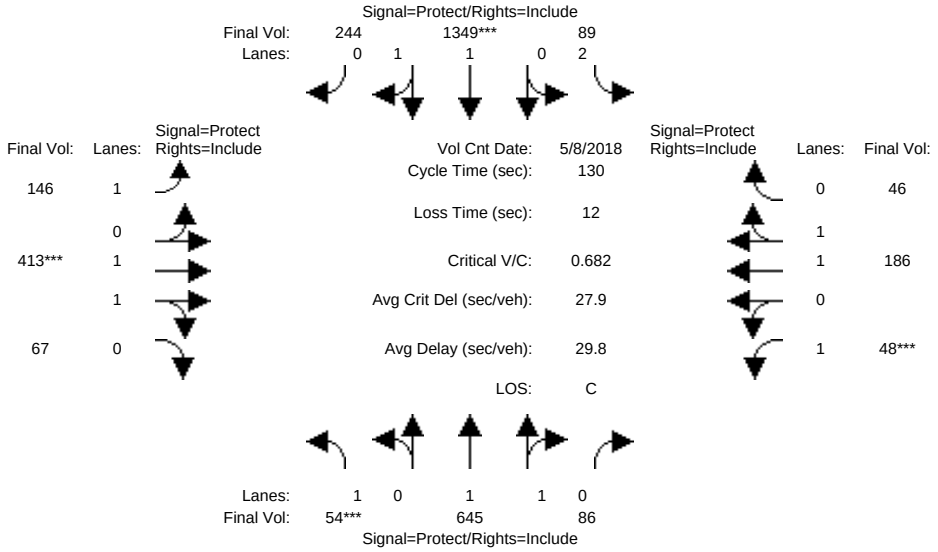
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	62	1415	45	29	567	129	191	112	35	26	337	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	1415	45	29	567	129	191	112	35	26	337	233
Added Vol:	0	59	0	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1474	45	29	578	129	191	112	35	26	337	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	1474	45	29	578	129	191	112	35	26	337	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1474	45	29	578	129	191	112	35	26	337	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	1474	45	29	578	129	191	112	35	26	337	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.94	0.06	2.00	1.63	0.37	1.00	1.51	0.49	1.00	1.16	0.84
Final Sat.:	1750	3590	110	3150	3024	675	1750	2818	881	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.04	0.41	0.41	0.01	0.19	0.19	0.11	0.04	0.04	0.01	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	16.4	67.6	67.6	7.0	58.2	58.2	18.0	25.5	25.5	17.9	25.4	25.4
Volume/Cap:	0.28	0.79	0.79	0.17	0.43	0.43	0.79	0.20	0.20	0.11	0.79	0.79
Uniform Del:	51.5	25.4	25.4	58.7	24.5	24.5	54.2	43.7	43.7	49.1	49.8	49.8
IncremntDel:	0.7	2.3	2.3	0.5	0.2	0.2	15.9	0.1	0.1	0.2	5.8	5.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.2	27.7	27.7	59.2	24.7	24.7	70.0	43.9	43.9	49.3	55.6	55.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.2	27.7	27.7	59.2	24.7	24.7	70.0	43.9	43.9	49.3	55.6	55.6
LOS by Move:	D-	C	C	E+	C	C	E	D	D	D	E+	E+
HCM2kAvgQ:	3	26	26	1	10	10	8	2	2	1	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



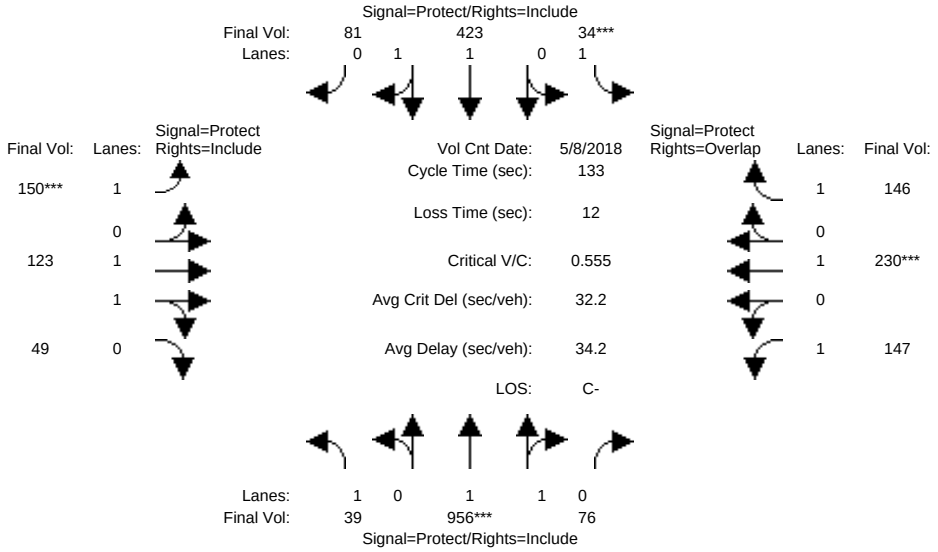
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	54	638	86	89	1280	244	146	413	67	48	186	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	638	86	89	1280	244	146	413	67	48	186	46
Added Vol:	0	7	0	0	69	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	645	86	89	1349	244	146	413	67	48	186	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	645	86	89	1349	244	146	413	67	48	186	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	645	86	89	1349	244	146	413	67	48	186	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	645	86	89	1349	244	146	413	67	48	186	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.76	0.24	2.00	1.69	0.31	1.00	1.71	0.29	1.00	1.59	0.41
Final Sat.:	1750	3264	435	3150	3133	567	1750	3183	516	1750	2966	733
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.20	0.03	0.43	0.43	0.08	0.13	0.13	0.03	0.06	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	68.3	68.3	18.6	79.9	79.9	16.2	24.1	24.1	7.0	14.9	14.9
Volume/Cap:	0.57	0.38	0.38	0.20	0.70	0.70	0.67	0.70	0.70	0.51	0.55	0.55
Uniform Del:	60.0	18.2	18.2	49.1	16.9	16.9	54.4	49.6	49.6	59.8	54.4	54.4
IncremntDel:	8.3	0.1	0.1	0.2	1.0	1.0	7.9	3.2	3.2	4.6	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	18.4	18.4	49.3	17.9	17.9	62.3	52.8	52.8	64.4	55.9	55.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	18.4	18.4	49.3	17.9	17.9	62.3	52.8	52.8	64.4	55.9	55.9
LOS by Move:	E	B-	B-	D	B	B	E	D-	D-	E	E+	E+
HCM2kAvgQ:	3	9	9	2	22	22	6	9	9	2	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



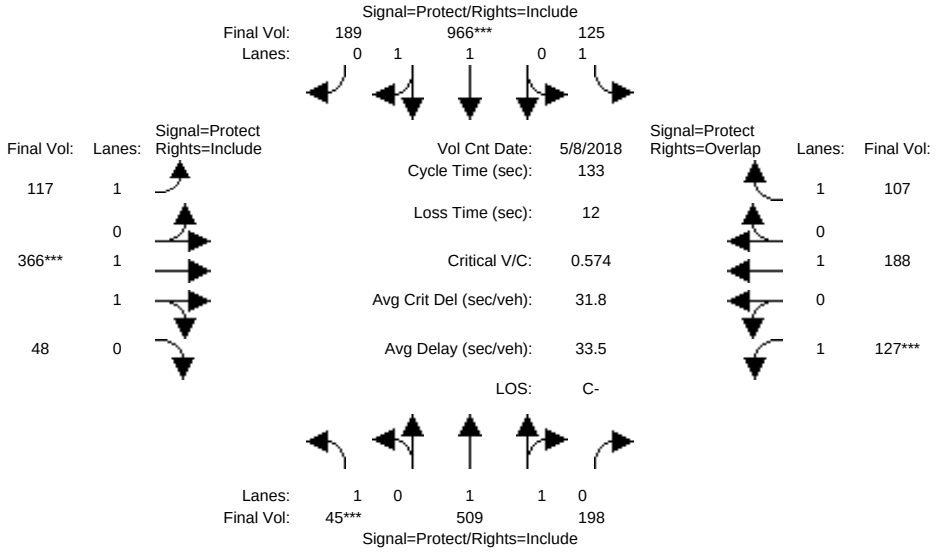
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	39	934	76	34	419	76	123	123	49	147	230	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	934	76	34	419	76	123	123	49	147	230	146
Added Vol:	0	22	0	0	4	5	27	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	956	76	34	423	81	150	123	49	147	230	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	956	76	34	423	81	150	123	49	147	230	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	956	76	34	423	81	150	123	49	147	230	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	956	76	34	423	81	150	123	49	147	230	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.85	0.15	1.00	1.67	0.33	1.00	1.41	0.59	1.00	1.00	1.00
Final Sat.:	1750	3427	272	1750	3105	595	1750	2645	1054	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.28	0.28	0.02	0.14	0.14	0.09	0.05	0.05	0.08	0.12	0.08
Crit Moves:		****		****			****				****	
Green Time:	20.2	65.5	65.5	7.0	52.3	52.3	20.1	22.9	22.9	25.6	28.4	35.4
Volume/Cap:	0.15	0.57	0.57	0.37	0.35	0.35	0.57	0.27	0.27	0.44	0.57	0.31
Uniform Del:	48.9	23.8	23.8	60.9	28.4	28.4	52.4	47.8	47.8	47.3	46.8	39.1
IncremntDel:	0.3	0.4	0.4	2.5	0.1	0.1	2.9	0.2	0.2	0.9	1.9	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.2	24.2	24.2	63.4	28.5	28.5	55.3	48.0	48.0	48.2	48.7	39.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.2	24.2	24.2	63.4	28.5	28.5	55.3	48.0	48.0	48.2	48.7	39.4
LOS by Move:	D	C	C	E	C	C	E+	D	D	D	D	D
HCM2kAvgQ:	1	15	15	2	7	7	7	3	3	6	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



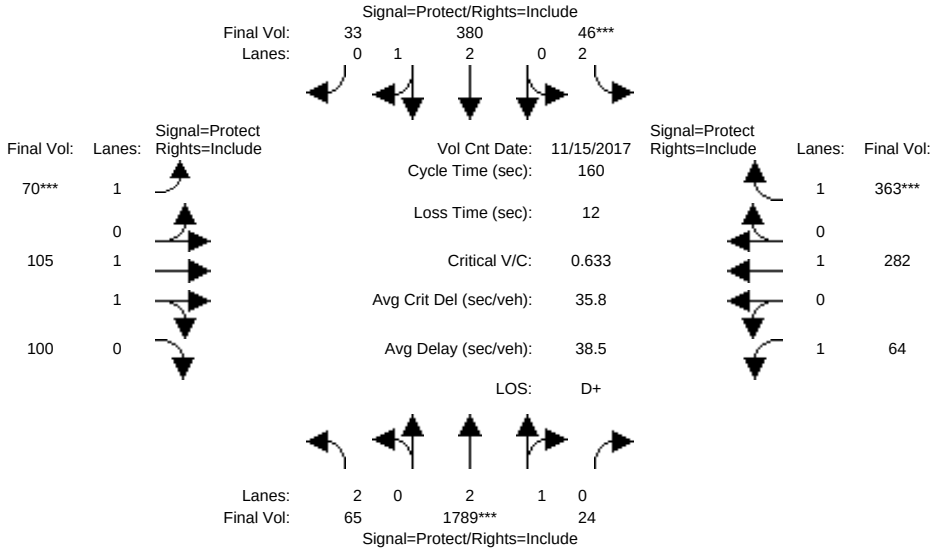
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	45	507	198	125	941	158	114	366	48	127	188	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	507	198	125	941	158	114	366	48	127	188	107
Added Vol:	0	2	0	0	25	31	3	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	509	198	125	966	189	117	366	48	127	188	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	509	198	125	966	189	117	366	48	127	188	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	509	198	125	966	189	117	366	48	127	188	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	509	198	125	966	189	117	366	48	127	188	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.42	0.58	1.00	1.66	0.34	1.00	1.76	0.24	1.00	1.00	1.00
Final Sat.:	1750	2663	1036	1750	3094	605	1750	3271	429	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.19	0.07	0.31	0.31	0.07	0.11	0.11	0.07	0.10	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	57.3	57.3	21.4	71.7	71.7	17.1	25.7	25.7	16.7	25.3	46.7
Volume/Cap:	0.49	0.44	0.44	0.44	0.58	0.58	0.52	0.58	0.58	0.58	0.52	0.17
Uniform Del:	61.3	26.7	26.7	50.4	20.6	20.6	54.1	48.8	48.8	54.9	48.4	29.8
IncremntDel:	4.0	0.2	0.2	1.1	0.4	0.4	2.2	1.2	1.2	3.9	1.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.3	26.9	26.9	51.5	21.0	21.0	56.3	49.9	49.9	58.7	49.8	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	26.9	26.9	51.5	21.0	21.0	56.3	49.9	49.9	58.7	49.8	30.0
LOS by Move:	E	C	C	D-	C+	C+	E+	D	D	E+	D	C
HCM2kAvgQ:	2	10	10	5	16	16	5	8	8	5	7	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



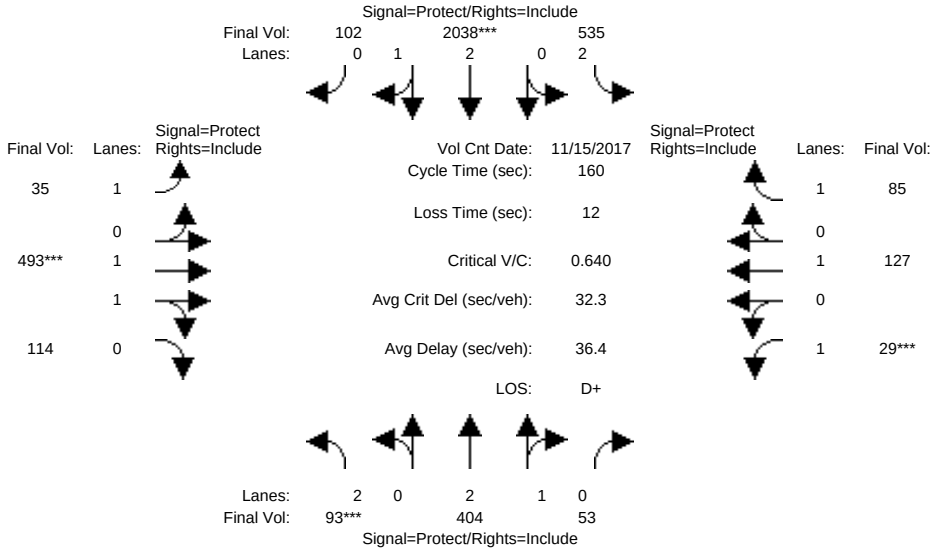
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	1757	24	46	374	33	70	105	100	64	282	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1757	24	46	374	33	70	105	100	64	282	363
Added Vol:	0	32	0	0	6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1789	24	46	380	33	70	105	100	64	282	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1789	24	46	380	33	70	105	100	64	282	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1789	24	46	380	33	70	105	100	64	282	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1789	24	46	380	33	70	105	100	64	282	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	2.00	2.96	0.04	2.00	2.75	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5526	74	3150	5152	447	1750	1898	1800	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.32	0.32	0.01	0.07	0.07	0.04	0.06	0.06	0.04	0.15	0.21
Crit Moves:		****		****			****					****
Green Time:	32.4	79.9	79.9	7.0	54.6	54.6	9.9	35.9	35.9	25.2	51.2	51.2
Volume/Cap:	0.10	0.65	0.65	0.33	0.22	0.22	0.65	0.25	0.25	0.23	0.46	0.65
Uniform Del:	52.0	29.6	29.6	74.2	37.5	37.5	73.4	50.9	50.9	59.0	43.4	46.7
IncremntDel:	0.1	0.5	0.5	1.4	0.1	0.1	13.0	0.2	0.2	0.4	0.6	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.1	30.2	30.2	75.7	37.6	37.6	86.3	51.1	51.1	59.4	44.0	49.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	30.2	30.2	75.7	37.6	37.6	86.3	51.1	51.1	59.4	44.0	49.3
LOS by Move:	D-	C	C	E-	D+	D+	F	D-	D-	E+	D	D
HCM2kAvgQ:	1	22	22	1	5	5	4	4	4	3	11	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



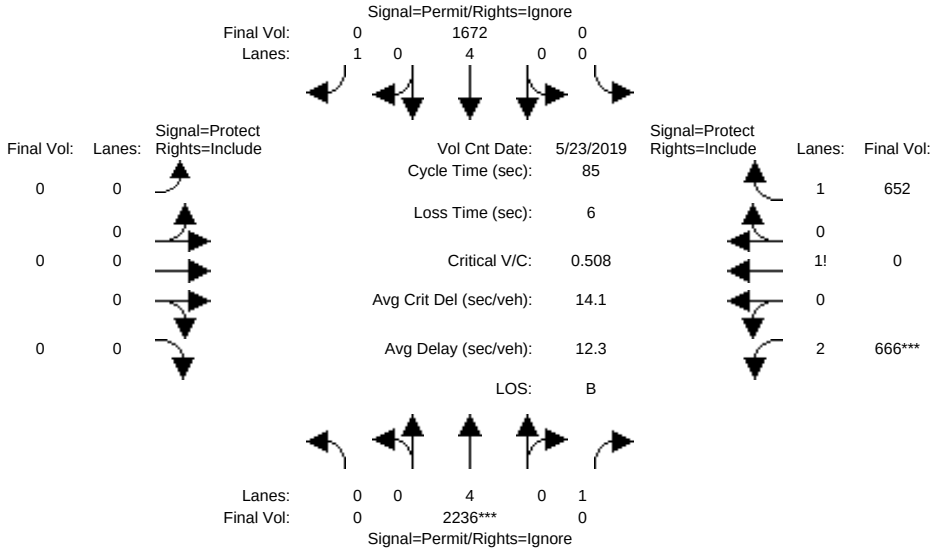
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	93	400	53	535	2001	102	35	493	114	29	127	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	400	53	535	2001	102	35	493	114	29	127	85
Added Vol:	0	4	0	0	37	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	404	53	535	2038	102	35	493	114	29	127	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	404	53	535	2038	102	35	493	114	29	127	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	404	53	535	2038	102	35	493	114	29	127	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	404	53	535	2038	102	35	493	114	29	127	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.64	0.36	2.00	2.85	0.15	1.00	1.61	0.39	1.00	1.00	1.00
Final Sat.:	3150	4950	649	3150	5333	267	1750	3005	695	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.17	0.38	0.38	0.02	0.16	0.16	0.02	0.07	0.05
Crit Moves:	****				****			****			****	
Green Time:	7.2	32.7	32.7	68.1	93.6	93.6	18.7	40.2	40.2	7.0	28.5	28.5
Volume/Cap:	0.65	0.40	0.40	0.40	0.65	0.65	0.17	0.65	0.65	0.38	0.38	0.27
Uniform Del:	75.2	55.1	55.1	31.8	22.3	22.3	63.7	53.7	53.7	74.4	57.9	56.8
IncremntDel:	10.4	0.2	0.2	0.2	0.5	0.5	0.4	1.7	1.7	3.1	0.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.6	55.4	55.4	32.0	22.8	22.8	64.1	55.4	55.4	77.5	58.6	57.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	55.4	55.4	32.0	22.8	22.8	64.1	55.4	55.4	77.5	58.6	57.3
LOS by Move:	F	E+	E+	C	C+	C+	E	E+	E+	E-	E+	E+
HCM2kAvgQ:	3	6	6	10	23	23	2	13	13	2	6	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



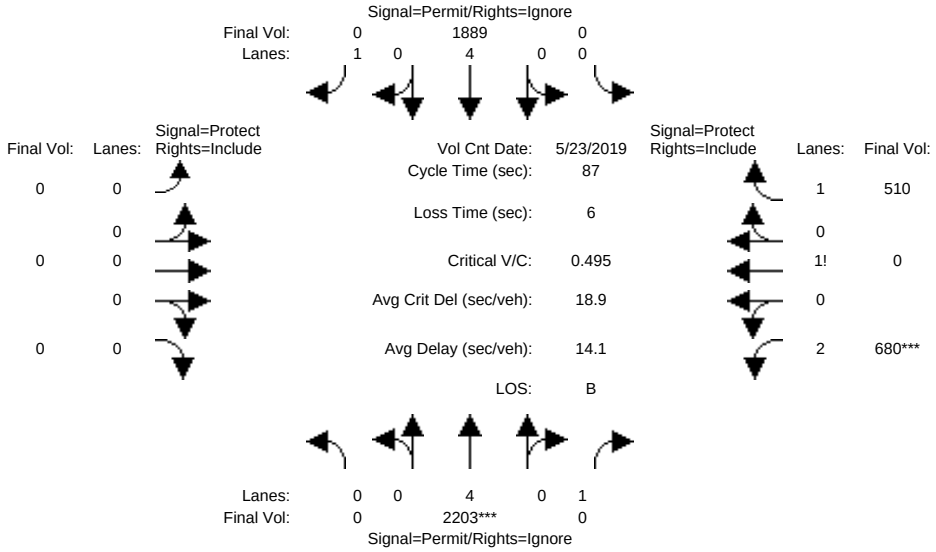
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2226	0	0	1618	371	0	0	0	626	0	652
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2226	0	0	1618	371	0	0	0	626	0	652
Added Vol:	0	10	0	0	54	0	0	0	0	40	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2236	0	0	1672	371	0	0	0	666	0	652
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2236	0	0	1672	0	0	0	0	666	0	652
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2236	0	0	1672	0	0	0	0	666	0	652
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2236	0	0	1672	0	0	0	0	666	0	652
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.81	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.44	0.00	1.56
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3751	0	2736
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.18	0.00	0.24
Crit Moves:		****								****		
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	22.7
Volume/Cap:	0.00	0.49	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.66	0.00	0.89
Uniform Del:	0.0	9.6	0.0	0.0	8.7	0.0	0.0	0.0	0.0	27.7	0.0	29.9
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.0	7.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	5.6	0.0	0.0	5.1	0.0	0.0	0.0	0.0	28.6	0.0	37.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.6	0.0	0.0	5.1	0.0	0.0	0.0	0.0	28.6	0.0	37.1
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	D+
HCM2kAvgQ:	0	5	0	0	3	0	0	0	0	9	0	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



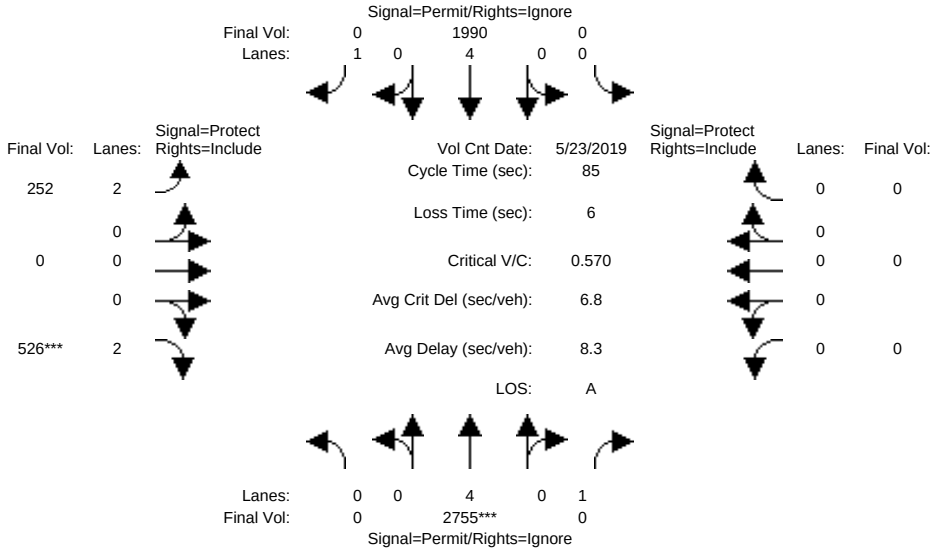
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2141	0	0	1883	344	0	0	0	675	0	510
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2141	0	0	1883	344	0	0	0	675	0	510
Added Vol:	0	62	0	0	6	0	0	0	0	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2203	0	0	1889	344	0	0	0	680	0	510
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2203	0	0	1889	0	0	0	0	680	0	510
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2203	0	0	1889	0	0	0	0	680	0	510
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2203	0	0	1889	0	0	0	0	680	0	510
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.84	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.49	0.00	1.51
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3982	0	2636
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.17	0.00	0.19
Crit Moves:		****								****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.47	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.65	0.00	0.74
Uniform Del:	0.0	9.2	0.0	0.0	8.7	0.0	0.0	0.0	0.0	28.7	0.0	29.5
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.0	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.2	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.2	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.4
LOS by Move:	A	B	A	A	A	A	A	A	A	C	A	C
HCM2kAvgQ:	0	11	0	0	3	0	0	0	0	9	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



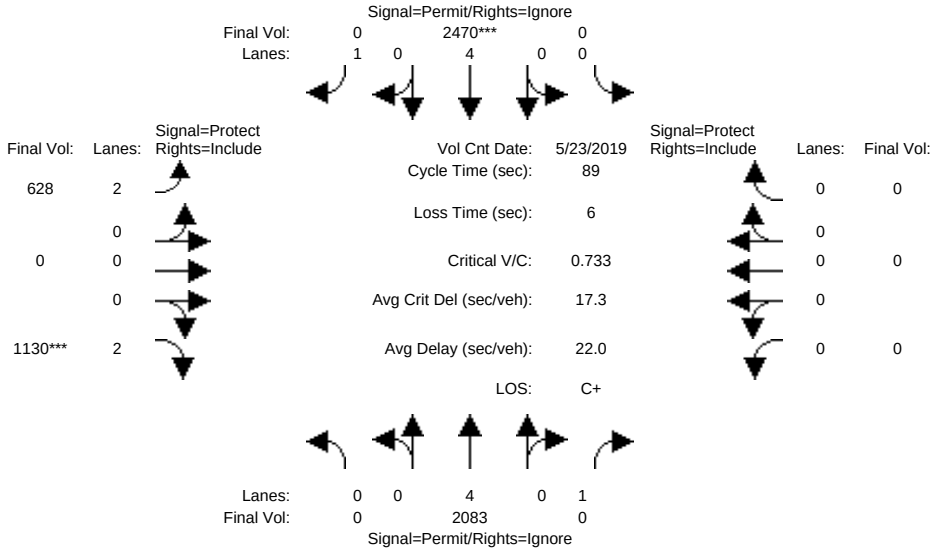
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2738	584	0	1896	0	252	0	486	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2738	584	0	1896	0	252	0	486	0	0	0
Added Vol:	0	17	0	0	94	0	0	0	40	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2755	584	0	1990	0	252	0	526	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2755	0	0	1990	0	252	0	526	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2755	0	0	1990	0	252	0	526	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2755	0	0	1990	0	252	0	526	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.26	0.00	0.08	0.00	0.17	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.00	0.00	0.47	0.00	0.54	0.00	0.76	0.00	0.00	0.00
Uniform Del:	0.0	5.6	0.0	0.0	11.1	0.0	33.5	0.0	31.1	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	1.3	0.0	5.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.2	0.0	0.0	7.5	0.0	34.8	0.0	36.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.2	0.0	0.0	7.5	0.0	34.8	0.0	36.2	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C-	A	D+	A	A	A
HCM2kAvgQ:	0	3	0	0	5	0	4	0	10	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



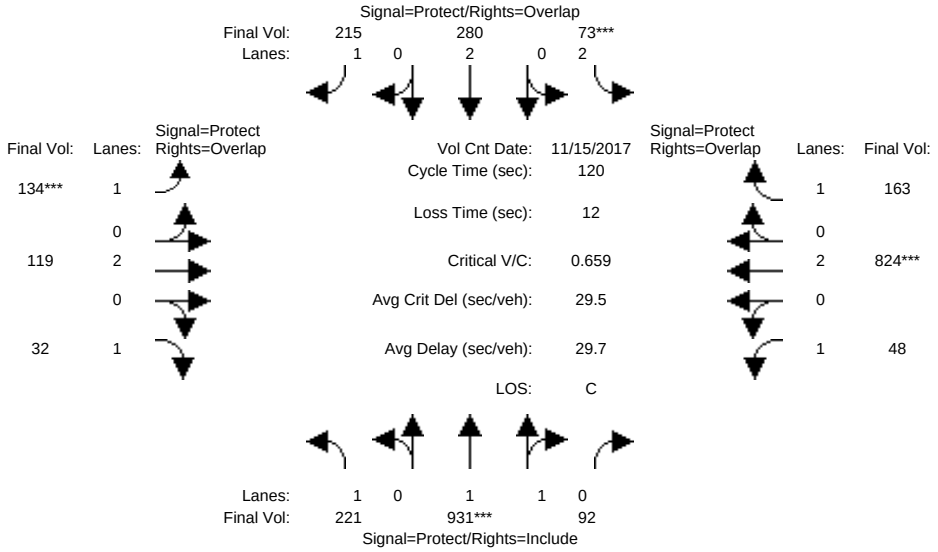
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	1974	352	0	2459	0	628	0	1125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1974	352	0	2459	0	628	0	1125	0	0	0
Added Vol:	0	109	0	0	11	0	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2083	352	0	2470	0	628	0	1130	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2083	0	0	2470	0	628	0	1130	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2083	0	0	2470	0	628	0	1130	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2083	0	0	2470	0	628	0	1130	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.00	0.00	0.33	0.00	0.20	0.00	0.36	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.39	0.00	0.00	0.65	0.00	1.13	0.00	0.83	0.00	0.00	0.00
Uniform Del:	0.0	5.7	0.0	0.0	16.4	0.0	36.7	0.0	22.4	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.0	79.3	0.0	4.5	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.6	0.0	0.0	13.0	0.0	116.0	0.0	26.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.6	0.0	0.0	13.0	0.0	116.0	0.0	26.9	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B	A	F	A	C	A	A	A
HCM2kAvgQ:	0	2	0	0	11	0	19	0	19	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



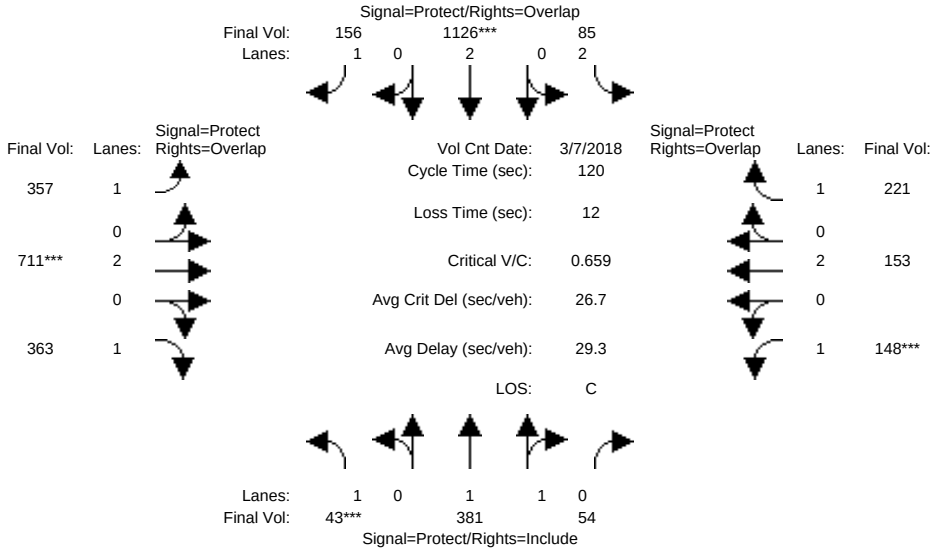
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	847	84	66	255	196	122	99	29	44	699	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	847	84	66	255	196	122	99	29	44	699	148
Added Vol:	0	0	0	0	0	0	0	9	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	847	84	66	255	196	122	108	29	44	750	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	931	92	73	280	215	134	119	32	48	824	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	931	92	73	280	215	134	119	32	48	824	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	931	92	73	280	215	134	119	32	48	824	163
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.81	0.19	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3366	334	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.28	0.28	0.02	0.07	0.12	0.08	0.03	0.02	0.03	0.22	0.09
Crit Moves:		****		****			****				****	
Green Time:	34.0	48.5	48.5	8.0	22.5	35.9	13.4	25.7	59.8	25.7	38.0	46.0
Volume/Cap:	0.44	0.68	0.68	0.35	0.39	0.41	0.68	0.15	0.04	0.13	0.68	0.24
Uniform Del:	35.2	29.4	29.4	53.5	42.8	33.6	51.2	38.2	15.4	38.1	35.7	25.1
IncremntDel:	0.6	1.3	1.3	1.0	0.4	0.5	9.6	0.1	0.0	0.2	1.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.74	0.55	0.55	0.95	0.85	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.6	17.4	17.4	51.9	36.6	24.6	60.8	38.3	15.4	38.2	37.4	25.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.6	17.4	17.4	51.9	36.6	24.6	60.8	38.3	15.4	38.2	37.4	25.3
LOS by Move:	C	B	B	D-	D+	C	E	D+	B	D+	D+	C
HCM2kAvgQ:	6	12	12	1	4	5	5	2	1	1	13	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



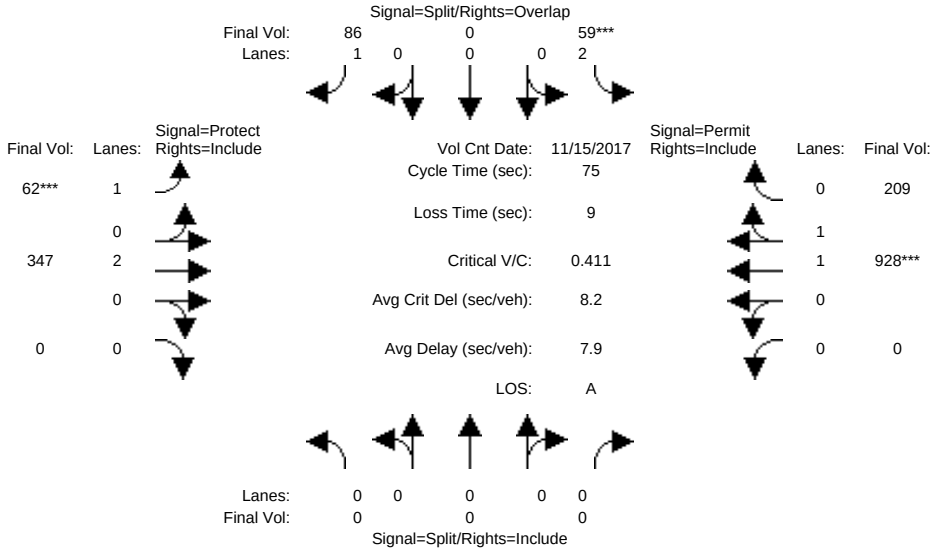
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	377	53	84	1115	154	353	645	359	147	145	219
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	377	53	84	1115	154	353	645	359	147	145	219
Added Vol:	0	0	0	0	0	0	0	59	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	377	53	84	1115	154	353	704	359	147	151	219
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	43	381	54	85	1126	156	357	711	363	148	153	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	381	54	85	1126	156	357	711	363	148	153	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	381	54	85	1126	156	357	711	363	148	153	221
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.75	0.25	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3244	456	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.12	0.03	0.30	0.09	0.20	0.19	0.21	0.08	0.04	0.13
Crit Moves:	****				****			****			****	
Green Time:	5.0	37.4	37.4	21.3	53.7	86.8	33.1	33.9	38.9	15.4	16.2	37.4
Volume/Cap:	0.60	0.38	0.38	0.15	0.66	0.12	0.74	0.66	0.64	0.66	0.30	0.41
Uniform Del:	56.5	32.2	32.2	41.7	26.0	5.0	39.5	38.0	34.6	49.8	46.8	32.5
IncremntDel:	12.7	0.2	0.2	0.1	1.0	0.0	5.9	1.6	2.4	7.2	0.3	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.70	0.70	0.86	0.46	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.6	22.7	22.7	35.9	13.0	0.0	45.4	39.5	37.0	57.0	47.1	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	22.7	22.7	35.9	13.0	0.0	45.4	39.5	37.0	57.0	47.1	33.0
LOS by Move:	E	C+	C+	D+	B	A	D	D	D+	E+	D	C-
HCM2kAvgQ:	2	5	5	1	10	0	13	11	12	6	2	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



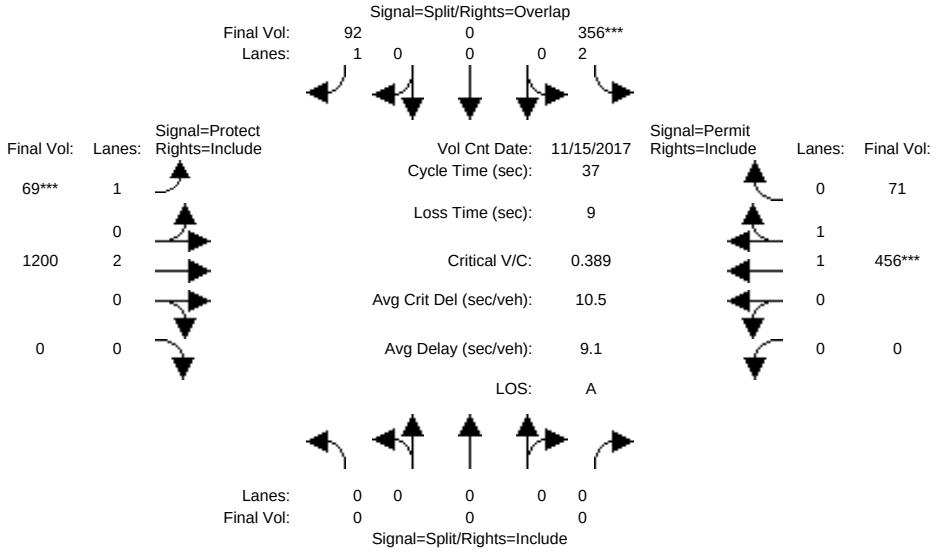
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	53	0	77	56	303	0	0	784	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	53	0	77	56	303	0	0	784	188
Added Vol:	0	0	0	0	0	0	0	9	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	53	0	77	56	312	0	0	835	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	86	62	347	0	0	928	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	59	0	86	62	347	0	0	928	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	59	0	86	62	347	0	0	928	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.62	0.38
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3020	680
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.05	0.04	0.09	0.00	0.00	0.31	0.31
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	8.9	0.0	14.8	5.9	57.1	0.0	0.0	51.2	51.2
Volume/Cap:	0.00	0.00	0.00	0.16	0.00	0.25	0.45	0.12	0.00	0.00	0.45	0.45
Uniform Del:	0.0	0.0	0.0	29.7	0.0	25.4	33.0	2.4	0.0	0.0	5.5	5.5
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.4	2.3	0.0	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.9	0.0	25.7	35.3	2.4	0.0	0.0	5.6	5.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.9	0.0	25.7	35.3	2.4	0.0	0.0	5.6	5.6
LOS by Move:	A	A	A	C	A	C	D+	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	2	2	1	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



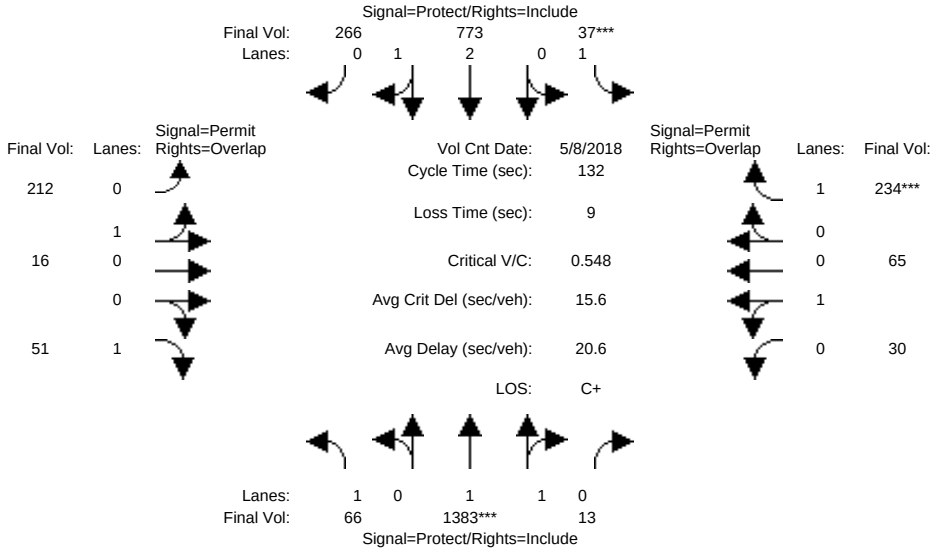
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	317	0	82	61	1009	0	0	400	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	317	0	82	61	1009	0	0	400	63
Added Vol:	0	0	0	0	0	0	0	59	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	317	0	82	61	1068	0	0	406	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	356	0	92	69	1200	0	0	456	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	356	0	92	69	1200	0	0	456	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	356	0	92	69	1200	0	0	456	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.72	0.28
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3203	497
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.05	0.04	0.32	0.00	0.00	0.14	0.14
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.2	0.0	15.2	5.0	17.8	0.0	0.0	12.8	12.8
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.13	0.29	0.66	0.00	0.00	0.41	0.41
Uniform Del:	0.0	0.0	0.0	11.0	0.0	6.8	14.4	7.3	0.0	0.0	9.2	9.2
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.1	0.7	0.9	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.3	0.0	6.9	15.1	8.1	0.0	0.0	9.4	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.3	0.0	6.9	15.1	8.1	0.0	0.0	9.4	9.4
LOS by Move:	A	A	A	B+	A	A	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	1	1	5	0	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



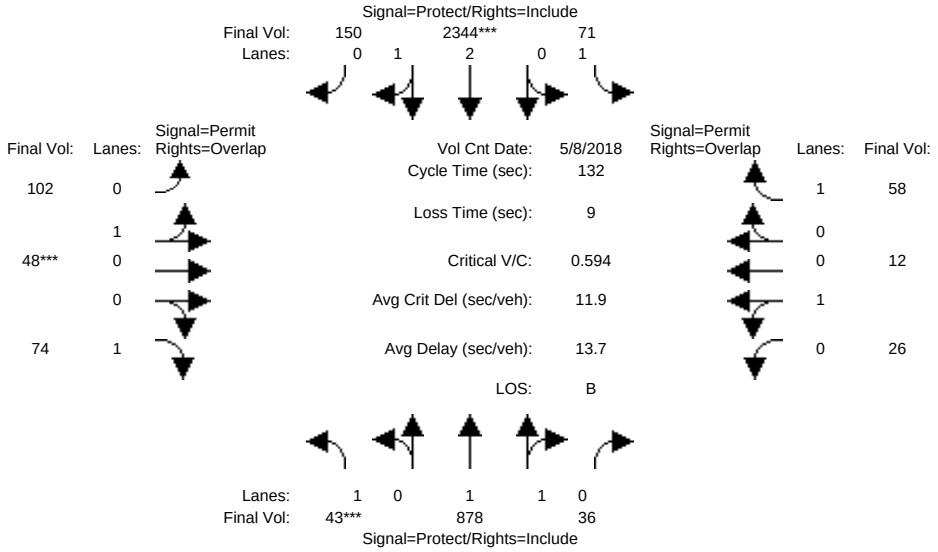
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	66	1376	13	37	733	266	212	16	51	30	65	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	1376	13	37	733	266	212	16	51	30	65	234
Added Vol:	0	7	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	1383	13	37	773	266	212	16	51	30	65	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1383	13	37	773	266	212	16	51	30	65	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1383	13	37	773	266	212	16	51	30	65	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	1383	13	37	773	266	212	16	51	30	65	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.20	0.80	0.93	0.07	1.00	0.32	0.68	1.00
Final Sat.:	1750	3666	34	1750	4164	1433	1674	126	1750	568	1232	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.38	0.38	0.02	0.19	0.19	0.13	0.13	0.03	0.05	0.05	0.13
Crit Moves:		****		****								****
Green Time:	22.8	95.6	95.6	7.0	79.8	79.8	20.4	20.4	43.2	20.4	20.4	27.4
Volume/Cap:	0.22	0.52	0.52	0.40	0.31	0.31	0.82	0.82	0.09	0.34	0.34	0.64
Uniform Del:	46.9	8.1	8.1	60.5	12.7	12.7	54.0	54.0	30.7	49.8	49.8	47.8
IncremntDel:	0.4	0.2	0.2	2.8	0.1	0.1	17.1	17.1	0.1	0.7	0.7	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.3	8.3	8.3	63.3	12.7	12.7	71.0	71.0	30.8	50.5	50.5	51.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.3	8.3	8.3	63.3	12.7	12.7	71.0	71.0	30.8	50.5	50.5	51.7
LOS by Move:	D	A	A	E	B	B	E	E	C	D	D	D-
HCM2kAvgQ:	2	13	13	2	7	7	12	12	2	4	4	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



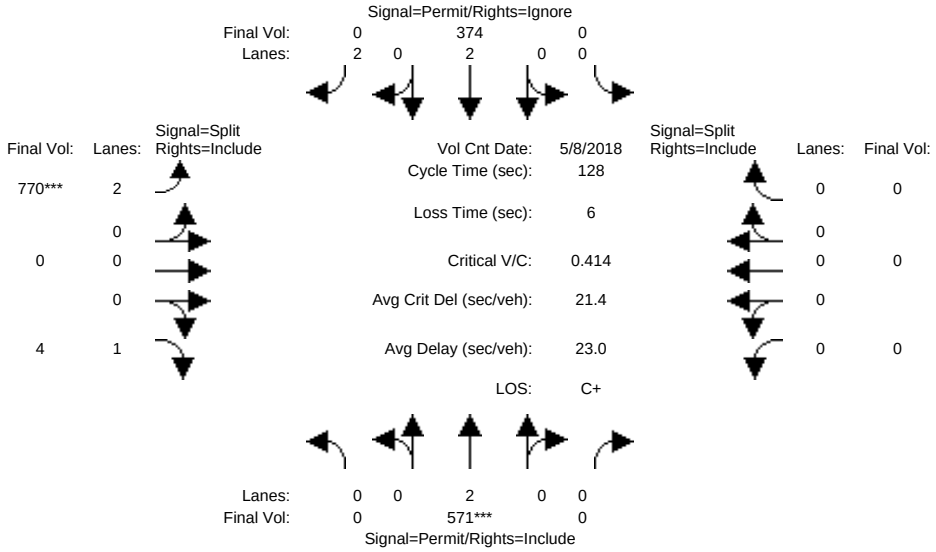
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	831	36	71	2339	150	102	48	74	26	12	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	831	36	71	2339	150	102	48	74	26	12	58
Added Vol:	0	47	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	878	36	71	2344	150	102	48	74	26	12	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	878	36	71	2344	150	102	48	74	26	12	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	878	36	71	2344	150	102	48	74	26	12	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	878	36	71	2344	150	102	48	74	26	12	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.92	0.08	1.00	2.81	0.19	0.68	0.32	1.00	0.68	0.32	1.00
Final Sat.:	1750	3554	146	1750	5263	337	1224	576	1750	1232	568	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.25	0.25	0.04	0.45	0.45	0.08	0.08	0.04	0.02	0.02	0.03
Crit Moves:	****				****			****				
Green Time:	7.0	86.2	86.2	18.5	97.7	97.7	18.3	18.3	25.3	18.3	18.3	36.8
Volume/Cap:	0.46	0.38	0.38	0.29	0.60	0.60	0.60	0.60	0.22	0.15	0.15	0.12
Uniform Del:	60.7	10.5	10.5	50.9	8.0	8.0	53.4	53.4	45.0	50.0	50.0	35.5
IncremntDel:	3.6	0.1	0.1	0.7	0.3	0.3	4.1	4.1	0.3	0.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.3	10.6	10.6	51.5	8.3	8.3	57.5	57.5	45.4	50.3	50.3	35.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.3	10.6	10.6	51.5	8.3	8.3	57.5	57.5	45.4	50.3	50.3	35.6
LOS by Move:	E	B+	B+	D-	A	A	E+	E+	D	D	D	D+
HCM2kAvgQ:	2	8	8	3	16	16	7	7	3	1	1	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



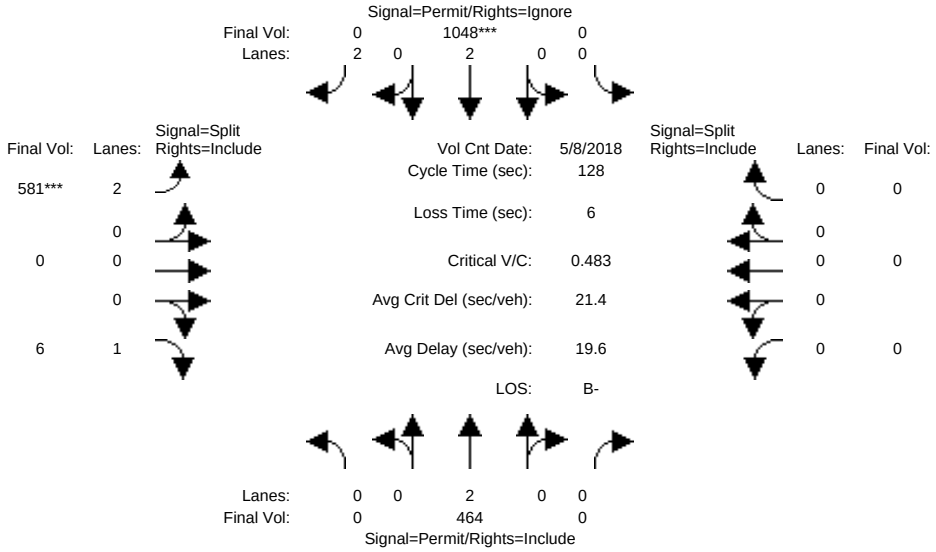
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	561	0	0	334	574	770	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	561	0	0	334	574	770	0	4	0	0	0
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	571	0	0	374	574	770	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	571	0	0	374	0	770	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	571	0	0	374	0	770	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	571	0	0	374	0	770	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.10	0.00	0.24	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	46.4	0.0	0.0	46.4	0.0	75.6	0.0	75.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.41	0.00	0.00	0.27	0.00	0.41	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	30.6	0.0	0.0	28.8	0.0	14.2	0.0	10.8	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	30.8	0.0	0.0	28.9	0.0	14.4	0.0	10.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.8	0.0	0.0	28.9	0.0	14.4	0.0	10.8	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B	A	B+	A	A	A
HCM2kAvgQ:	0	8	0	0	5	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



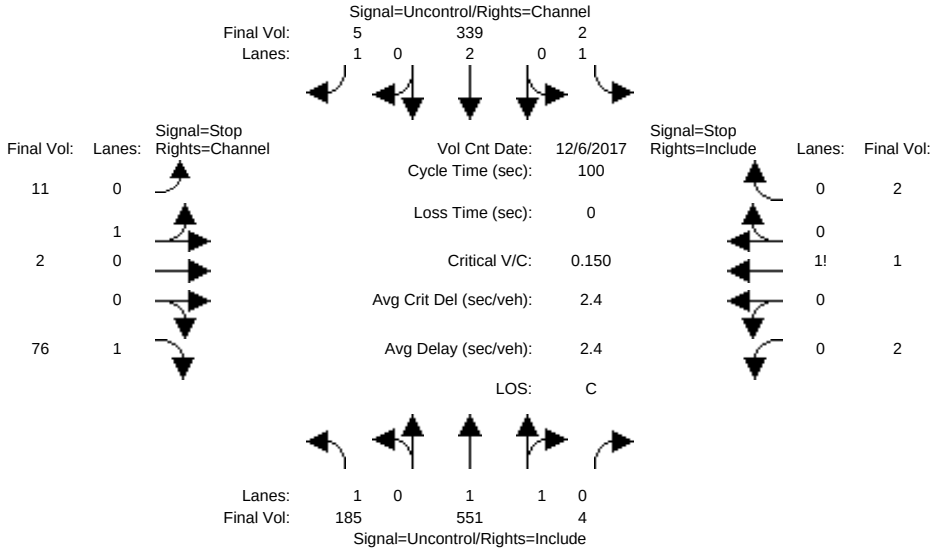
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	399	0	0	1043	1080	581	0	6	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	399	0	0	1043	1080	581	0	6	0	0	0
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	464	0	0	1048	1080	581	0	6	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	464	0	0	1048	0	581	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	464	0	0	1048	0	581	0	6	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	464	0	0	1048	0	581	0	6	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.00	0.00	0.28	0.00	0.18	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	73.1	0.0	0.0	73.1	0.0	48.9	0.0	48.9	0.0	0.0	0.0
Volume/Cap:	0.00	0.21	0.00	0.00	0.48	0.00	0.48	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	13.4	0.0	0.0	16.3	0.0	30.0	0.0	24.5	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.5	0.0	0.0	16.4	0.0	30.3	0.0	24.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.5	0.0	0.0	16.4	0.0	30.3	0.0	24.5	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	C	A	C	A	A	A
HCM2kAvgQ:	0	4	0	0	12	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	185	541	4	2	299	5	11	2	76	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	541	4	2	299	5	11	2	76	2	1	2
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	551	4	2	339	5	11	2	76	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	551	4	2	339	5	11	2	76	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	185	551	4	2	339	5	11	2	76	2	1	2
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	339	xxxx	xxxxx	555	xxxx	xxxxx	989	1268	170	1098	1266	278
Potent Cap.:	1231	xxxx	xxxxx	1026	xxxx	xxxxx	204	170	851	170	171	726
Move Cap.:	1231	xxxx	xxxxx	1026	xxxx	xxxxx	179	144	851	135	145	726
Volume/Cap:	0.15	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.01	0.09	0.01	0.01	0.00
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx
Control Del:	8.4	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	9.6	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	A	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	172	xxxx	xxxxx	xxxx	205	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	27.6	xxxx	xxxxx	xxxxx	23.0	xxxxx
Shared LOS:	*	*	*	*	*	*	D	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			12.3			23.0		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	185	551	4	2	339	5	11	2	76	2	1	2
ApproachDel:	xxxxxx			xxxxxx			12.3			23.0		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=89]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1180]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1180]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	185	551	4	2	339	5	11	2	76	2	1	2

Major Street Volume: 1086
Minor Approach Volume: 89
Minor Approach Volume Threshold: 339

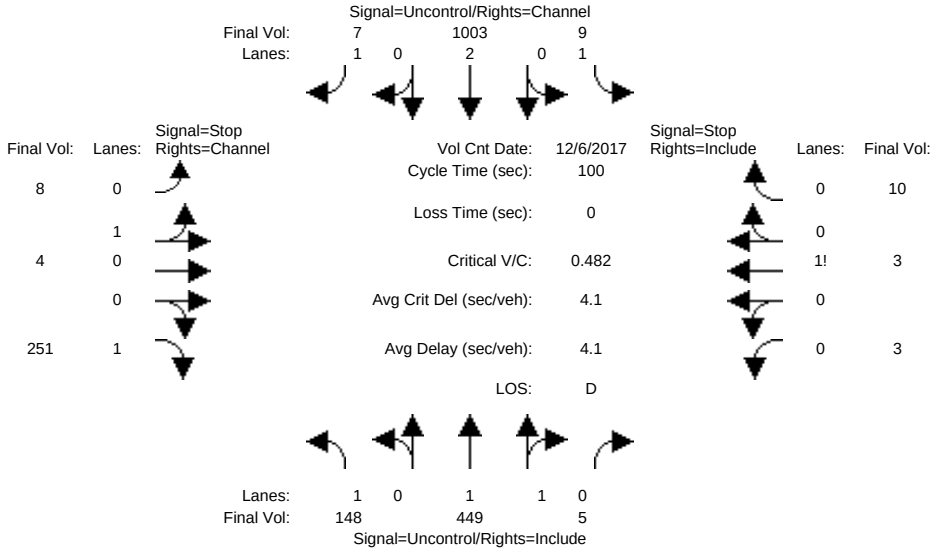
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	148	384	5	9	998	7	8	4	251	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	384	5	9	998	7	8	4	251	3	3	10
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	449	5	9	1003	7	8	4	251	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	449	5	9	1003	7	8	4	251	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	148	449	5	9	1003	7	8	4	251	3	3	10
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1003	xxxx	xxxxx	454	xxxx	xxxxx	1543	1771	502	1269	1769	227
Potent Cap.:	698	xxxx	xxxxx	1117	xxxx	xxxxx	80	84	520	127	84	782
Move Cap.:	698	xxxx	xxxxx	1117	xxxx	xxxxx	63	66	520	52	66	782
Volume/Cap:	0.21	xxxx	xxxx	0.01	xxxx	xxxx	0.13	0.06	0.48	0.06	0.05	0.01
Level Of Service Module:												
2Way95thQ:	0.8	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	2.6	xxxx	xxxx	xxxxx
Control Del:	11.5	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	18.2	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	C	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	64	xxxx	xxxxx	xxxx	138	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	0.4	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	73.6	xxxx	xxxxx	xxxxx	34.4	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			20.7			34.4		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 2	0 1		0 1 0	0 1		0 0 1!	0 0	
Initial Vol:	148	449	5	9	1003	7	8	4	251	3	3	10
ApproachDel:	xxxxxx			xxxxxx			20.7			34.4		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=263]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1900]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=16]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1900]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 2	0 1		0 1 0	0 1		0 0 1!	0 0	
Initial Vol:	148	449	5	9	1003	7	8	4	251	3	3	10

Major Street Volume: 1621
Minor Approach Volume: 263
Minor Approach Volume Threshold: 166

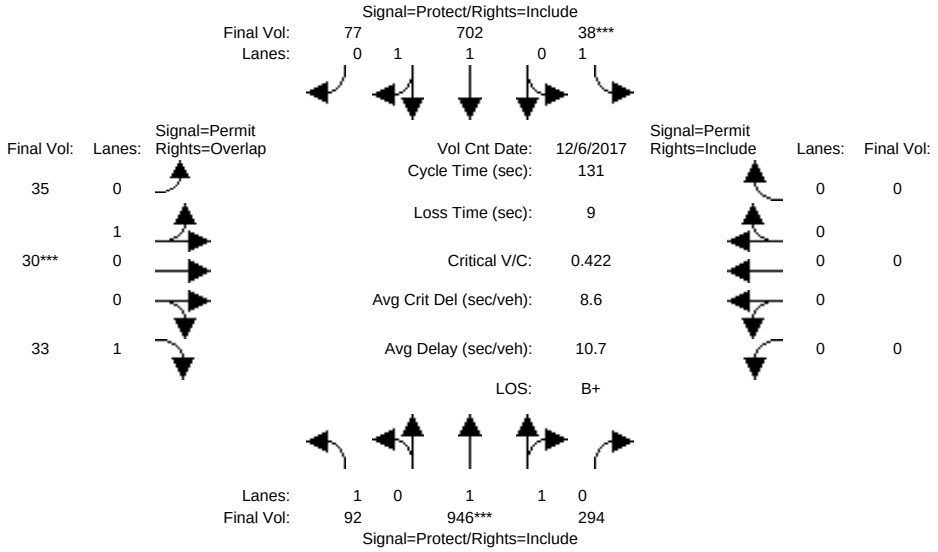
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



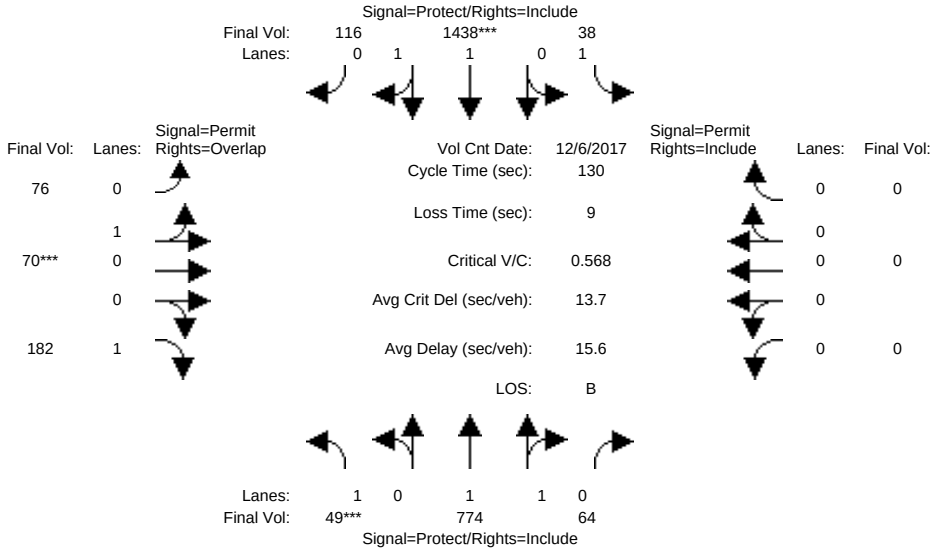
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	92	941	294	38	702	77	35	30	33	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	941	294	38	702	77	35	30	33	0	0	0
Added Vol:	0	5	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	946	294	38	702	77	35	30	33	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	946	294	38	702	77	35	30	33	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	946	294	38	702	77	35	30	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	946	294	38	702	77	35	30	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.51	0.49	1.00	1.80	0.20	0.54	0.46	1.00	0.00	0.00	0.00
Final Sat.:	1750	2822	877	1750	3334	366	969	831	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.34	0.34	0.02	0.21	0.21	0.04	0.04	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	22.4	104	103.8	7.0	88.4	88.4	11.2	11.2	33.6	0.0	0.0	0.0
Volume/Cap:	0.31	0.42	0.42	0.41	0.31	0.31	0.42	0.42	0.07	0.00	0.00	0.00
Uniform Del:	47.5	4.2	4.2	60.0	8.8	8.8	56.8	56.8	36.9	0.0	0.0	0.0
IncremntDel:	0.6	0.1	0.1	2.9	0.1	0.1	1.9	1.9	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	37.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	37.0	0.0	0.0	0.0
LOS by Move:	D	A	A	E	A	A	E+	E+	D+	A	A	A
HCM2kAvgQ:	3	8	8	2	6	6	3	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



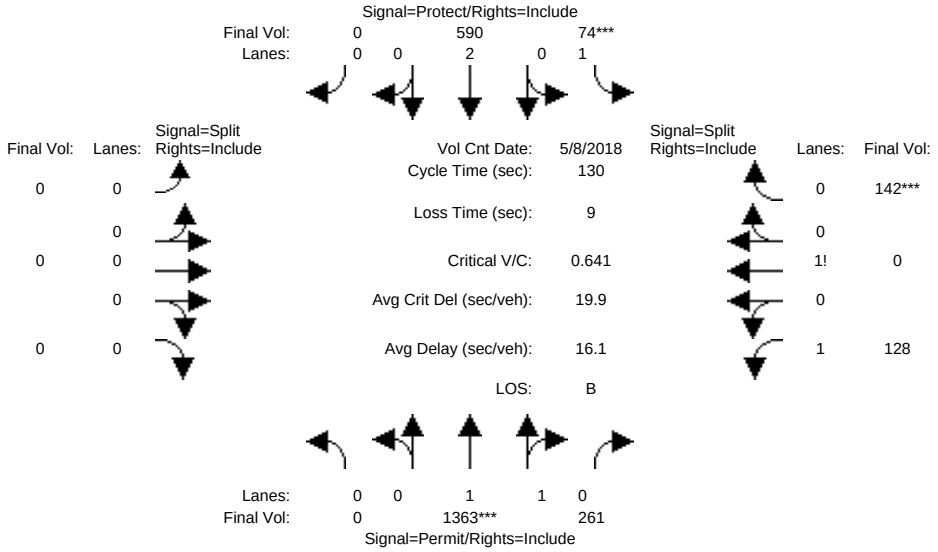
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	49	743	64	38	1438	116	76	70	182	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	743	64	38	1438	116	76	70	182	0	0	0
Added Vol:	0	31	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	774	64	38	1438	116	76	70	182	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	774	64	38	1438	116	76	70	182	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	774	64	38	1438	116	76	70	182	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	774	64	38	1438	116	76	70	182	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	1.85	0.15	0.52	0.48	1.00	0.00	0.00	0.00
Final Sat.:	1750	3417	283	1750	3424	276	937	863	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.02	0.42	0.42	0.08	0.08	0.10	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	7.0	82.9	82.9	19.7	95.5	95.5	18.5	18.5	25.5	0.0	0.0	0.0
Volume/Cap:	0.52	0.36	0.36	0.14	0.57	0.57	0.57	0.57	0.53	0.00	0.00	0.00
Uniform Del:	59.9	11.1	11.1	47.8	7.9	7.9	52.1	52.1	46.9	0.0	0.0	0.0
IncremntDel:	5.1	0.1	0.1	0.2	0.3	0.3	3.1	3.1	1.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	65.0	11.1	11.1	48.1	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.0	11.1	11.1	48.1	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
LOS by Move:	E	B+	B+	D	A	A	E+	E+	D	A	A	A
HCM2kAvgQ:	2	8	8	1	14	14	6	6	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



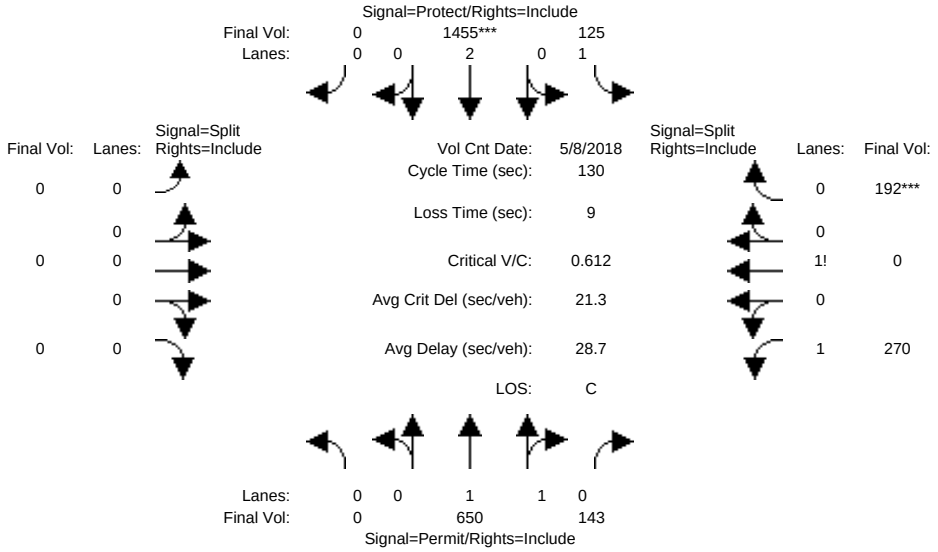
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1363	202	74	590	0	0	0	0	117	0	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1363	202	74	590	0	0	0	0	117	0	137
Added Vol:	0	0	59	0	0	0	0	0	0	11	0	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1363	261	74	590	0	0	0	0	128	0	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1363	261	74	590	0	0	0	0	128	0	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1363	261	74	590	0	0	0	0	128	0	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1363	261	74	590	0	0	0	0	128	0	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.67	0.33	1.00	2.00	0.00	0.00	0.00	0.00	1.32	0.00	0.68
Final Sat.:	0	3105	595	1750	3800	0	0	0	0	2304	0	1230
Capacity Analysis Module:												
Vol/Sat:	0.00	0.44	0.44	0.04	0.16	0.00	0.00	0.00	0.00	0.06	0.00	0.12
Crit Moves:		****		****								****
Green Time:	0.0	89.0	89.0	8.6	97.6	0.0	0.0	0.0	0.0	23.4	0.0	23.4
Volume/Cap:	0.00	0.64	0.64	0.64	0.21	0.00	0.00	0.00	0.00	0.31	0.00	0.64
Uniform Del:	0.0	11.5	11.5	59.2	4.8	0.0	0.0	0.0	0.0	46.3	0.0	49.4
IncremntDel:	0.0	0.6	0.6	11.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	12.1	12.1	70.8	4.8	0.0	0.0	0.0	0.0	46.5	0.0	52.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.1	12.1	70.8	4.8	0.0	0.0	0.0	0.0	46.5	0.0	52.7
LOS by Move:	A	B	B	E	A	A	A	A	A	D	A	D-
HCM2kAvgQ:	0	18	18	3	3	0	0	0	0	3	0	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



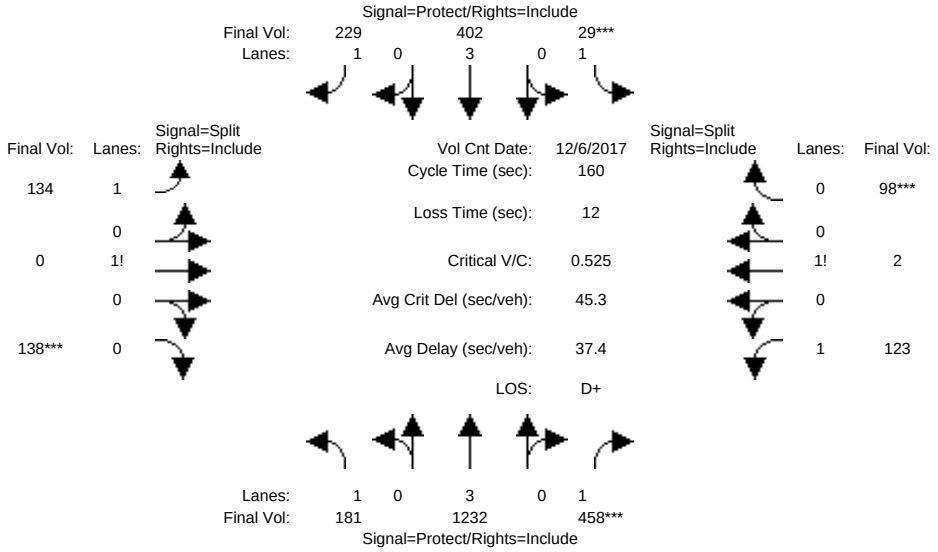
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	650	136	125	1455	0	0	0	0	201	0	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	650	136	125	1455	0	0	0	0	201	0	161
Added Vol:	0	0	7	0	0	0	0	0	0	69	0	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	650	143	125	1455	0	0	0	0	270	0	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	650	143	125	1455	0	0	0	0	270	0	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	650	143	125	1455	0	0	0	0	270	0	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	650	143	125	1455	0	0	0	0	270	0	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.63	0.37	1.00	2.00	0.00	0.00	0.00	0.00	1.41	0.00	0.59
Final Sat.:	0	3032	667	1750	3800	0	0	0	0	2472	0	1028
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.07	0.38	0.00	0.00	0.00	0.00	0.11	0.00	0.19
Crit Moves:					****							****
Green Time:	0.0	33.1	33.1	59.1	92.2	0.0	0.0	0.0	0.0	28.8	0.0	28.8
Volume/Cap:	0.00	0.84	0.84	0.16	0.54	0.00	0.00	0.00	0.00	0.49	0.00	0.84
Uniform Del:	0.0	46.0	46.0	20.8	8.9	0.0	0.0	0.0	0.0	44.2	0.0	48.4
IncremntDel:	0.0	7.0	7.0	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	11.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	53.0	53.0	20.9	9.1	0.0	0.0	0.0	0.0	44.6	0.0	59.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	53.0	53.0	20.9	9.1	0.0	0.0	0.0	0.0	44.6	0.0	59.7
LOS by Move:	A	D-	D-	C+	A	A	A	A	A	D	A	E+
HCM2kAvgQ:	0	16	16	3	13	0	0	0	0	7	0	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



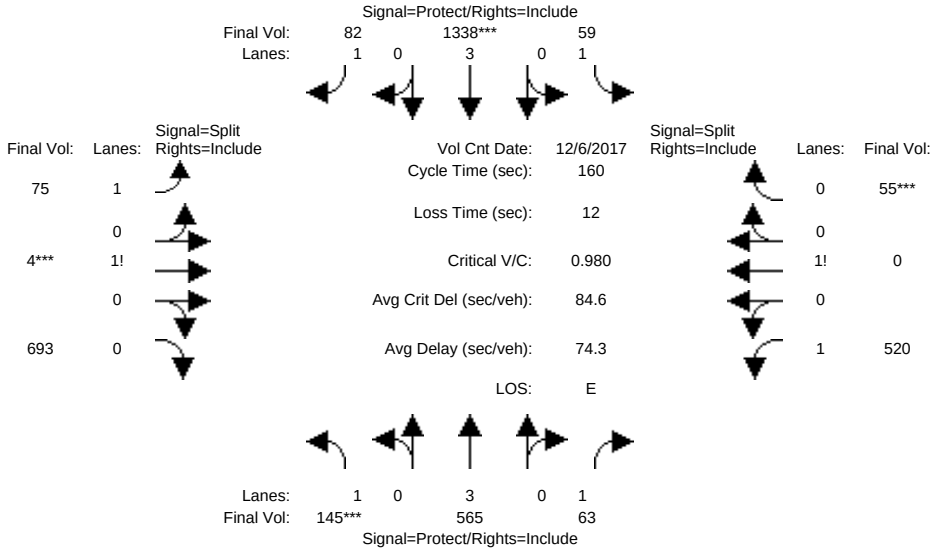
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1222	458	29	362	229	134	0	138	123	2	98
Added Vol:	5	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	1232	458	29	402	229	134	0	138	123	2	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	181	1232	458	29	402	229	134	0	138	123	2	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	1232	458	29	402	229	134	0	138	123	2	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	181	1232	458	29	402	229	134	0	138	123	2	98
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.33	0.00	0.67	1.38	0.01	0.61
Final Sat.:	1750	5700	1750	1750	5700	1750	2333	0	1200	2416	22	1062
Capacity Analysis Module:												
Vol/Sat:	0.10	0.22	0.26	0.02	0.07	0.13	0.06	0.00	0.11	0.05	0.09	0.09
Crit Moves:			****	****					****			****
Green Time:	37.8	78.7	78.7	7.0	47.9	47.9	34.6	0.0	34.6	27.7	27.7	27.7
Volume/Cap:	0.44	0.44	0.53	0.38	0.24	0.44	0.27	0.00	0.53	0.29	0.53	0.53
Uniform Del:	52.0	26.4	28.0	74.4	42.3	45.2	52.2	0.0	55.6	57.6	60.2	60.2
IncremntDel:	0.7	0.1	0.6	3.1	0.1	0.6	0.1	0.0	1.1	0.2	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.8	26.5	28.6	77.5	42.4	45.8	52.3	0.0	56.6	57.8	61.5	61.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.8	26.5	28.6	77.5	42.4	45.8	52.3	0.0	56.6	57.8	61.5	61.5
LOS by Move:	D-	C	C	E-	D	D	D-	A	E+	E+	E	E
HCM2kAvgQ:	8	12	16	1	5	9	4	0	10	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



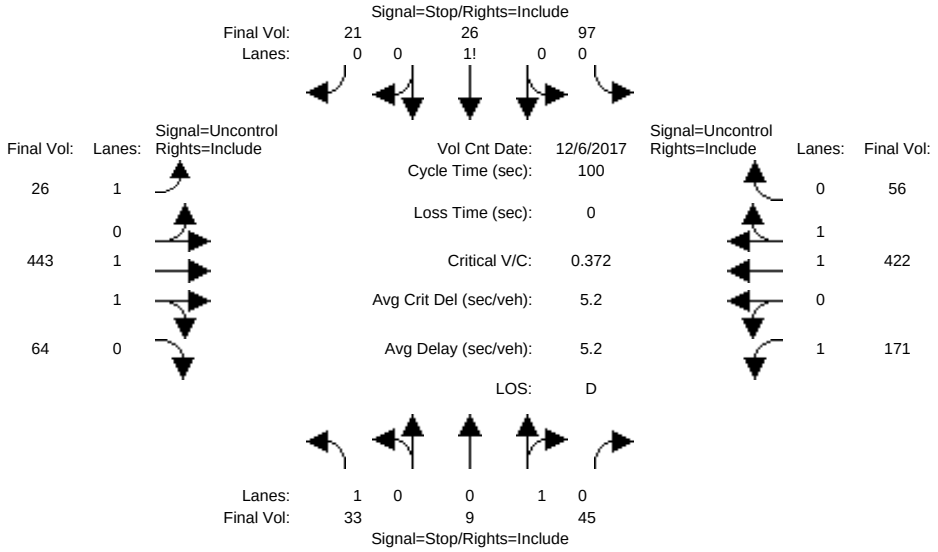
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	500	63	59	1333	82	75	4	693	520	0	55
Added Vol:	31	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	565	63	59	1338	82	75	4	693	520	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	565	63	59	1338	82	75	4	693	520	0	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	565	63	59	1338	82	75	4	693	520	0	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	565	63	59	1338	82	75	4	693	520	0	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.05	0.01	0.94	1.83	0.00	0.17
Final Sat.:	1750	5700	1750	1750	5700	1750	1842	10	1696	3194	0	306
Capacity Analysis Module:												
Vol/Sat:	0.08	0.10	0.04	0.03	0.23	0.05	0.04	0.41	0.41	0.16	0.00	0.18
Crit Moves:	****				****			****				****
Green Time:	13.5	36.0	36.0	15.9	38.3	38.3	66.7	66.7	66.7	29.4	0.0	29.4
Volume/Cap:	0.98	0.44	0.16	0.34	0.98	0.20	0.10	0.98	0.98	0.89	0.00	0.98
Uniform Del:	73.1	53.4	49.9	67.2	60.4	48.5	28.3	46.0	46.0	63.7	0.0	65.0
IncremntDel:	67.6	0.2	0.2	1.2	19.6	0.2	0.0	27.0	27.0	13.9	0.0	31.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	140.7	53.6	50.0	68.3	80.0	48.8	28.3	72.9	72.9	77.5	0.0	96.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	140.7	53.6	50.0	68.3	80.0	48.8	28.3	72.9	72.9	77.5	0.0	96.9
LOS by Move:	F	D-	D	E	F	D	C	E	E	E-	A	F
HCM2kAvgQ:	9	8	3	3	25	3	2	43	43	18	0	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	69	0	21	26	375	0	0	418	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	69	0	21	26	375	0	0	418	55
Added Vol:	33	9	46	28	26	0	0	68	64	171	4	1
Volume Adju:	0	0	-1	0	0	0	0	0	0	0	0	0
Initial Fut:	33	9	45	97	26	21	26	443	64	171	422	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	9	45	97	26	21	26	443	64	171	422	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	33	9	45	97	26	21	26	443	64	171	422	56
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1093	1347	254	1070	1351	239	478	xxxx	xxxxx	507	xxxx	xxxxx
Potent Cap.:	171	152	752	178	152	768	1095	xxxx	xxxxx	1068	xxxx	xxxxx
Move Cap.:	121	125	752	137	124	768	1095	xxxx	xxxxx	1068	xxxx	xxxxx
Total Cap:	284	267	xxxxx	261	251	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.12	0.03	0.06	0.37	0.10	0.03	0.02	xxxx	xxxx	0.16	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.6	xxxx	xxxxx
Control Del:	19.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	9.0	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	577	xxxx	287	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	0.3	xxxxx	2.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	11.9	xxxxx	29.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	B	*	D	*	*	*	*	*	*	*
ApproachDel:		14.7			29.6		xxxxxx			xxxxxx		
ApproachLOS:		B			D		*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

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Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	33	9	45	97	26	21	26	443	64	171	422	56
ApproachDel:	14.7			29.6			xxxxxx			xxxxxx		

Approach[northbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=87]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1413]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=144]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1413]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	33	9	45	97	26	21	26	443	64	171	422	56

Major Street Volume: 1182
Minor Approach Volume: 144
Minor Approach Volume Threshold: 227

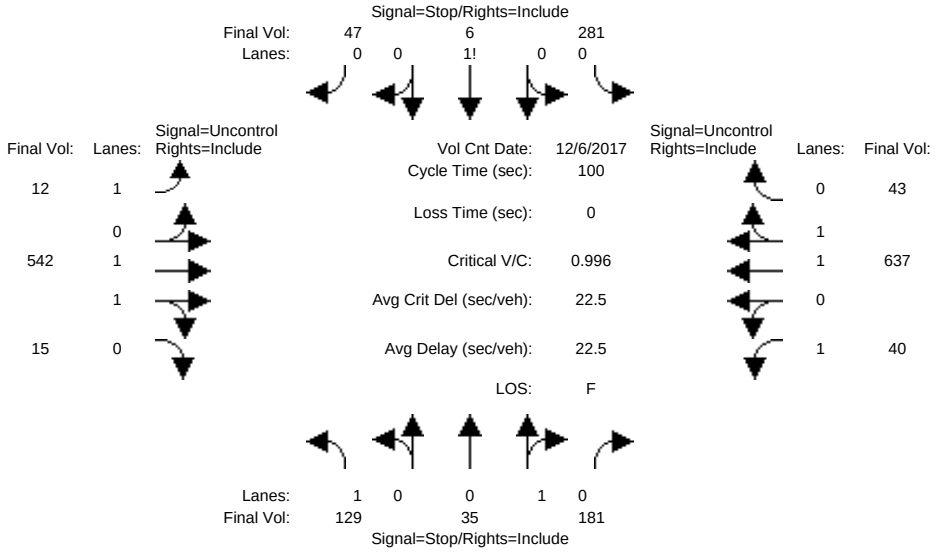
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	0	0	0	281	0	47	12	542	0	0	533	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	281	0	47	12	542	0	0	533	15
Added Vol:	129	35	181	0	6	0	0	0	15	40	104	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	35	181	281	6	47	12	542	15	40	637	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	35	181	281	6	47	12	542	15	40	637	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	129	35	181	281	6	47	12	542	15	40	637	43
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	975	1334	279	1051	1320	340	680	xxxx	xxxxx	557	xxxx	xxxxx
Potent Cap.:	209	155	725	184	158	662	922	xxxx	xxxxx	1024	xxxx	xxxxx
Move Cap.:	181	147	725	108	150	662	922	xxxx	xxxxx	1024	xxxx	xxxxx
Total Cap:	368	319	xxxxx	282	320	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.35	0.11	0.25	1.00	0.02	0.07	0.01	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	1.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	20.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	8.7	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	601	xxxx	308	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	1.6	xxxxx	13.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	14.3	xxxxx	114	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	B	*	F	*	*	*	*	*	*	*
ApproachDel:		16.4			114.0			xxxxxx			xxxxxx	
ApproachLOS:		C			F			*			*	

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

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Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	129	35	181	281	6	47	12	542	15	40	637	43
ApproachDel:	16.4			114.0			xxxxxx			xxxxxx		

Approach[northbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.6]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=345]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1968]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=10.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=334]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1968]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	129	35	181	281	6	47	12	542	15	40	637	43

Major Street Volume: 1289
Minor Approach Volume: 345
Minor Approach Volume Threshold: 265

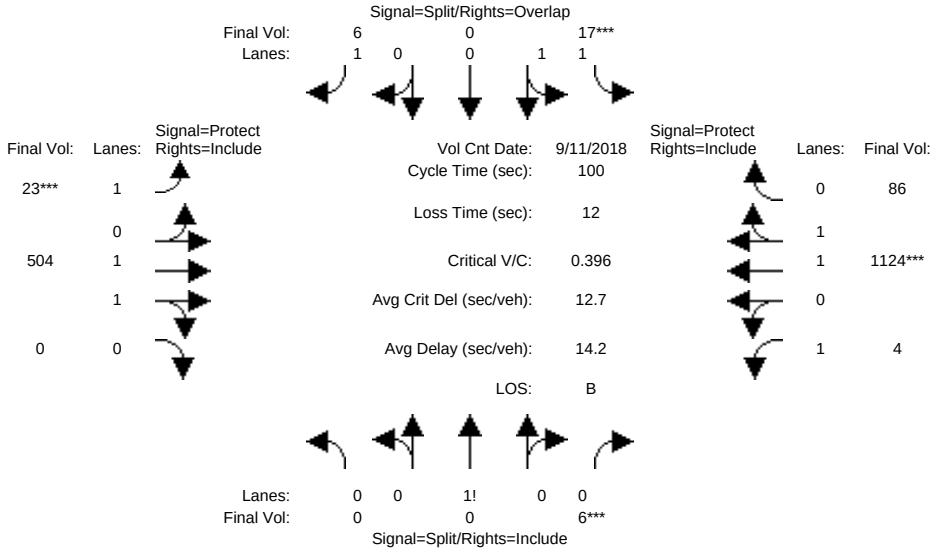
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



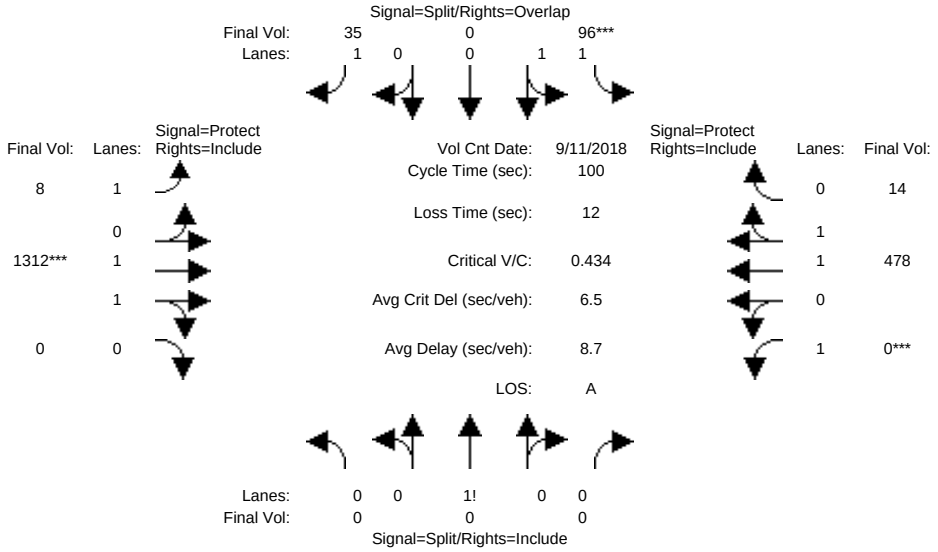
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	0	0	6	17	0	6	23	453	0	4	771	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	6	17	0	6	23	453	0	4	771	86
Added Vol:	0	0	0	0	0	0	0	51	0	0	353	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	6	17	0	6	23	504	0	4	1124	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	6	17	0	6	23	504	0	4	1124	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	6	17	0	6	23	504	0	4	1124	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	6	17	0	6	23	504	0	4	1124	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	0	1750	3550	0	1750	1750	3700	0	1750	3437	263
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.33	0.33
Crit Moves:			****	****			****				****	
Green Time:	0.0	0.0	10.0	10.0	0.0	17.0	7.0	44.9	0.0	23.1	61.0	61.0
Volume/Cap:	0.00	0.00	0.03	0.05	0.00	0.02	0.19	0.30	0.00	0.01	0.54	0.54
Uniform Del:	0.0	0.0	40.6	40.7	0.0	34.6	43.8	17.6	0.0	29.6	11.3	11.3
IncremntDel:	0.0	0.0	0.1	0.1	0.0	0.0	0.7	0.1	0.0	0.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	17.7	0.0	29.7	11.6	11.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	17.7	0.0	29.7	11.6	11.6
LOS by Move:	A	A	D	D	A	C-	D	B	A	C	B+	B+
HCM2kAvgQ:	0	0	0	0	0	0	1	5	0	0	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



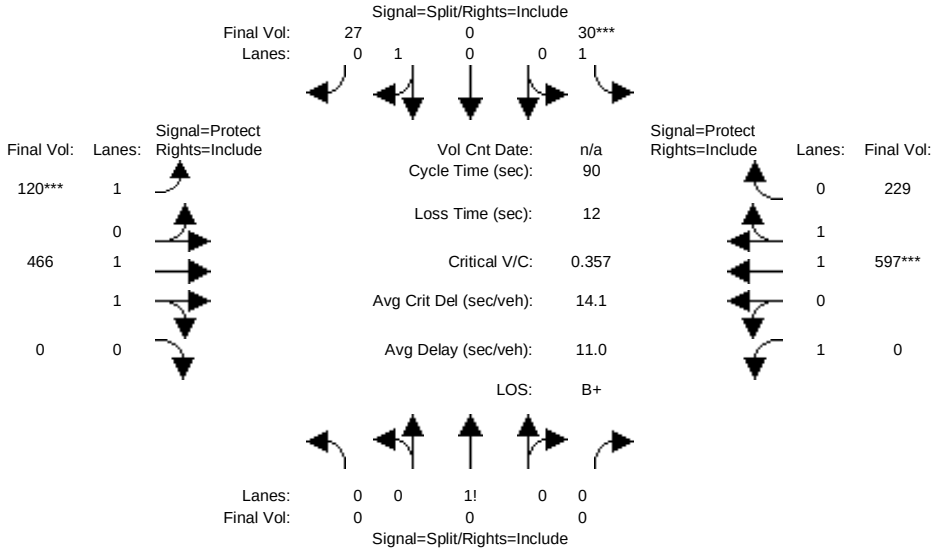
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	0	0	0	96	0	35	8	985	0	0	437	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	96	0	35	8	985	0	0	437	14
Added Vol:	0	0	0	0	0	0	0	327	0	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	96	0	35	8	1312	0	0	478	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	35	8	1312	0	0	478	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	96	0	35	8	1312	0	0	478	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	96	0	35	8	1312	0	0	478	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.97	0.95
Lanes:	0.00	1.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	0	1750	0	3550	0	1750	1750	3700	0	1750	3595	105
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.35	0.00	0.00	0.13	0.13
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	10.0	0.0	36.9	26.9	78.0	0.0	0.0	51.1	51.1
Volume/Cap:	0.00	0.00	0.00	0.27	0.00	0.05	0.02	0.45	0.00	0.00	0.26	0.26
Uniform Del:	0.0	0.0	0.0	41.6	0.0	20.3	26.8	3.7	0.0	0.0	13.8	13.8
IncremntDel:	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	42.0	0.0	20.3	26.9	3.9	0.0	0.0	13.9	13.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	42.0	0.0	20.3	26.9	3.9	0.0	0.0	13.9	13.9
LOS by Move:	A	A	A	D	A	C+	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	1	0	7	0	0	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



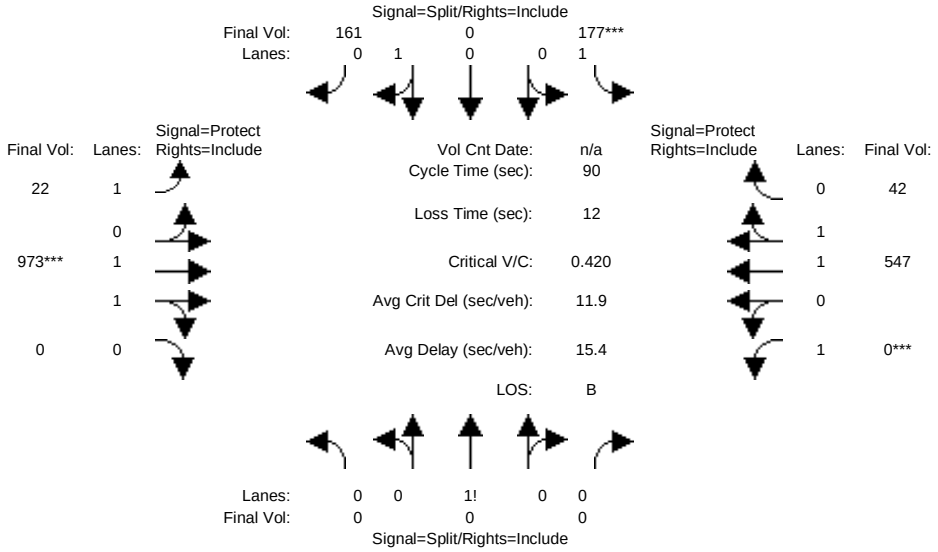
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	444	0	0	473	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	444	0	0	473	0
Added Vol:	0	0	0	30	0	27	120	22	0	0	124	229
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	30	0	27	120	466	0	0	597	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	30	0	27	120	466	0	0	597	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	30	0	27	120	466	0	0	597	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	30	0	27	120	466	0	0	597	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	0.00	1.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	1.00	1.43	0.57
Final Sat.:	0	1750	0	1750	0	1800	1750	3700	0	1750	2673	1025
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.02	0.07	0.13	0.00	0.00	0.22	0.22
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	16.0	68.0	0.0	0.0	52.0	52.0
Volume/Cap:	0.00	0.00	0.00	0.15	0.00	0.14	0.39	0.17	0.00	0.00	0.39	0.39
Uniform Del:	0.0	0.0	0.0	36.2	0.0	36.1	32.7	3.1	0.0	0.0	10.3	10.3
IncremntDel:	0.0	0.0	0.0	0.4	0.0	0.3	0.8	0.0	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	36.5	0.0	36.4	33.5	3.1	0.0	0.0	10.4	10.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.5	0.0	36.4	33.5	3.1	0.0	0.0	10.4	10.4
LOS by Move:	A	A	A	D+	A	D+	C-	A	A	A	B+	B+
HCM2kAvgQ:	0	0	0	1	0	1	3	2	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



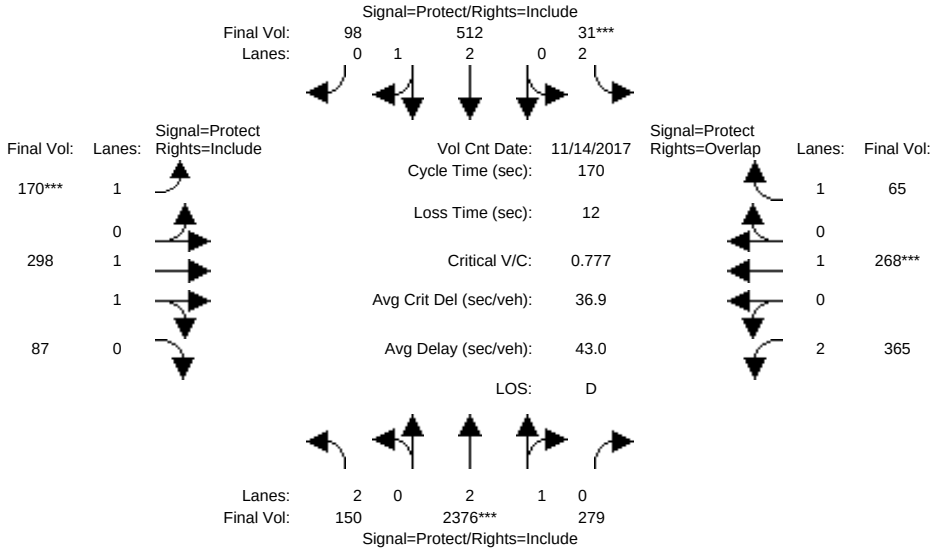
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	823	0	0	548	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	823	0	0	548	0
Added Vol:	0	0	0	177	0	161	22	150	0	0	-1	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	177	0	161	22	973	0	0	547	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	177	0	161	22	973	0	0	547	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	177	0	161	22	973	0	0	547	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	177	0	161	22	973	0	0	547	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	0.00	1.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	1750	0	1750	0	1800	1750	3700	0	1750	3436	264
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.09	0.01	0.26	0.00	0.00	0.16	0.16
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	21.7	0.0	21.7	18.5	56.3	0.0	0.0	37.8	37.8
Volume/Cap:	0.00	0.00	0.00	0.42	0.00	0.37	0.06	0.42	0.00	0.00	0.38	0.38
Uniform Del:	0.0	0.0	0.0	28.9	0.0	28.5	28.8	8.5	0.0	0.0	18.0	18.0
IncremntDel:	0.0	0.0	0.0	0.7	0.0	0.5	0.1	0.1	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.5	0.0	29.0	28.8	8.7	0.0	0.0	18.1	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.5	0.0	29.0	28.8	8.7	0.0	0.0	18.1	18.1
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B-	B-
HCM2kAvgQ:	0	0	0	5	0	4	0	7	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



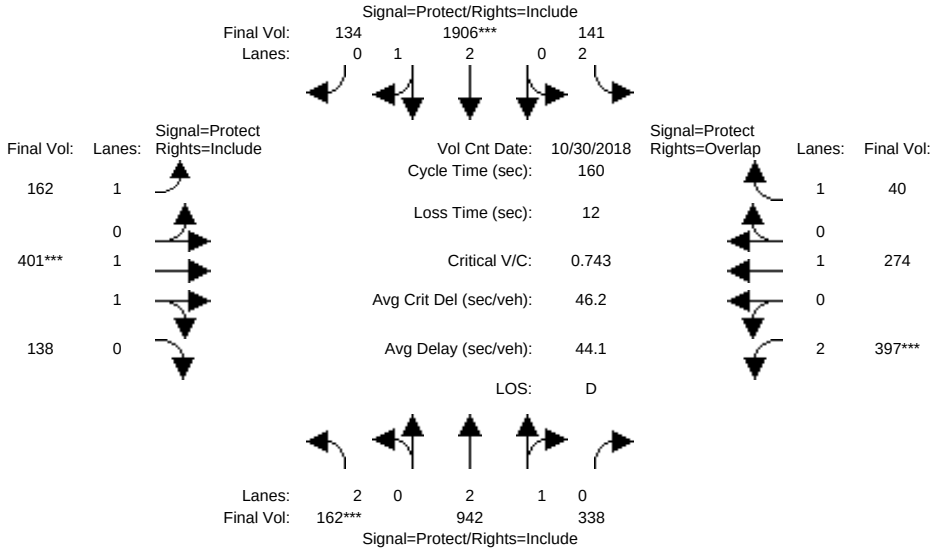
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	150	2376	257	31	512	98	170	298	87	361	268	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	2376	257	31	512	98	170	298	87	361	268	65
Added Vol:	0	0	22	0	0	0	0	0	0	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2376	279	31	512	98	170	298	87	365	268	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	2376	279	31	512	98	170	298	87	365	268	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	2376	279	31	512	98	170	298	87	365	268	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	2376	279	31	512	98	170	298	87	365	268	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.67	0.33	2.00	2.50	0.50	1.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	3150	5011	588	3150	4699	899	1750	2863	836	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.11	0.11	0.10	0.10	0.10	0.12	0.14	0.04
Crit Moves:		****		****			****				****	
Green Time:	32.7	101	100.5	7.0	74.8	74.8	20.6	23.9	23.9	26.6	29.9	36.9
Volume/Cap:	0.25	0.80	0.80	0.24	0.25	0.25	0.80	0.74	0.74	0.74	0.80	0.17
Uniform Del:	58.2	27.0	27.0	78.9	29.9	29.9	72.7	70.1	70.1	68.4	67.2	54.1
IncremntDel:	0.2	1.5	1.5	1.0	0.1	0.1	19.3	5.6	5.6	5.9	13.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.4	28.5	28.5	79.9	30.0	30.0	92.0	75.7	75.7	74.3	80.2	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.4	28.5	28.5	79.9	30.0	30.0	92.0	75.7	75.7	74.3	80.2	54.3
LOS by Move:	E+	C	C	E-	C	C	F	E-	E-	E	F	D-
HCM2kAvgQ:	4	37	37	1	6	6	11	11	11	11	14	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



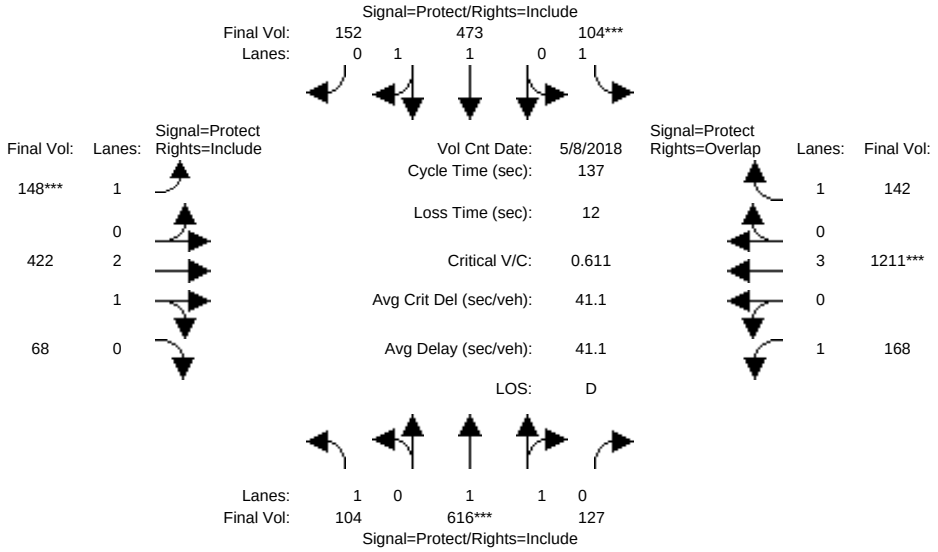
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	162	942	336	141	1906	134	162	401	138	372	274	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	942	336	141	1906	134	162	401	138	372	274	40
Added Vol:	0	0	2	0	0	0	0	0	0	25	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	942	338	141	1906	134	162	401	138	397	274	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	942	338	141	1906	134	162	401	138	397	274	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	942	338	141	1906	134	162	401	138	397	274	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	942	338	141	1906	134	162	401	138	397	274	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.18	0.82	2.00	2.80	0.20	1.00	1.47	0.53	2.00	1.00	1.00
Final Sat.:	3150	4119	1478	3150	5232	368	1750	2752	947	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.23	0.04	0.36	0.36	0.09	0.15	0.15	0.13	0.14	0.02
Crit Moves:	****				****			****			****	
Green Time:	11.1	74.8	74.8	14.7	78.4	78.4	22.9	31.4	31.4	27.1	35.6	50.3
Volume/Cap:	0.74	0.49	0.49	0.49	0.74	0.74	0.65	0.74	0.74	0.74	0.65	0.07
Uniform Del:	73.1	29.4	29.4	69.1	32.7	32.7	64.8	60.5	60.5	63.1	56.5	38.5
IncremntDel:	12.9	0.1	0.1	1.3	1.1	1.1	5.8	4.2	4.2	5.6	3.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	86.0	29.5	29.5	70.4	33.8	33.8	70.6	64.7	64.7	68.7	60.0	38.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.0	29.5	29.5	70.4	33.8	33.8	70.6	64.7	64.7	68.7	60.0	38.6
LOS by Move:	F	C	C	E	C-	C-	E	E	E	E	E+	D+
HCM2kAvgQ:	5	14	14	4	27	27	9	14	14	11	12	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



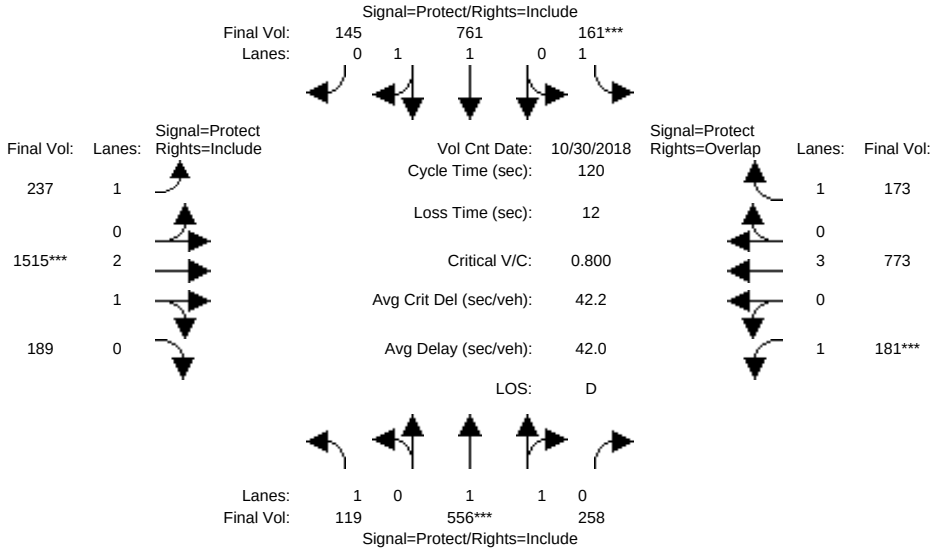
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	104	594	127	104	469	152	148	422	68	168	1211	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	594	127	104	469	152	148	422	68	168	1211	142
Added Vol:	0	22	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	616	127	104	473	152	148	422	68	168	1211	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	616	127	104	473	152	148	422	68	168	1211	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	616	127	104	473	152	148	422	68	168	1211	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	616	127	104	473	152	148	422	68	168	1211	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.65	0.35	1.00	1.50	0.50	1.00	2.57	0.43	1.00	3.00	1.00
Final Sat.:	1750	3067	632	1750	2799	900	1750	4822	777	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.20	0.06	0.17	0.17	0.08	0.09	0.09	0.10	0.21	0.08
Crit Moves:		****		****			****				****	
Green Time:	15.2	45.0	45.0	13.3	43.2	43.2	19.0	31.8	31.8	34.9	47.7	61.0
Volume/Cap:	0.54	0.61	0.61	0.61	0.54	0.54	0.61	0.38	0.38	0.38	0.61	0.18
Uniform Del:	57.6	38.6	38.6	59.3	38.7	38.7	55.5	44.3	44.3	42.1	37.0	23.0
IncremntDel:	2.9	0.9	0.9	6.4	0.5	0.5	4.5	0.2	0.2	0.5	0.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	60.5	39.5	39.5	65.7	39.1	39.1	60.1	44.5	44.5	42.7	37.6	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.5	39.5	39.5	65.7	39.1	39.1	60.1	44.5	44.5	42.7	37.6	23.1
LOS by Move:	E	D	D	E	D	D	E	D	D	D	D+	C
HCM2kAvgQ:	4	13	13	5	11	11	6	6	6	6	13	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



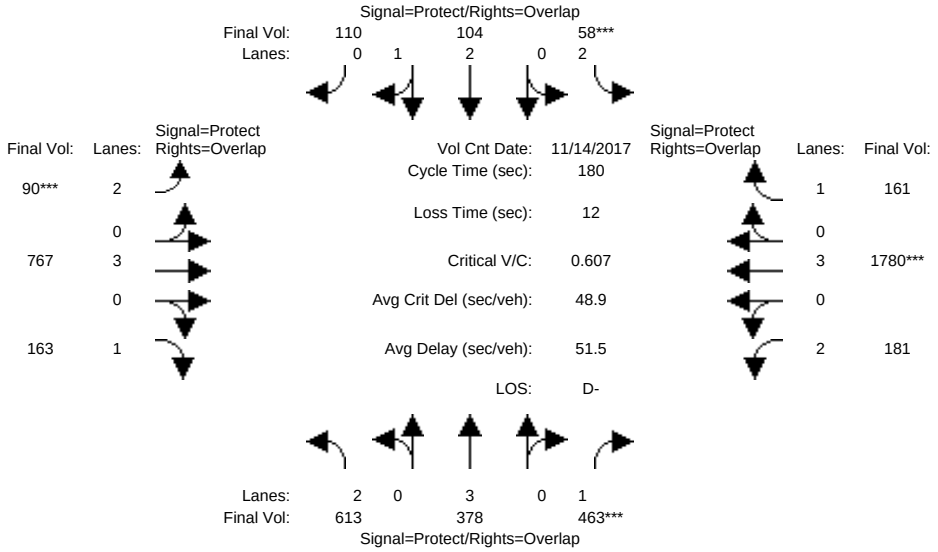
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	119	554	258	161	736	145	237	1515	189	181	773	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	554	258	161	736	145	237	1515	189	181	773	173
Added Vol:	0	2	0	0	25	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	556	258	161	761	145	237	1515	189	181	773	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	556	258	161	761	145	237	1515	189	181	773	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	556	258	161	761	145	237	1515	189	181	773	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	556	258	161	761	145	237	1515	189	181	773	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.35	0.65	1.00	1.67	0.33	1.00	2.65	0.35	1.00	3.00	1.00
Final Sat.:	1750	2526	1172	1750	3107	592	1750	4978	621	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.09	0.24	0.24	0.14	0.30	0.30	0.10	0.14	0.10
Crit Moves:		****		****				****		****		
Green Time:	10.2	33.0	33.0	13.8	36.6	36.6	30.6	45.7	45.7	15.5	30.6	44.4
Volume/Cap:	0.80	0.80	0.80	0.80	0.80	0.80	0.53	0.80	0.80	0.80	0.53	0.27
Uniform Del:	53.9	40.4	40.4	51.8	38.3	38.3	38.5	33.1	33.1	50.7	38.5	26.4
IncremntDel:	26.0	4.6	4.6	19.9	4.2	4.2	1.2	2.2	2.2	18.0	0.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	79.9	45.0	45.0	71.6	42.5	42.5	39.8	35.3	35.3	68.7	38.9	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.9	45.0	45.0	71.6	42.5	42.5	39.8	35.3	35.3	68.7	38.9	26.6
LOS by Move:	E-	D	D	E	D	D	D	D+	D+	E	D+	C
HCM2kAvgQ:	5	15	15	7	16	16	8	20	20	8	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



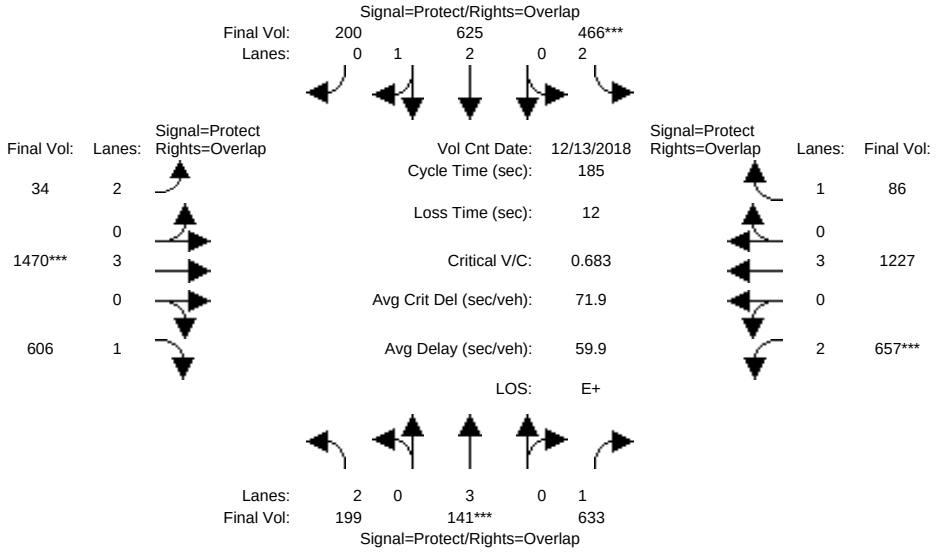
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	613	378	463	58	104	110	90	713	163	181	1770	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	378	463	58	104	110	90	713	163	181	1770	161
Added Vol:	0	0	0	0	0	0	0	54	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	378	463	58	104	110	90	767	163	181	1780	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	378	463	58	104	110	90	767	163	181	1780	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	378	463	58	104	110	90	767	163	181	1780	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	378	463	58	104	110	90	767	163	181	1780	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.07	0.26	0.02	0.03	0.06	0.03	0.13	0.09	0.06	0.31	0.09
Crit Moves:			****	****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.90	0.21	0.62	0.28	0.15	0.25	0.40	0.36	0.16	0.55	0.77	0.20
Uniform Del:	68.7	44.3	40.3	80.1	62.5	54.1	79.9	41.1	16.9	76.7	46.4	27.8
IncremntDel:	15.1	0.1	1.6	0.7	0.1	0.2	1.2	0.1	0.1	2.1	1.7	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	41.2	17.0	78.7	48.1	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	41.2	17.0	78.7	48.1	28.0
LOS by Move:	F	D	D	F	E	D-	F	D	B	E-	D	C
HCM2kAvgQ:	21	5	21	2	2	5	3	10	4	6	29	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



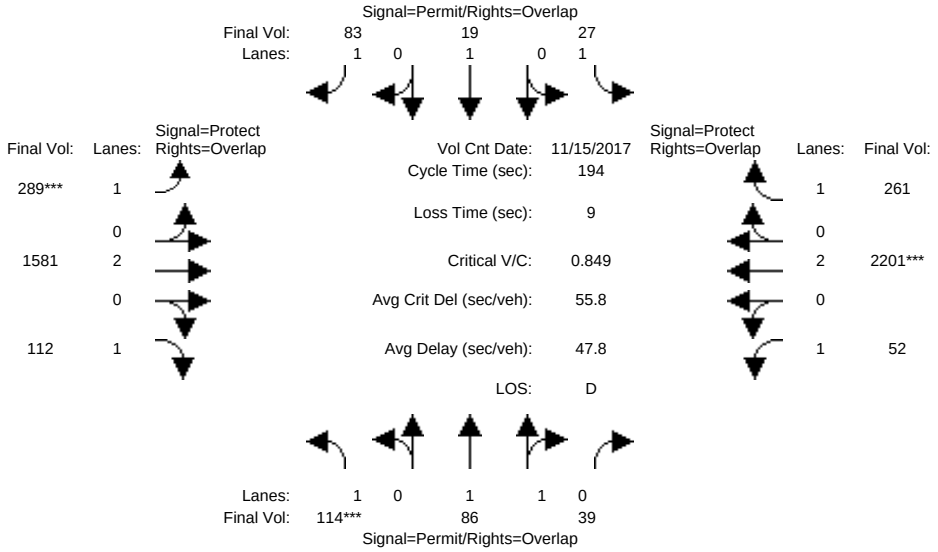
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	199	141	633	466	625	200	34	1464	606	657	1165	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	141	633	466	625	200	34	1464	606	657	1165	86
Added Vol:	0	0	0	0	0	0	0	6	0	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	141	633	466	625	200	34	1470	606	657	1227	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	141	633	466	625	200	34	1470	606	657	1227	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	141	633	466	625	200	34	1470	606	657	1227	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	141	633	466	625	200	34	1470	606	657	1227	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.25	0.75	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4241	1357	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.36	0.15	0.15	0.15	0.01	0.26	0.35	0.21	0.22	0.05
Crit Moves:		****		****				****		****		
Green Time:	16.9	37.0	83.2	32.7	52.8	62.6	9.8	57.1	74.0	46.2	93.5	126.2
Volume/Cap:	0.69	0.12	0.80	0.84	0.52	0.44	0.20	0.84	0.87	0.84	0.43	0.07
Uniform Del:	81.5	60.7	43.9	73.5	55.4	47.5	83.9	59.6	50.9	65.8	28.9	9.8
IncremntDel:	7.0	0.0	6.1	10.6	0.3	0.2	0.6	3.7	11.0	7.8	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.14	1.03	1.25	1.60
Delay/Veh:	88.5	60.8	50.0	84.1	55.7	47.6	84.5	67.3	68.9	75.8	36.1	15.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	60.8	50.0	84.1	55.7	47.6	84.5	67.3	68.9	75.8	36.1	15.7
LOS by Move:	F	E	D	F	E+	D	F	E	E	E-	D+	B
HCM2kAvgQ:	7	2	34	17	13	12	1	28	37	23	17	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



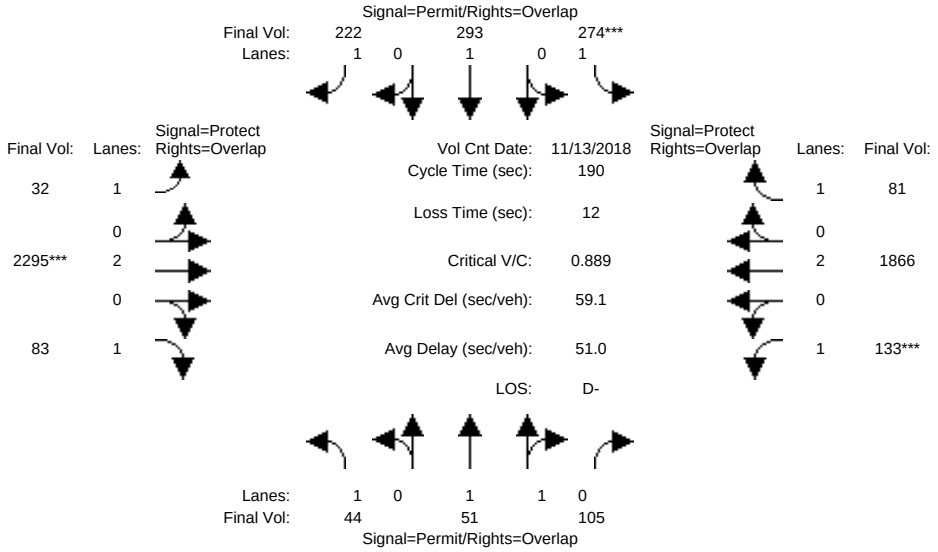
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	114	86	39	27	19	83	289	1571	112	52	2147	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	86	39	27	19	83	289	1571	112	52	2147	261
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	86	39	27	19	83	289	1581	112	52	2201	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	86	39	27	19	83	289	1581	112	52	2201	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	86	39	27	19	83	289	1581	112	52	2201	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	86	39	27	19	83	289	1581	112	52	2201	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.36	0.64	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	2545	1154	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.03	0.02	0.01	0.05	0.17	0.42	0.06	0.03	0.58	0.15
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.53	0.28	0.17	0.13	0.08	0.16	0.93	0.59	0.09	0.41	0.95	0.25
Uniform Del:	79.9	77.4	65.0	75.7	75.3	49.8	78.5	13.9	8.7	85.9	35.6	17.6
IncremntDel:	2.6	0.3	0.1	0.3	0.1	0.1	33.0	0.3	0.0	2.1	10.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	37.1	22.9	88.0	45.6	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	37.1	22.9	88.0	45.6	17.7
LOS by Move:	F	E-	E	E-	E-	D	F	D+	C+	F	D	B
HCM2kAvgQ:	7	3	3	1	1	4	22	39	5	3	62	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



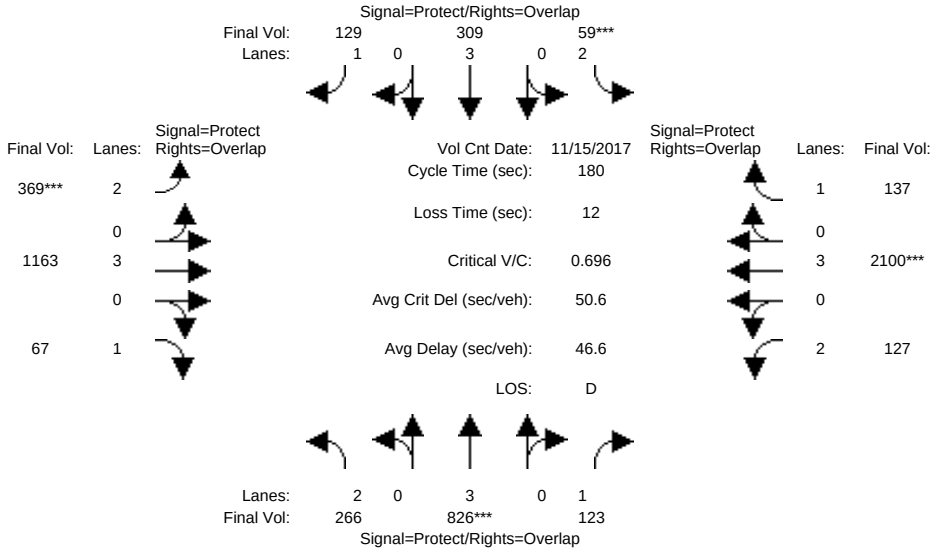
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	44	51	105	274	293	222	32	2233	83	133	1860	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	51	105	274	293	222	32	2233	83	133	1860	81
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	51	105	274	293	222	32	2295	83	133	1866	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	51	105	274	293	222	32	2295	83	133	1866	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	51	105	274	293	222	32	2295	83	133	1866	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	51	105	274	293	222	32	2295	83	133	1866	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.16	0.15	0.13	0.02	0.60	0.05	0.08	0.49	0.05
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.13	0.14	0.21	0.81	0.80	0.49	0.28	0.92	0.07	0.85	0.72	0.07
Uniform Del:	67.5	67.6	55.4	78.0	77.8	63.8	90.1	29.8	12.4	90.7	19.9	10.6
IncremntDel:	0.2	0.1	0.1	13.7	11.7	0.9	1.4	6.0	0.0	33.9	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	51.4	18.9	124.5	32.8	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	51.4	18.9	124.5	32.8	17.0
LOS by Move:	E	E	E+	F	F	E	F	D-	B-	F	C-	B
HCM2kAvgQ:	2	2	5	18	18	12	2	68	3	9	45	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



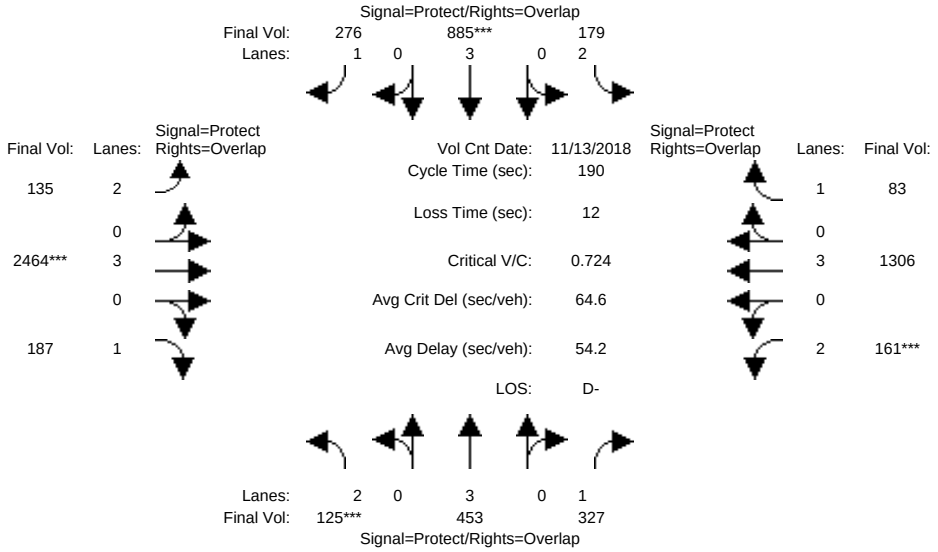
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	266	826	123	59	309	129	369	1153	67	127	2046	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	826	123	59	309	129	369	1153	67	127	2046	137
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	826	123	59	309	129	369	1163	67	127	2100	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	826	123	59	309	129	369	1163	67	127	2100	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	826	123	59	309	129	369	1163	67	127	2100	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	826	123	59	309	129	369	1163	67	127	2100	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.07	0.02	0.05	0.07	0.12	0.20	0.04	0.04	0.37	0.08
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.77	0.65	0.22	0.24	0.28	0.22	0.82	0.38	0.06	0.44	0.75	0.14
Uniform Del:	78.0	63.5	45.5	78.1	62.1	42.9	74.8	23.8	11.4	77.5	36.9	18.2
IncremntDel:	10.3	1.2	0.2	0.5	0.1	0.2	11.1	0.1	0.0	1.1	1.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.9	11.5	78.6	38.1	18.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.9	11.5	78.6	38.1	18.3
LOS by Move:	F	E	D	E-	E	D	F	C	B+	E-	D+	B-
HCM2kAvgQ:	9	13	5	2	5	5	12	12	1	4	31	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



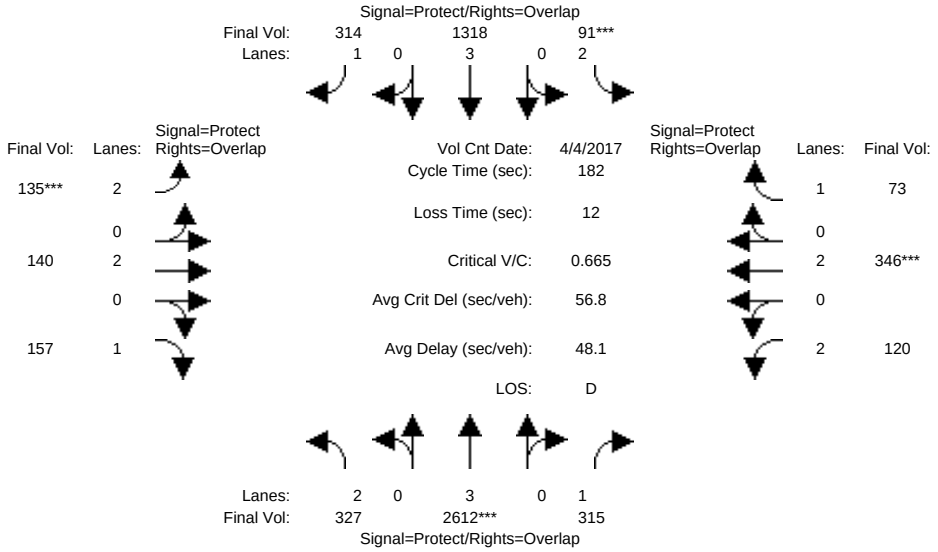
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	125	453	327	179	885	276	135	2402	187	161	1300	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	453	327	179	885	276	135	2402	187	161	1300	83
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	453	327	179	885	276	135	2464	187	161	1306	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	453	327	179	885	276	135	2464	187	161	1306	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	453	327	179	885	276	135	2464	187	161	1306	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	453	327	179	885	276	135	2464	187	161	1306	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.08	0.19	0.06	0.16	0.16	0.04	0.43	0.11	0.05	0.23	0.05
Crit Moves:	****				****			****			****	
Green Time:	15.0	39.0	53.0	16.0	40.0	57.7	17.7	109	124.0	14.0	105	121.3
Volume/Cap:	0.50	0.39	0.67	0.67	0.74	0.52	0.46	0.75	0.16	0.69	0.41	0.07
Uniform Del:	83.9	65.2	60.7	84.5	70.1	54.7	81.6	30.4	12.8	85.9	24.5	13.0
IncremntDel:	1.6	0.2	3.6	6.7	2.4	0.9	1.1	1.0	0.1	8.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.90	2.25	1.00	0.67	0.47
Delay/Veh:	85.6	65.4	64.3	91.2	72.5	55.6	88.3	58.7	29.0	94.7	16.6	6.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	65.4	64.3	91.2	72.5	55.6	88.3	58.7	29.0	94.7	16.6	6.2
LOS by Move:	F	E	E	F	E	E+	F	E+	C	F	B	A
HCM2kAvgQ:	4	7	18	6	16	14	4	42	9	7	9	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



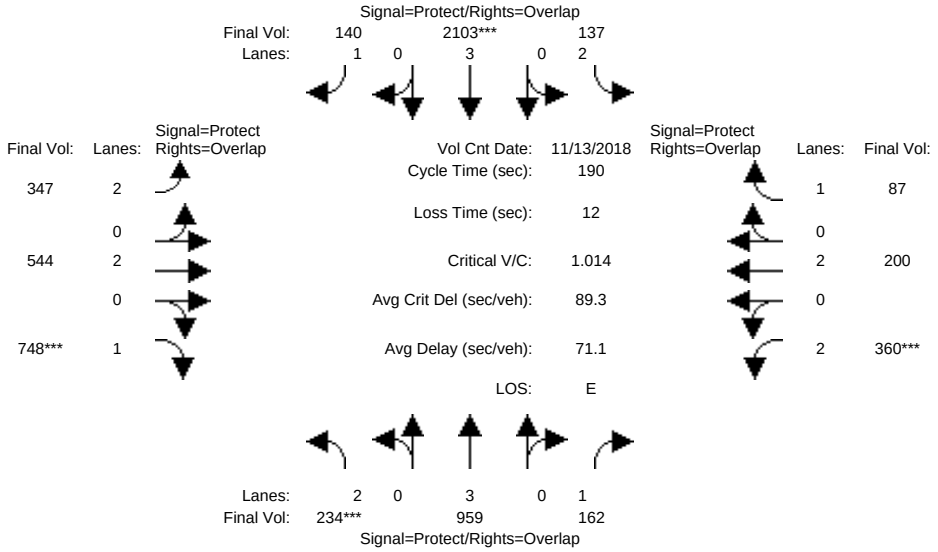
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	327	2978	315	91	1364	314	135	140	157	120	346	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	2978	315	91	1364	314	135	140	157	120	346	73
Added Vol:	0	24	0	0	151	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	3002	315	91	1515	314	135	140	157	120	346	73
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	2612	315	91	1318	314	135	140	157	120	346	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	2612	315	91	1318	314	135	140	157	120	346	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	2612	315	91	1318	314	135	140	157	120	346	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.46	0.18	0.03	0.23	0.18	0.04	0.04	0.10	0.04	0.09	0.04
Crit Moves:		****			****			****			****	
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.81	0.89	0.30	0.31	0.48	0.32	0.50	0.21	0.32	0.46	0.53	0.16
Uniform Del:	77.1	39.3	17.9	76.9	32.0	20.9	79.5	64.3	48.9	79.7	68.6	51.2
IncremntDel:	11.4	3.7	0.2	0.6	0.1	0.2	1.5	0.2	0.4	1.3	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.5	53.2	25.0	77.5	25.6	13.8	80.9	64.4	49.3	81.0	69.5	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	53.2	25.0	77.5	25.6	13.8	80.9	64.4	49.3	81.0	69.5	51.3
LOS by Move:	F	D-	C	E-	C	B	F	E	D	F	E	D-
HCM2kAvgQ:	13	47	12	3	12	6	4	3	7	4	9	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



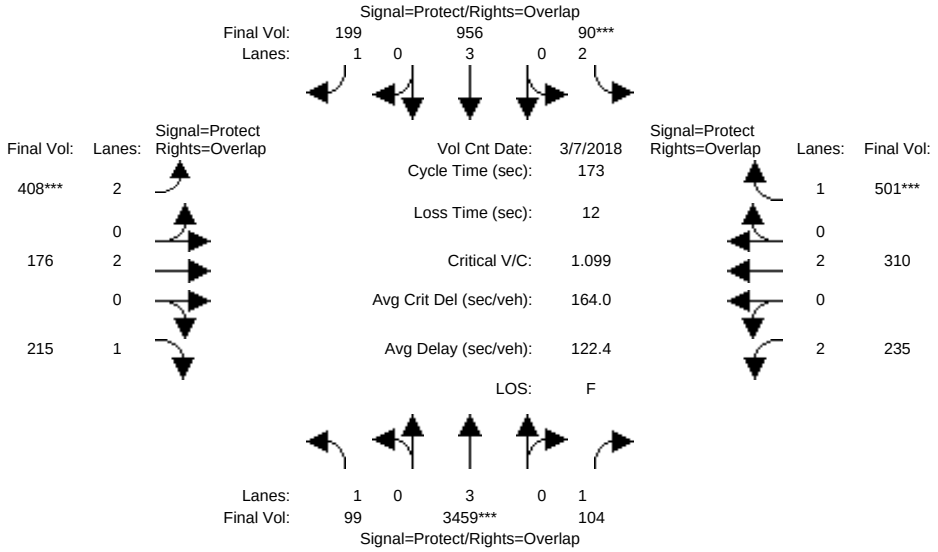
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	234	1276	162	137	2612	140	347	544	748	360	200	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	1276	162	137	2612	140	347	544	748	360	200	87
Added Vol:	0	156	0	0	17	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	1432	162	137	2629	140	347	544	748	360	200	87
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	959	162	137	2103	140	347	544	748	360	200	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	959	162	137	2103	140	347	544	748	360	200	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	959	162	137	2103	140	347	544	748	360	200	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.17	0.09	0.04	0.37	0.08	0.11	0.14	0.47	0.11	0.05	0.05
Crit Moves:	****				****				****	****		
Green Time:	22.0	86.0	110.0	15.0	79.0	107.4	28.4	53.0	75.0	24.0	48.6	63.6
Volume/Cap:	0.64	0.37	0.16	0.55	0.89	0.14	0.74	0.51	1.18	0.90	0.21	0.15
Uniform Del:	80.2	34.2	18.6	84.3	51.4	19.5	77.2	57.6	57.5	81.9	55.6	44.3
IncremntDel:	3.9	0.1	0.1	2.6	4.5	0.1	6.0	0.4	98.0	23.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.1	28.6	11.6	86.9	63.6	26.1	83.2	58.1	155.5	105.4	55.7	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.1	28.6	11.6	86.9	63.6	26.1	83.2	58.1	155.5	105.4	55.7	44.4
LOS by Move:	F	C	B+	F	E	C	F	E+	F	F	E+	D
HCM2kAvgQ:	9	9	3	4	39	5	12	13	63	14	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



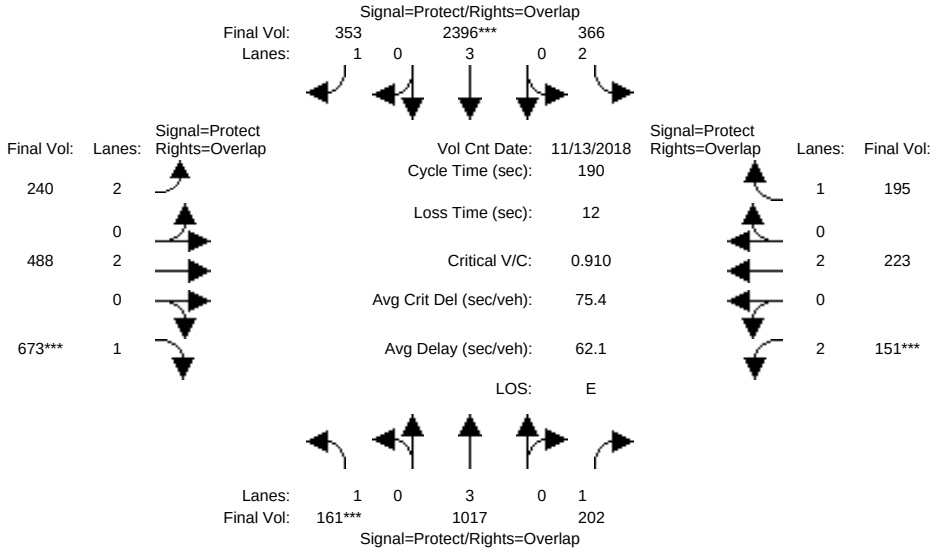
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	99	3879	104	90	1081	199	408	176	215	235	310	501
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	3879	104	90	1081	199	408	176	215	235	310	501
Added Vol:	0	97	0	0	18	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	3976	104	90	1099	199	408	176	215	235	310	501
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	3459	104	90	956	199	408	176	215	235	310	501
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	3459	104	90	956	199	408	176	215	235	310	501
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	3459	104	90	956	199	408	176	215	235	310	501
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.61	0.06	0.03	0.17	0.11	0.13	0.05	0.12	0.07	0.08	0.29
Crit Moves:		****		****			****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	0.69	1.30	0.11	0.37	0.36	0.19	0.97	0.21	0.40	0.75	0.43	1.08
Uniform Del:	77.4	46.3	17.4	76.0	30.2	16.1	74.6	54.8	47.8	75.7	62.1	63.6
IncremntDel:	13.8	140	0.0	1.0	0.1	0.1	36.0	0.1	0.5	9.4	0.4	66.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	91.2	178	11.4	77.0	25.0	9.6	110.6	55.0	48.3	85.1	62.5	129.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.2	178	11.4	77.0	25.0	9.6	110.6	55.0	48.3	85.1	62.5	129.9
LOS by Move:	F	F	B+	E-	C	A	F	D-	D	F	E	F
HCM2kAvgQ:	5	89	1	3	8	3	15	4	9	7	7	36

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



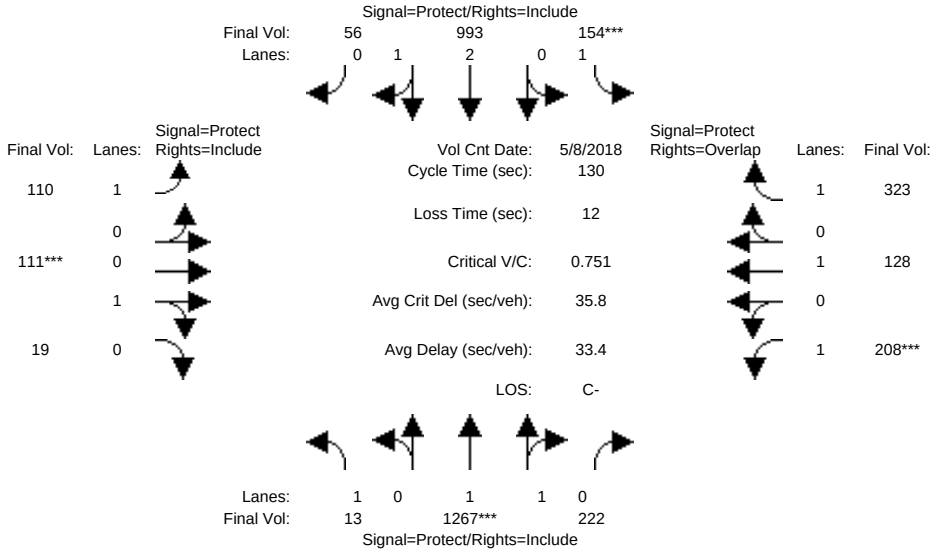
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	161	1245	202	366	3216	353	240	488	673	151	223	195
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	1245	202	366	3216	353	240	488	673	151	223	195
Added Vol:	0	11	0	0	112	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	1256	202	366	3328	353	240	488	673	151	223	195
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	1017	202	366	2396	353	240	488	673	151	223	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	1017	202	366	2396	353	240	488	673	151	223	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	1017	202	366	2396	353	240	488	673	151	223	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.12	0.12	0.42	0.20	0.08	0.13	0.38	0.05	0.06	0.11
Crit Moves:	****				****				****	****		
Green Time:	17.0	90.0	104.0	27.0	100	118.7	18.7	47.0	64.0	14.0	42.3	69.3
Volume/Cap:	1.03	0.38	0.21	0.82	0.80	0.32	0.78	0.52	1.14	0.65	0.26	0.31
Uniform Del:	86.5	32.0	22.0	79.1	36.8	16.8	83.6	61.7	63.0	85.6	61.0	43.1
IncremntDel:	79.6	0.1	0.1	11.2	1.6	0.2	11.6	0.5	82.7	6.4	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.00	1.27	1.45	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	166.1	25.9	15.2	90.3	48.5	24.4	95.2	62.3	145.7	92.0	61.1	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	166.1	25.9	15.2	90.3	48.5	24.4	95.2	62.3	145.7	92.0	61.1	43.4
LOS by Move:	F	C	B	F	D	C	F	E	F	F	E	D
HCM2kAvgQ:	12	9	4	12	39	14	9	12	54	5	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



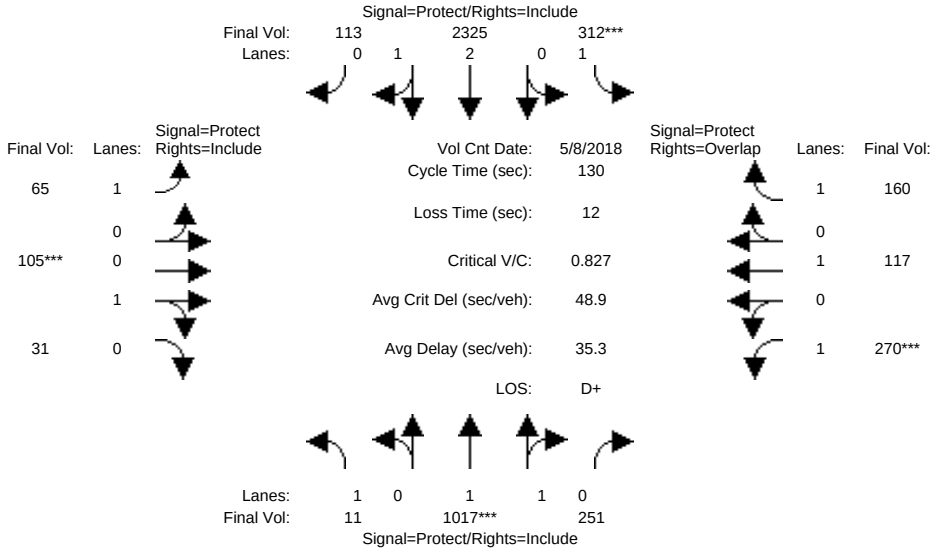
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	13	1260	219	154	953	56	110	111	19	208	128	323
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	1260	219	154	953	56	110	111	19	208	128	323
Added Vol:	0	7	3	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	1267	222	154	993	56	110	111	19	208	128	323
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	13	1267	222	154	993	56	110	111	19	208	128	323
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	1267	222	154	993	56	110	111	19	208	128	323
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	1267	222	154	993	56	110	111	19	208	128	323
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.69	0.31	1.00	2.83	0.17	1.00	0.85	0.15	1.00	1.00	1.00
Final Sat.:	1750	3148	552	1750	5301	299	1750	1537	263	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.40	0.40	0.09	0.19	0.19	0.06	0.07	0.07	0.12	0.07	0.18
Crit Moves:		****		****				****		****		
Green Time:	19.0	69.7	69.7	15.2	66.0	66.0	13.0	12.5	12.5	20.6	20.0	35.3
Volume/Cap:	0.05	0.75	0.75	0.75	0.37	0.37	0.63	0.75	0.75	0.75	0.44	0.68
Uniform Del:	47.8	23.4	23.4	55.5	19.4	19.4	56.1	57.2	57.2	52.3	49.9	42.3
IncremntDel:	0.1	1.6	1.6	14.3	0.1	0.1	7.0	16.7	16.7	10.9	1.0	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.9	25.1	25.1	69.9	19.5	19.5	63.1	73.9	73.9	63.2	50.9	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.9	25.1	25.1	69.9	19.5	19.5	63.1	73.9	73.9	63.2	50.9	46.3
LOS by Move:	D	C	C	E	B-	B-	E	E	E	E	D	D
HCM2kAvgQ:	0	24	24	7	8	8	6	7	7	10	5	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #41: Fair Oaks Ave & Duane Ave



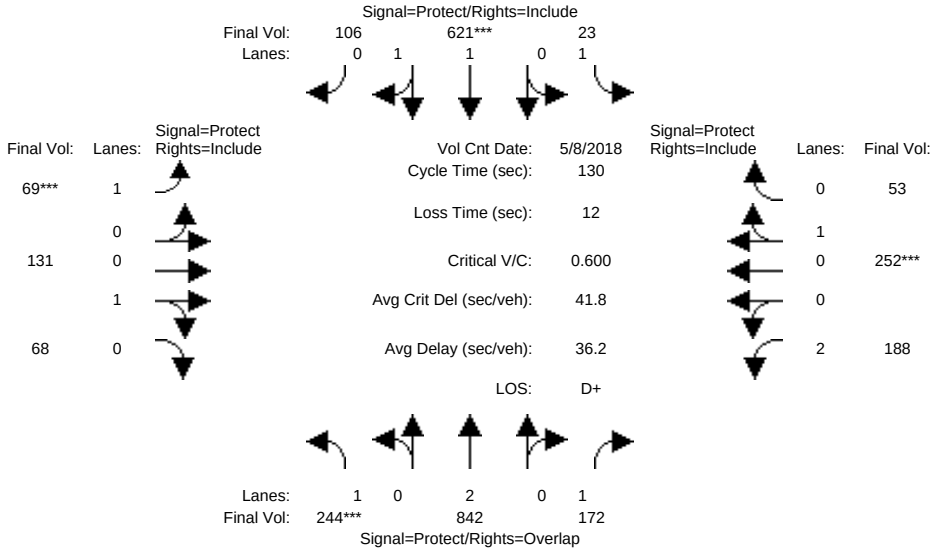
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	11	970	232	312	2320	113	65	105	31	270	117	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	970	232	312	2320	113	65	105	31	270	117	160
Added Vol:	0	47	19	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	1017	251	312	2325	113	65	105	31	270	117	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	1017	251	312	2325	113	65	105	31	270	117	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	1017	251	312	2325	113	65	105	31	270	117	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	1017	251	312	2325	113	65	105	31	270	117	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.59	0.41	1.00	2.86	0.14	1.00	0.77	0.23	1.00	1.00	1.00
Final Sat.:	1750	2967	732	1750	5340	260	1750	1390	410	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.34	0.34	0.18	0.44	0.44	0.04	0.08	0.08	0.15	0.06	0.09
Crit Moves:		****		****				****		****		
Green Time:	9.0	53.9	53.9	28.0	72.9	72.9	14.9	11.9	11.9	24.2	21.2	49.3
Volume/Cap:	0.09	0.83	0.83	0.83	0.78	0.78	0.32	0.83	0.83	0.83	0.38	0.24
Uniform Del:	56.7	33.9	33.9	48.7	22.2	22.2	52.9	58.1	58.1	50.9	48.5	27.6
IncremntDel:	0.3	3.9	3.9	14.0	1.3	1.3	0.9	27.9	27.9	15.9	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.0	37.8	37.8	62.7	23.5	23.5	53.9	86.0	86.0	66.7	49.2	27.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.0	37.8	37.8	62.7	23.5	23.5	53.9	86.0	86.0	66.7	49.2	27.8
LOS by Move:	E+	D+	D+	E	C	C	D-	F	F	E	D	C
HCM2kAvgQ:	0	24	24	13	25	25	3	8	8	14	4	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



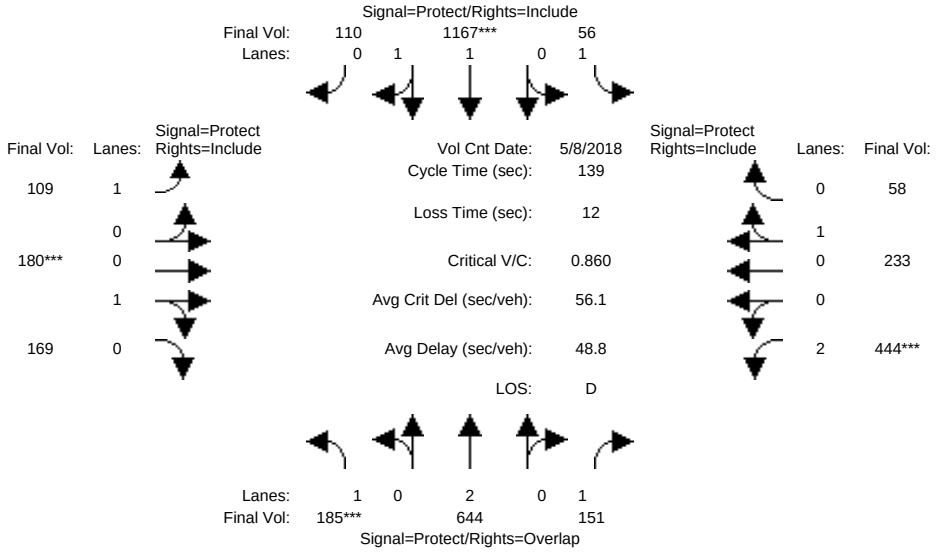
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	239	842	172	23	621	106	69	131	68	188	252	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	842	172	23	621	106	69	131	68	188	252	53
Added Vol:	5	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	244	842	172	23	621	106	69	131	68	188	252	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	244	842	172	23	621	106	69	131	68	188	252	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	842	172	23	621	106	69	131	68	188	252	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	244	842	172	23	621	106	69	131	68	188	252	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.70	0.30	1.00	0.66	0.34	2.00	0.83	0.17
Final Sat.:	1750	3800	1750	1750	3160	539	1750	1185	615	3150	1487	313
Capacity Analysis Module:												
Vol/Sat:	0.14	0.22	0.10	0.01	0.20	0.20	0.04	0.11	0.11	0.06	0.17	0.17
Crit Moves:	****				****		****				****	
Green Time:	30.2	58.5	74.4	14.2	42.6	42.6	8.5	29.4	29.4	15.9	36.7	36.7
Volume/Cap:	0.60	0.49	0.17	0.12	0.60	0.60	0.60	0.49	0.49	0.49	0.60	0.60
Uniform Del:	44.5	25.2	13.2	52.2	36.6	36.6	59.1	43.8	43.8	53.3	40.3	40.3
IncremntDel:	2.5	0.2	0.1	0.3	0.8	0.8	8.5	0.9	0.9	1.0	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.0	25.5	13.3	52.5	37.4	37.4	67.6	44.7	44.7	54.3	42.3	42.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	25.5	13.3	52.5	37.4	37.4	67.6	44.7	44.7	54.3	42.3	42.3
LOS by Move:	D	C	B	D-	D+	D+	E	D	D	D-	D	D
HCM2kAvgQ:	9	11	3	1	13	13	4	8	8	4	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #42: Fair Oaks Ave & Arques Ave



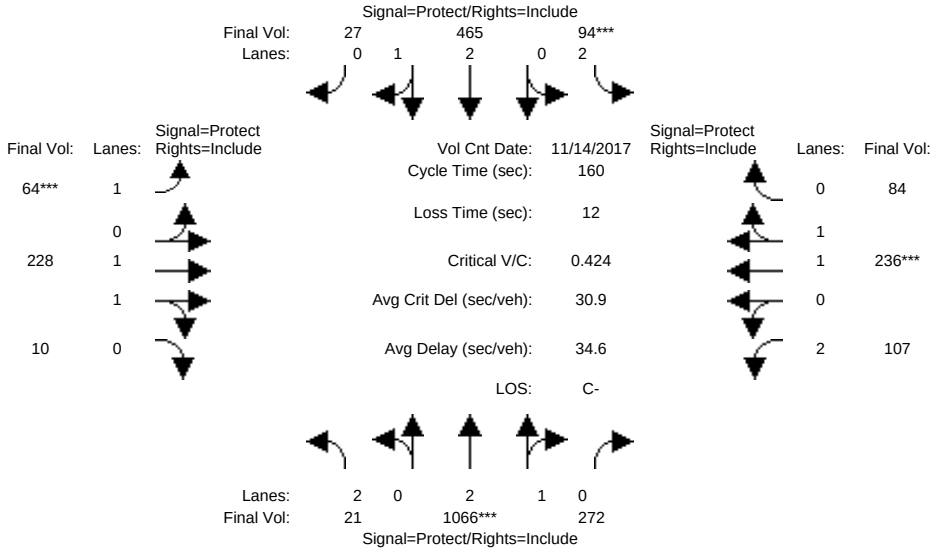
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	154	644	151	56	1167	110	109	180	169	444	233	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	644	151	56	1167	110	109	180	169	444	233	58
Added Vol:	31	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	644	151	56	1167	110	109	180	169	444	233	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	644	151	56	1167	110	109	180	169	444	233	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	644	151	56	1167	110	109	180	169	444	233	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	644	151	56	1167	110	109	180	169	444	233	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.82	0.18	1.00	0.52	0.48	2.00	0.80	0.20
Final Sat.:	1750	3800	1750	1750	3381	319	1750	928	872	3150	1441	359
Capacity Analysis Module:												
Vol/Sat:	0.11	0.17	0.09	0.03	0.35	0.35	0.06	0.19	0.19	0.14	0.16	0.16
Crit Moves:	****				****			****		****		
Green Time:	17.1	56.2	79.0	16.7	55.8	55.8	15.1	31.3	31.3	22.8	39.1	39.1
Volume/Cap:	0.86	0.42	0.15	0.27	0.86	0.86	0.58	0.86	0.86	0.86	0.58	0.58
Uniform Del:	59.8	29.7	14.2	55.6	38.0	38.0	58.9	51.7	51.7	56.6	42.8	42.8
IncremntDel:	27.7	0.2	0.1	0.7	5.3	5.3	4.3	16.7	16.7	13.7	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.5	29.9	14.3	56.3	43.4	43.4	63.2	68.4	68.4	70.2	44.5	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.5	29.9	14.3	56.3	43.4	43.4	63.2	68.4	68.4	70.2	44.5	44.5
LOS by Move:	F	C	B	E+	D	D	E	E	E	E	D	D
HCM2kAvgQ:	9	9	3	2	28	28	6	18	18	12	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



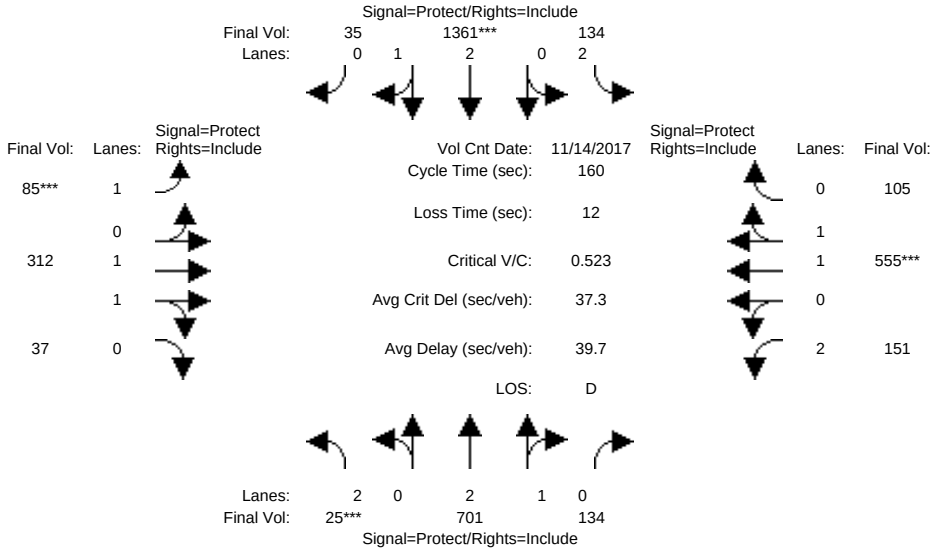
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	21	1056	272	94	425	27	64	228	10	107	236	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	1056	272	94	425	27	64	228	10	107	236	84
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	1066	272	94	465	27	64	228	10	107	236	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	1066	272	94	465	27	64	228	10	107	236	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1066	272	94	465	27	64	228	10	107	236	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1066	272	94	465	27	64	228	10	107	236	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.97	0.95	0.83	0.98	0.95
Lanes:	2.00	2.37	0.63	2.00	2.83	0.17	1.00	1.91	0.09	2.00	1.46	0.54
Final Sat.:	3150	4460	1138	3150	5292	307	1750	3544	155	3150	2728	971
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.03	0.09	0.09	0.04	0.06	0.06	0.03	0.09	0.09
Crit Moves:		****		****			****				****	
Green Time:	33.7	90.3	90.3	11.3	67.8	67.8	13.8	27.7	27.7	18.8	32.7	32.7
Volume/Cap:	0.03	0.42	0.42	0.42	0.21	0.21	0.42	0.37	0.37	0.29	0.42	0.42
Uniform Del:	50.1	20.0	20.0	71.3	29.1	29.1	69.3	58.5	58.5	64.5	55.5	55.5
IncremntDel:	0.0	0.1	0.1	1.3	0.0	0.0	1.9	0.4	0.4	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.2	20.1	20.1	72.6	29.2	29.2	71.2	58.9	58.9	64.9	55.9	55.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	20.1	20.1	72.6	29.2	29.2	71.2	58.9	58.9	64.9	55.9	55.9
LOS by Move:	D	C+	C+	E	C	C	E	E+	E+	E	E+	E+
HCM2kAvgQ:	0	12	12	3	5	5	3	5	5	3	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #43: Wolfe Rd & Arques Ave



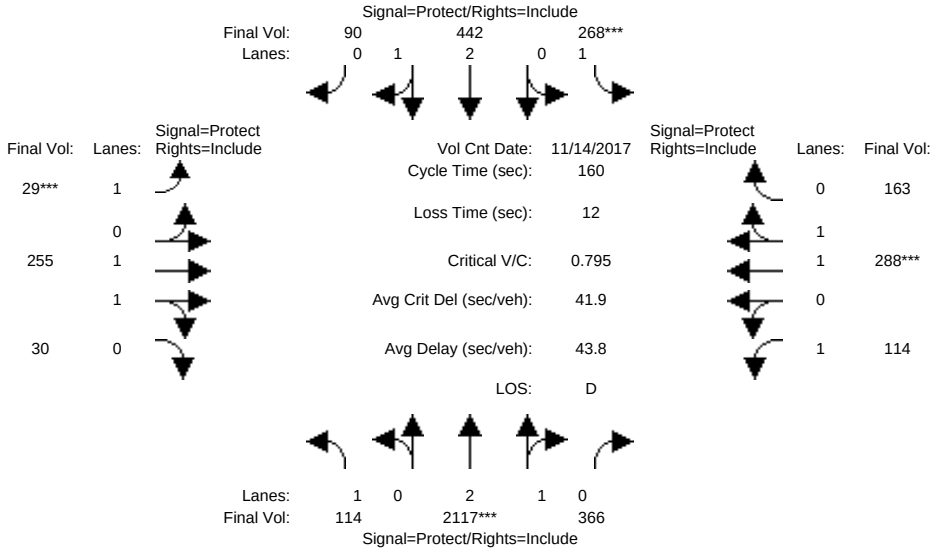
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	25	636	134	134	1356	35	85	312	37	151	555	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	636	134	134	1356	35	85	312	37	151	555	105
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	701	134	134	1361	35	85	312	37	151	555	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	701	134	134	1361	35	85	312	37	151	555	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	701	134	134	1361	35	85	312	37	151	555	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	701	134	134	1361	35	85	312	37	151	555	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.50	0.50	2.00	2.92	0.08	1.00	1.78	0.22	2.00	1.67	0.33
Final Sat.:	3150	4700	898	3150	5459	140	1750	3307	392	3150	3111	589
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.04	0.25	0.25	0.05	0.09	0.09	0.05	0.18	0.18
Crit Moves:	****				****		****				****	
Green Time:	7.0	62.5	62.5	18.3	73.8	73.8	14.4	44.6	44.6	22.6	52.8	52.8
Volume/Cap:	0.18	0.38	0.38	0.37	0.54	0.54	0.54	0.34	0.34	0.34	0.54	0.54
Uniform Del:	73.7	34.9	34.9	65.5	30.9	30.9	69.6	46.0	46.0	61.9	43.7	43.7
IncremntDel:	0.6	0.1	0.1	0.6	0.2	0.2	3.8	0.2	0.2	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.4	35.0	35.0	66.2	31.2	31.2	73.4	46.2	46.2	62.4	44.2	44.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	35.0	35.0	66.2	31.2	31.2	73.4	46.2	46.2	62.4	44.2	44.2
LOS by Move:	E	D+	D+	E	C	C	E	D	D	E	D	D
HCM2kAvgQ:	1	9	9	4	16	16	4	6	6	4	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



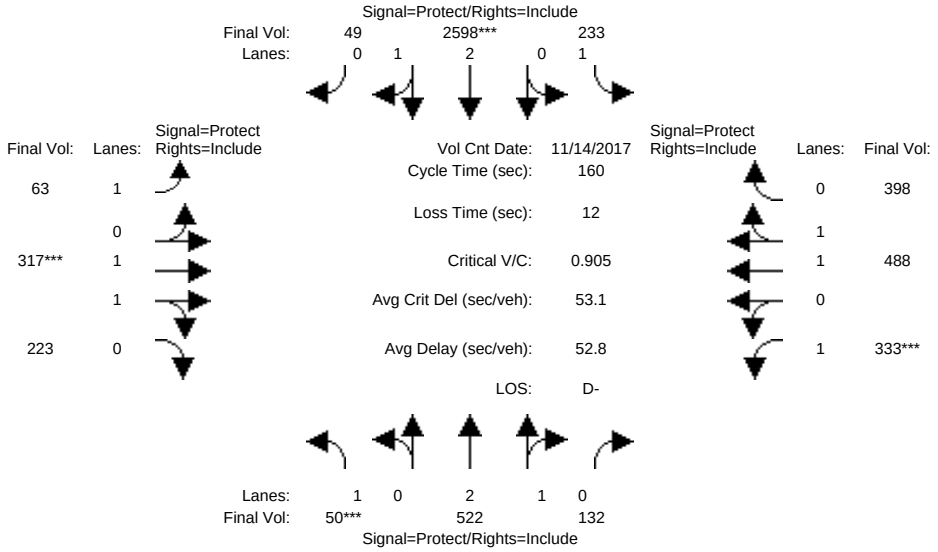
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	114	2117	334	228	442	90	29	196	30	108	272	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	2117	334	228	442	90	29	196	30	108	272	148
Added Vol:	0	0	32	40	0	0	0	59	0	6	16	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	2117	366	268	442	90	29	255	30	114	288	163
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	2117	366	268	442	90	29	255	30	114	288	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	2117	366	268	442	90	29	255	30	114	288	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	2117	366	268	442	90	29	255	30	114	288	163
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	2.54	0.46	1.00	2.47	0.53	1.00	1.78	0.22	1.00	1.26	0.74
Final Sat.:	1750	4773	825	1750	4651	947	1750	3310	389	1750	2362	1337
Capacity Analysis Module:												
Vol/Sat:	0.07	0.44	0.44	0.15	0.10	0.10	0.02	0.08	0.08	0.07	0.12	0.12
Crit Moves:		****		****			****				****	
Green Time:	47.6	87.0	87.0	30.0	69.5	69.5	7.0	16.8	16.8	14.2	23.9	23.9
Volume/Cap:	0.22	0.82	0.82	0.82	0.22	0.22	0.38	0.74	0.74	0.74	0.82	0.82
Uniform Del:	42.2	29.9	29.9	62.3	28.3	28.3	74.4	69.5	69.5	71.1	65.9	65.9
IncremntDel:	0.2	1.8	1.8	14.5	0.0	0.0	3.1	7.2	7.2	16.7	9.1	9.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.4	31.7	31.7	76.8	28.4	28.4	77.5	76.7	76.7	87.8	75.0	75.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	31.7	31.7	76.8	28.4	28.4	77.5	76.7	76.7	87.8	75.0	75.0
LOS by Move:	D	C	C	E-	C	C	E-	E-	E-	F	E-	E-
HCM2kAvgQ:	4	33	33	14	5	5	1	7	7	6	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #44: Wolfe Rd & Kifer Rd



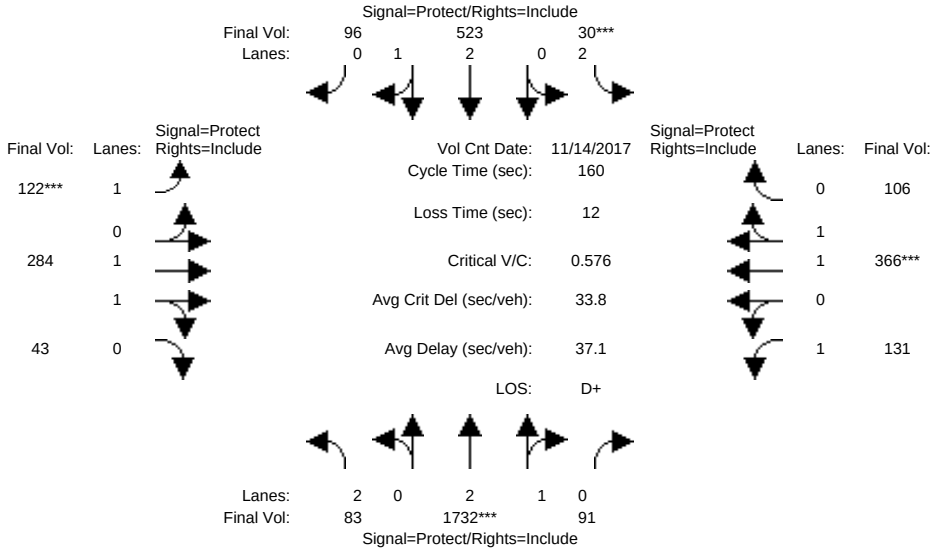
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	50	522	128	228	2598	49	63	310	223	296	388	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	522	128	228	2598	49	63	310	223	296	388	301
Added Vol:	0	0	4	5	0	0	0	7	0	37	100	97
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	522	132	233	2598	49	63	317	223	333	488	398
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	522	132	233	2598	49	63	317	223	333	488	398
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	522	132	233	2598	49	63	317	223	333	488	398
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	522	132	233	2598	49	63	317	223	333	488	398
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.95
Lanes:	1.00	2.37	0.63	1.00	2.94	0.06	1.00	1.15	0.85	1.00	1.08	0.92
Final Sat.:	1750	4468	1130	1750	5496	104	1750	2171	1527	1750	2037	1661
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.13	0.47	0.47	0.04	0.15	0.15	0.19	0.24	0.24
Crit Moves:	****				****			****			****	
Green Time:	7.0	41.8	41.8	47.6	82.4	82.4	9.1	25.5	25.5	33.2	49.6	49.6
Volume/Cap:	0.65	0.45	0.45	0.45	0.92	0.92	0.64	0.92	0.92	0.92	0.77	0.77
Uniform Del:	75.3	49.5	49.5	45.5	35.7	35.7	73.9	66.2	66.2	62.1	50.1	50.1
IncremntDel:	18.4	0.2	0.2	0.6	5.3	5.3	12.9	19.5	19.5	27.6	3.3	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	49.7	49.7	46.2	41.0	41.0	86.8	85.7	85.7	89.7	53.5	53.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	49.7	49.7	46.2	41.0	41.0	86.8	85.7	85.7	89.7	53.5	53.5
LOS by Move:	F	D	D	D	D	D	F	F	F	F	D-	D-
HCM2kAvgQ:	3	9	9	9	38	38	3	15	15	19	20	20

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



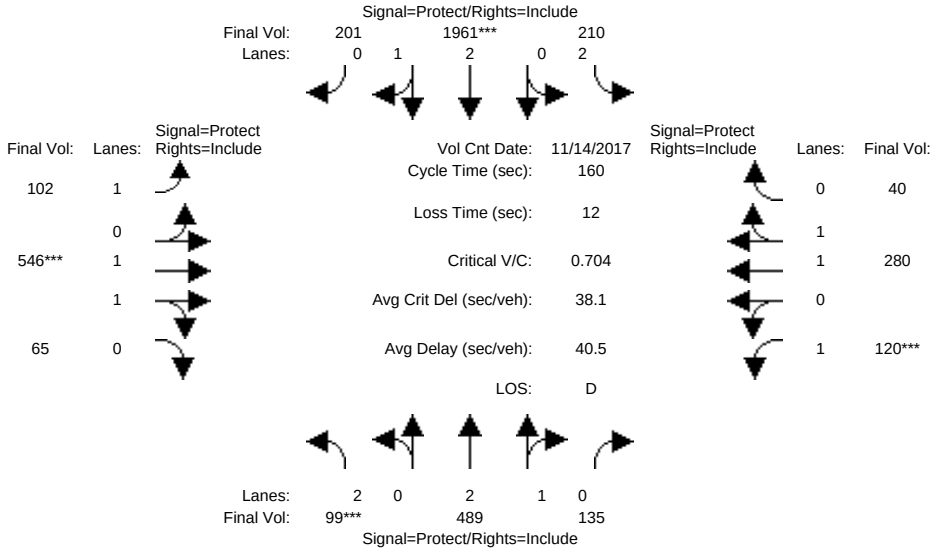
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	1716	91	27	520	96	122	284	43	131	366	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1716	91	27	520	96	122	284	43	131	366	90
Added Vol:	0	16	0	3	3	0	0	0	0	0	0	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1732	91	30	523	96	122	284	43	131	366	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1732	91	30	523	96	122	284	43	131	366	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1732	91	30	523	96	122	284	43	131	366	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1732	91	30	523	96	122	284	43	131	366	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.84	0.16	2.00	2.52	0.48	1.00	1.73	0.27	1.00	1.54	0.46
Final Sat.:	3150	5320	280	3150	4730	868	1750	3213	486	1750	2868	831
Capacity Analysis Module:												
Vol/Sat:	0.03	0.33	0.33	0.01	0.11	0.11	0.07	0.09	0.09	0.07	0.13	0.13
Crit Moves:		****		****			****				****	
Green Time:	26.9	87.8	87.8	7.0	67.9	67.9	18.8	28.8	28.8	24.4	34.4	34.4
Volume/Cap:	0.16	0.59	0.59	0.22	0.26	0.26	0.59	0.49	0.49	0.49	0.59	0.59
Uniform Del:	56.9	24.2	24.2	73.9	29.8	29.8	67.0	59.0	59.0	62.1	56.5	56.5
IncremntDel:	0.1	0.3	0.3	0.8	0.1	0.1	4.6	0.6	0.6	1.4	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.0	24.5	24.5	74.7	29.9	29.9	71.6	59.6	59.6	63.5	57.7	57.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.0	24.5	24.5	74.7	29.9	29.9	71.6	59.6	59.6	63.5	57.7	57.7
LOS by Move:	E+	C	C	E	C	C	E	E+	E+	E	E+	E+
HCM2kAvgQ:	2	19	19	1	6	6	6	7	7	6	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #45: Wolfe Rd & Reed Ave



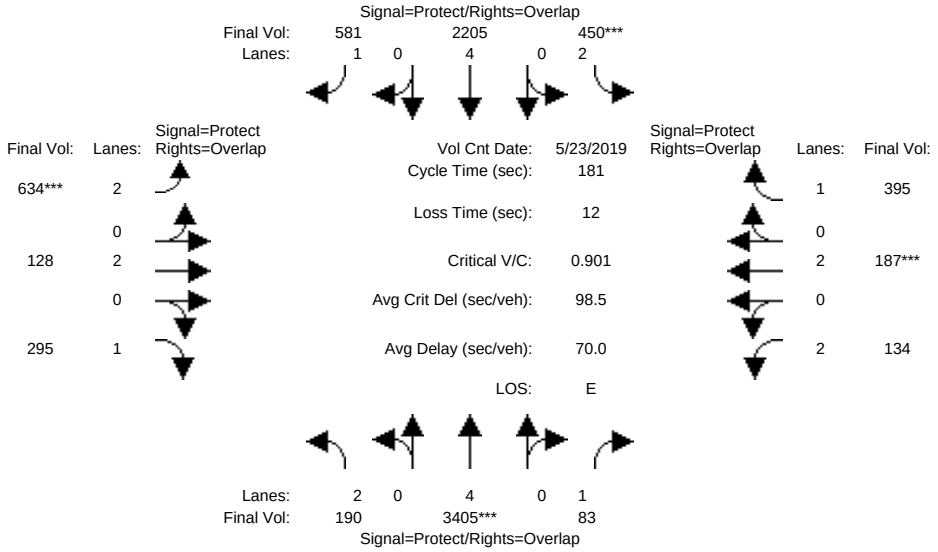
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	487	135	191	1942	201	102	546	65	120	280	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	487	135	191	1942	201	102	546	65	120	280	38
Added Vol:	0	2	0	19	19	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	489	135	210	1961	201	102	546	65	120	280	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	489	135	210	1961	201	102	546	65	120	280	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	489	135	210	1961	201	102	546	65	120	280	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	489	135	210	1961	201	102	546	65	120	280	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.33	0.67	2.00	2.71	0.29	1.00	1.78	0.22	1.00	1.74	0.26
Final Sat.:	3150	4387	1211	3150	5079	521	1750	3306	394	1750	3237	462
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.11	0.07	0.39	0.39	0.06	0.17	0.17	0.07	0.09	0.09
Crit Moves:	****				****			****			****	
Green Time:	7.1	59.4	59.4	35.5	87.7	87.7	21.4	37.5	37.5	15.6	31.7	31.7
Volume/Cap:	0.70	0.30	0.30	0.30	0.70	0.70	0.44	0.70	0.70	0.70	0.44	0.44
Uniform Del:	75.4	35.6	35.6	51.9	26.6	26.6	63.8	56.1	56.1	70.0	56.3	56.3
IncremntDel:	14.9	0.1	0.1	0.2	0.8	0.8	1.3	2.6	2.6	12.5	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	90.3	35.7	35.7	52.1	27.3	27.3	65.1	58.8	58.8	82.5	56.7	56.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.3	35.7	35.7	52.1	27.3	27.3	65.1	58.8	58.8	82.5	56.7	56.7
LOS by Move:	F	D+	D+	D-	C	C	E	E+	E+	F	E+	E+
HCM2kAvgQ:	3	7	7	5	25	25	5	14	14	6	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



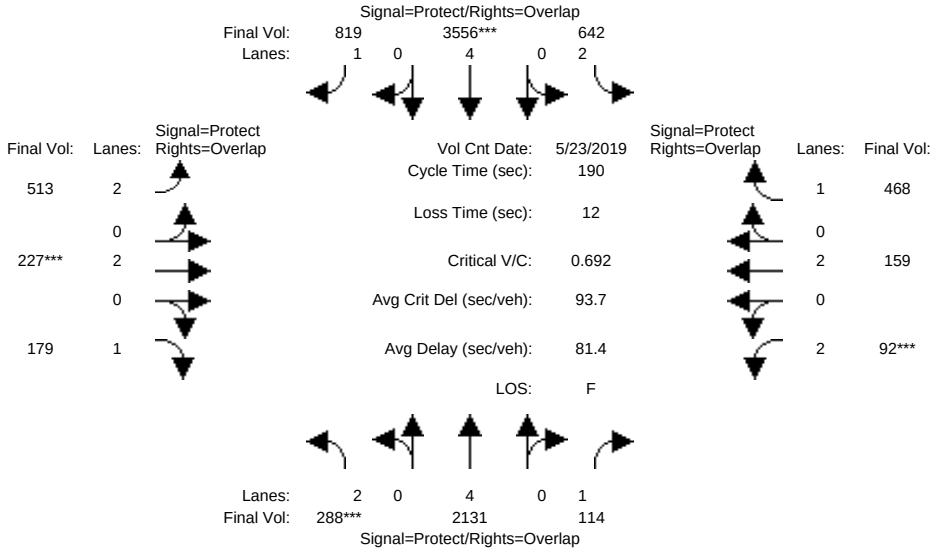
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	190	3381	83	450	2070	581	634	128	279	134	187	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	3381	83	450	2070	581	634	128	279	134	187	395
Added Vol:	0	24	0	0	135	0	0	0	16	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	3405	83	450	2205	581	634	128	295	134	187	395
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	3405	83	450	2205	581	634	128	295	134	187	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	3405	83	450	2205	581	634	128	295	134	187	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	3405	83	450	2205	581	634	128	295	134	187	395
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.45	0.05	0.14	0.29	0.33	0.20	0.03	0.17	0.04	0.05	0.23
Crit Moves:		****		****			****				****	
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	0.63	0.93	0.09	1.27	0.58	0.53	1.53	0.16	0.54	0.73	0.34	0.88
Uniform Del:	78.9	44.3	20.3	80.3	32.3	18.7	78.6	57.4	51.5	83.9	69.9	64.8
IncremntDel:	4.4	5.2	0.0	143.3	0.2	0.5	250.7	0.1	1.1	14.2	0.4	18.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.3	40.5	14.3	223.7	25.2	9.9	329.3	57.5	52.6	98.1	70.3	83.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.3	40.5	14.3	223.7	25.2	9.9	329.3	57.5	52.6	98.1	70.3	83.3
LOS by Move:	F	D	B	F	C	A	F	E+	D-	F	E	F
HCM2kAvgQ:	6	39	1	24	17	10	38	3	14	6	5	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #49: Lawrence Expwy & Oakmead Pkwy



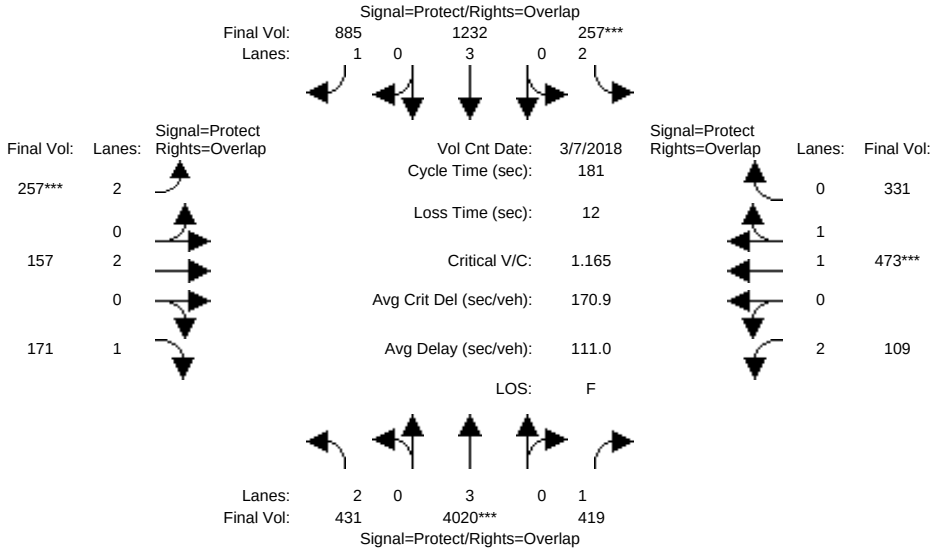
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	288	1975	114	642	3540	819	513	227	177	92	159	468
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	288	1975	114	642	3540	819	513	227	177	92	159	468
Added Vol:	0	156	0	0	16	0	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	288	2131	114	642	3556	819	513	227	179	92	159	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	288	2131	114	642	3556	819	513	227	179	92	159	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	288	2131	114	642	3556	819	513	227	179	92	159	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	288	2131	114	642	3556	819	513	227	179	92	159	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.28	0.07	0.20	0.47	0.47	0.16	0.06	0.10	0.03	0.04	0.27
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	0.86	0.75	0.15	1.23	1.08	0.76	0.90	0.21	0.26	0.56	0.27	0.84
Uniform Del:	83.6	51.8	33.4	79.2	53.8	26.5	76.1	52.1	39.7	87.8	71.2	60.2
IncremntDel:	20.2	1.2	0.1	117.6	41.8	3.2	17.1	0.1	0.2	4.1	0.3	10.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	103.8	48.9	29.0	196.8	95.6	29.7	93.2	52.2	39.9	91.9	71.5	71.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	103.8	48.9	29.0	196.8	95.6	29.7	93.2	52.2	39.9	91.9	71.5	71.0
LOS by Move:	F	D	C	F	F	C	F	D-	D	F	E	E
HCM2kAvgQ:	10	25	3	33	62	37	20	5	7	4	4	29

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



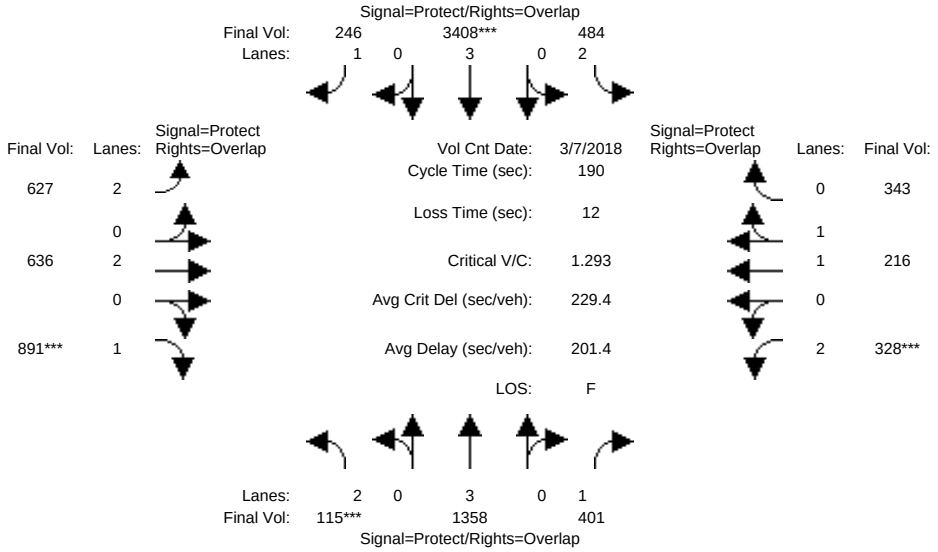
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	334	4621	419	257	1416	680	233	148	153	109	422	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	4621	419	257	1416	680	233	148	153	109	422	331
Added Vol:	97	0	0	0	0	205	24	9	18	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	431	4621	419	257	1416	885	257	157	171	109	473	331
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	431	4020	419	257	1232	885	257	157	171	109	473	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	431	4020	419	257	1232	885	257	157	171	109	473	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	431	4020	419	257	1232	885	257	157	171	109	473	331
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.94
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.15	0.85
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2160	1512
Capacity Analysis Module:												
Vol/Sat:	0.14	0.71	0.24	0.08	0.22	0.51	0.08	0.04	0.10	0.03	0.22	0.22
Crit Moves:		****		****			****				****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	0.98	1.26	0.39	0.86	0.42	0.86	1.15	0.26	0.33	0.58	1.47	0.90
Uniform Del:	77.7	40.0	17.4	80.8	27.2	31.5	84.1	66.8	49.4	82.9	77.1	66.4
IncremntDel:	38.4	121	0.2	22.0	0.1	7.8	108.1	0.2	0.4	4.5	223	12.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	116.1	148	9.5	102.8	20.4	27.0	192.2	67.0	49.8	87.4	300	78.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	116.1	148	9.5	102.8	20.4	27.0	192.2	67.0	49.8	87.4	300	78.5
LOS by Move:	F	F	A	F	C+	C	F	E	D	F	F	E-
HCM2kAvgQ:	14	103	6	11	10	38	12	4	8	4	39	23

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #51: Lawrence Expwy & Kifer Rd



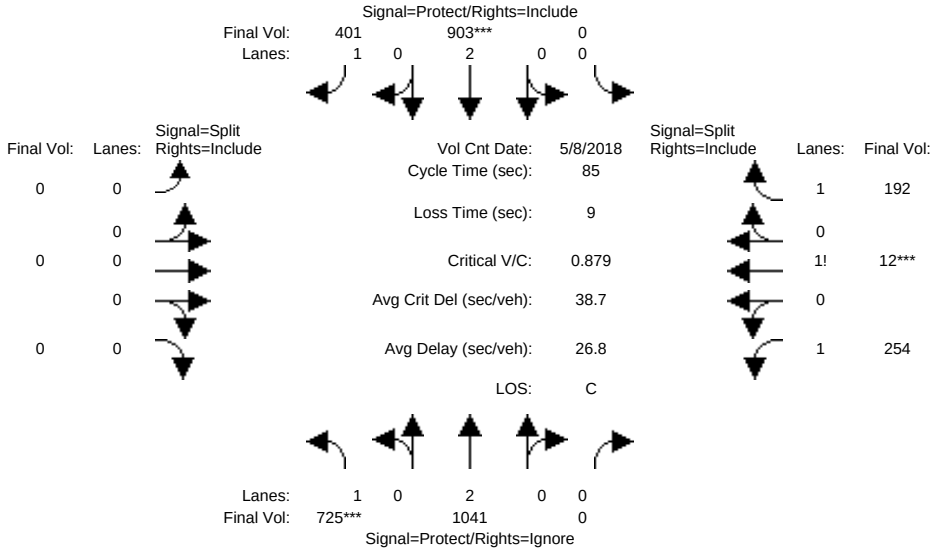
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	104	1698	401	484	4314	222	471	577	779	328	210	343
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	1698	401	484	4314	222	471	577	779	328	210	343
Added Vol:	11	0	0	0	0	24	156	59	112	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	1698	401	484	4314	246	627	636	891	328	216	343
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	1358	401	484	3408	246	627	636	891	328	216	343
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	1358	401	484	3408	246	627	636	891	328	216	343
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	1358	401	484	3408	246	627	636	891	328	216	343
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.24	0.23	0.15	0.60	0.14	0.20	0.17	0.51	0.10	0.11	0.20
Crit Moves:	****				****				****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	0.78	0.53	0.41	1.09	1.10	0.22	2.39	0.96	2.31	0.91	0.56	0.57
Uniform Del:	89.6	38.2	23.8	81.5	43.5	15.5	87.1	77.9	74.1	83.2	67.8	50.5
IncremntDel:	22.9	0.2	0.3	67.5	51.5	0.1	638.2	26.2	597.2	26.6	0.7	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	115.4	58.9	44.3	158.0	129	32.8	725.3	104	671.2	109.8	68.5	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.4	58.9	44.3	158.0	129	32.8	725.3	104	671.2	109.8	68.5	51.3
LOS by Move:	F	E+	D	F	F	C-	F	F	F	F	E	D-
HCM2kAvgQ:	4	23	21	23	80	12	48	20	120	12	11	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



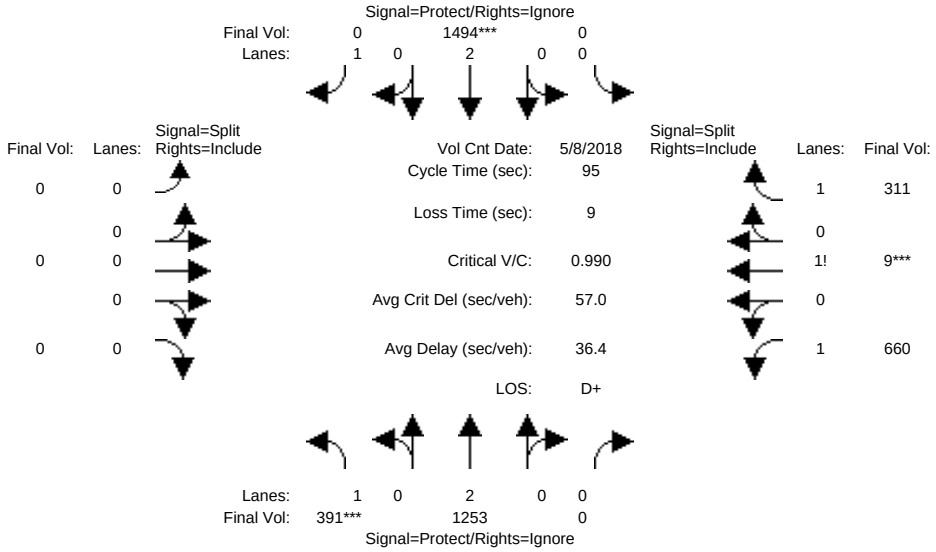
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	718	1041	0	0	903	566	0	0	0	254	12	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	718	1041	0	0	903	566	0	0	0	254	12	192
Added Vol:	7	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	725	1041	0	0	903	566	0	0	0	254	12	192
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	725	1041	0	0	903	566	0	0	0	254	12	192
Reduct Vol:	0	0	0	0	0	165	0	0	0	0	0	0
Reduced Vol:	725	1041	0	0	903	401	0	0	0	254	12	192
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	725	1041	0	0	903	401	0	0	0	254	12	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.54	0.05	1.41
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2696	89	2465
Capacity Analysis Module:												
Vol/Sat:	0.41	0.27	0.00	0.00	0.24	0.23	0.00	0.00	0.00	0.09	0.13	0.08
Crit Moves:	****				****						****	
Green Time:	40.0	63.0	0.0	0.0	23.0	23.0	0.0	0.0	0.0	13.0	13.0	13.0
Volume/Cap:	0.88	0.37	0.00	0.00	0.88	0.85	0.00	0.00	0.00	0.62	0.88	0.51
Uniform Del:	20.3	3.9	0.0	0.0	29.7	29.4	0.0	0.0	0.0	33.7	35.2	33.1
IncremntDel:	10.7	0.1	0.0	0.0	8.9	13.4	0.0	0.0	0.0	1.6	15.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	31.0	4.0	0.0	0.0	38.5	42.8	0.0	0.0	0.0	35.3	51.0	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.0	4.0	0.0	0.0	38.5	42.8	0.0	0.0	0.0	35.3	51.0	33.6
LOS by Move:	C	A	A	A	D+	D	A	A	A	D+	D	C-
HCM2kAvgQ:	22	5	0	0	13	12	0	0	0	5	10	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



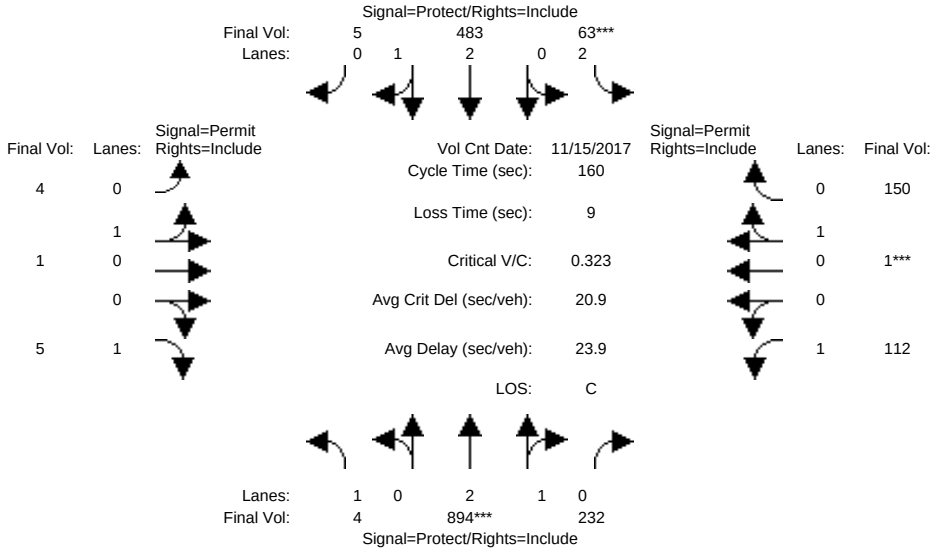
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	344	1253	0	0	1494	175	0	0	0	660	9	311
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	344	1253	0	0	1494	175	0	0	0	660	9	311
Added Vol:	47	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	391	1253	0	0	1494	175	0	0	0	660	9	311
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	391	1253	0	0	1494	0	0	0	0	660	9	311
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	391	1253	0	0	1494	0	0	0	0	660	9	311
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	391	1253	0	0	1494	0	0	0	0	660	9	311
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.66	0.02	1.32
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2954	32	2306
Capacity Analysis Module:												
Vol/Sat:	0.22	0.33	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.22	0.28	0.13
Crit Moves:	****				****						****	
Green Time:	21.4	59.2	0.0	0.0	37.7	0.0	0.0	0.0	0.0	26.8	26.8	26.8
Volume/Cap:	0.99	0.53	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.79	0.99	0.48
Uniform Del:	36.7	10.1	0.0	0.0	28.5	0.0	0.0	0.0	0.0	31.5	33.9	28.3
IncremntDel:	42.6	0.2	0.0	0.0	20.8	0.0	0.0	0.0	0.0	3.5	26.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	79.2	10.3	0.0	0.0	49.2	0.0	0.0	0.0	0.0	35.0	60.1	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.2	10.3	0.0	0.0	49.2	0.0	0.0	0.0	0.0	35.0	60.1	28.4
LOS by Move:	E-	B+	A	A	D	A	A	A	A	D+	E	C
HCM2kAvgQ:	18	10	0	0	26	0	0	0	0	13	22	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



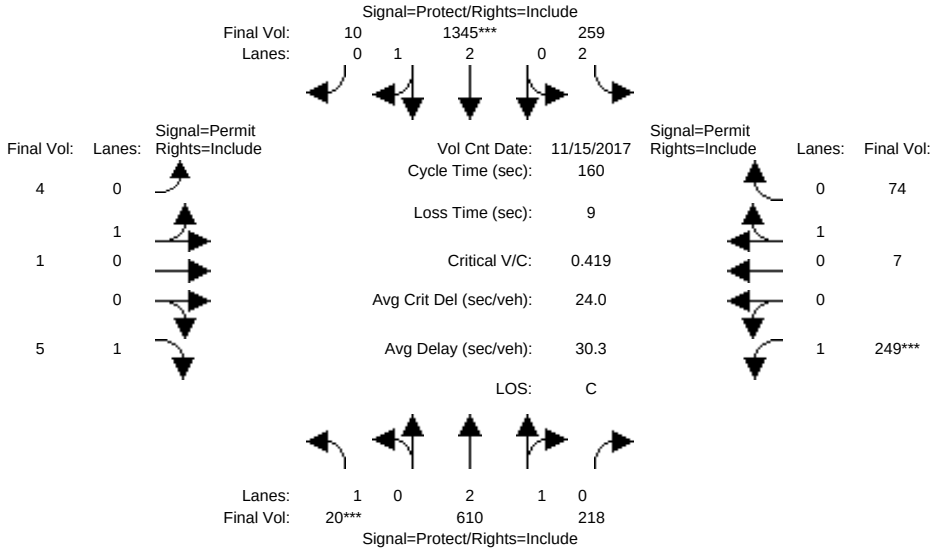
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	884	232	63	443	5	4	1	5	112	1	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	884	232	63	443	5	4	1	5	112	1	150
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	894	232	63	483	5	4	1	5	112	1	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	894	232	63	483	5	4	1	5	112	1	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	894	232	63	483	5	4	1	5	112	1	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	894	232	63	483	5	4	1	5	112	1	150
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.36	0.64	2.00	2.97	0.03	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	4445	1153	3150	5543	57	1440	360	1750	1750	12	1788
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.02	0.09	0.09	0.00	0.00	0.00	0.06	0.08	0.08
Crit Moves:		****		****							****	
Green Time:	36.6	99.6	99.6	9.9	72.9	72.9	41.5	41.5	41.5	41.5	41.5	41.5
Volume/Cap:	0.01	0.32	0.32	0.32	0.19	0.19	0.01	0.01	0.01	0.25	0.32	0.32
Uniform Del:	47.7	14.3	14.3	71.8	26.0	26.0	44.0	44.0	44.0	46.9	47.9	47.9
IncremntDel:	0.0	0.1	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.7	14.3	14.3	72.8	26.0	26.0	44.0	44.0	44.0	47.1	48.3	48.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.7	14.3	14.3	72.8	26.0	26.0	44.0	44.0	44.0	47.1	48.3	48.3
LOS by Move:	D	B	B	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	0	8	8	2	5	5	0	0	0	5	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #58: Wolfe Rd & Stewart Dr



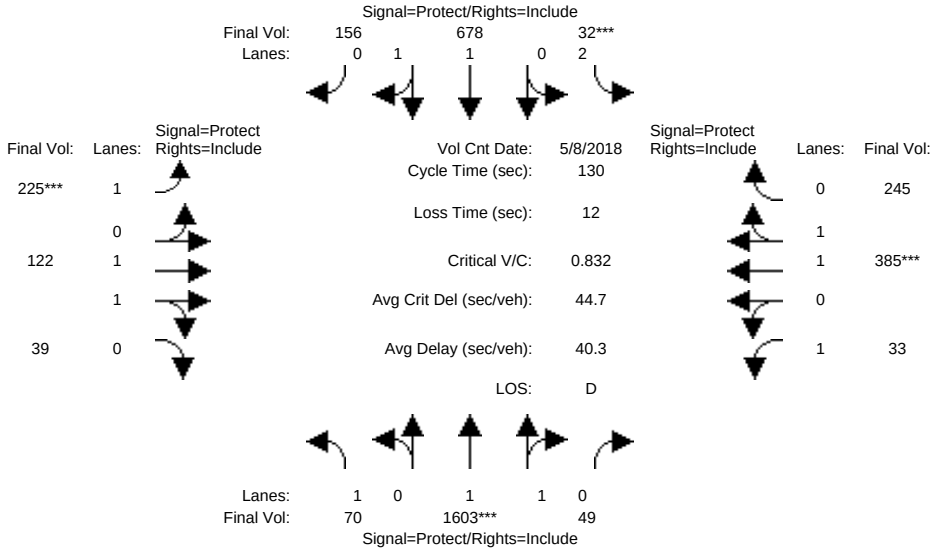
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	20	545	218	259	1340	10	4	1	5	249	7	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	545	218	259	1340	10	4	1	5	249	7	74
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	610	218	259	1345	10	4	1	5	249	7	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	610	218	259	1345	10	4	1	5	249	7	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	610	218	259	1345	10	4	1	5	249	7	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	610	218	259	1345	10	4	1	5	249	7	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.18	0.82	2.00	2.98	0.02	0.80	0.20	1.00	1.00	0.09	0.91
Final Sat.:	1750	4124	1474	3150	5559	41	1440	360	1750	1750	156	1644
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.08	0.24	0.24	0.00	0.00	0.00	0.14	0.05	0.05
Crit Moves:	****				****					****		
Green Time:	7.0	62.8	62.8	34.9	90.7	90.7	53.3	53.3	53.3	53.3	53.3	53.3
Volume/Cap:	0.26	0.38	0.38	0.38	0.43	0.43	0.01	0.01	0.01	0.43	0.14	0.14
Uniform Del:	74.0	34.7	34.7	53.3	19.8	19.8	35.7	35.7	35.7	41.5	37.2	37.2
IncremntDel:	1.8	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.8	34.8	34.8	53.6	19.9	19.9	35.7	35.7	35.7	42.0	37.3	37.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.8	34.8	34.8	53.6	19.9	19.9	35.7	35.7	35.7	42.0	37.3	37.3
LOS by Move:	E-	C-	C-	D-	B-	B-	D+	D+	D+	D	D+	D+
HCM2kAvgQ:	1	9	9	6	12	12	0	0	0	10	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



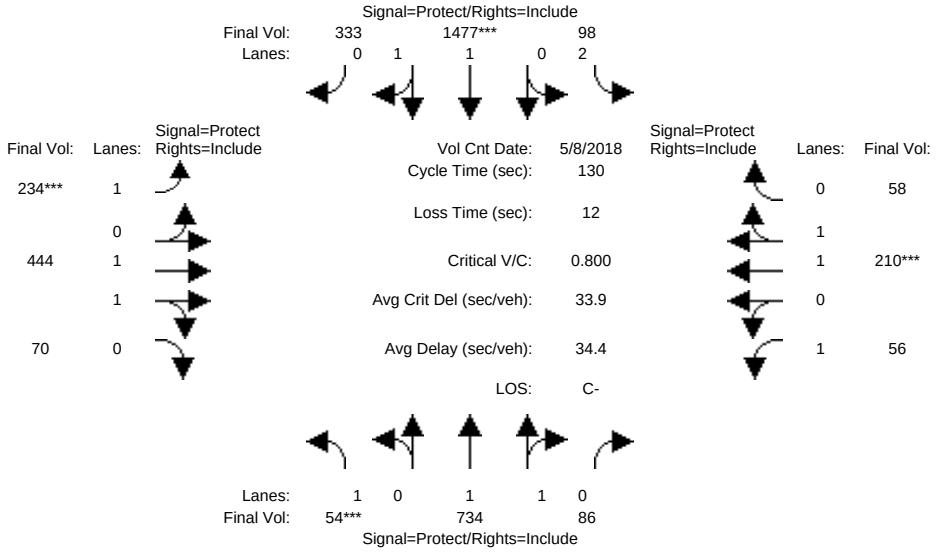
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	70	1544	49	32	667	156	225	122	39	33	385	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	1544	49	32	667	156	225	122	39	33	385	245
Added Vol:	0	59	0	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	1603	49	32	678	156	225	122	39	33	385	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	1603	49	32	678	156	225	122	39	33	385	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1603	49	32	678	156	225	122	39	33	385	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	1603	49	32	678	156	225	122	39	33	385	245
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.94	0.06	2.00	1.62	0.38	1.00	1.50	0.50	1.00	1.20	0.80
Final Sat.:	1750	3590	110	3150	3007	692	1750	2803	896	1750	2260	1438
Capacity Analysis Module:												
Vol/Sat:	0.04	0.45	0.45	0.01	0.23	0.23	0.13	0.04	0.04	0.02	0.17	0.17
Crit Moves:		****		****			****				****	
Green Time:	14.2	66.5	66.5	7.0	59.3	59.3	19.1	26.2	26.2	18.3	25.4	25.4
Volume/Cap:	0.37	0.87	0.87	0.19	0.49	0.49	0.87	0.22	0.22	0.13	0.87	0.87
Uniform Del:	53.8	28.0	28.0	58.8	24.8	24.8	54.2	43.3	43.3	48.9	50.8	50.8
IncremntDel:	1.2	4.8	4.8	0.5	0.2	0.2	26.2	0.1	0.1	0.2	11.4	11.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.0	32.8	32.8	59.3	25.0	25.0	80.5	43.5	43.5	49.1	62.1	62.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.0	32.8	32.8	59.3	25.0	25.0	80.5	43.5	43.5	49.1	62.1	62.1
LOS by Move:	D-	C-	C-	E+	C	C	F	D	D	D	E	E
HCM2kAvgQ:	3	32	32	1	12	12	11	3	3	1	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #62: Fair Oaks Ave & Evelyn Ave



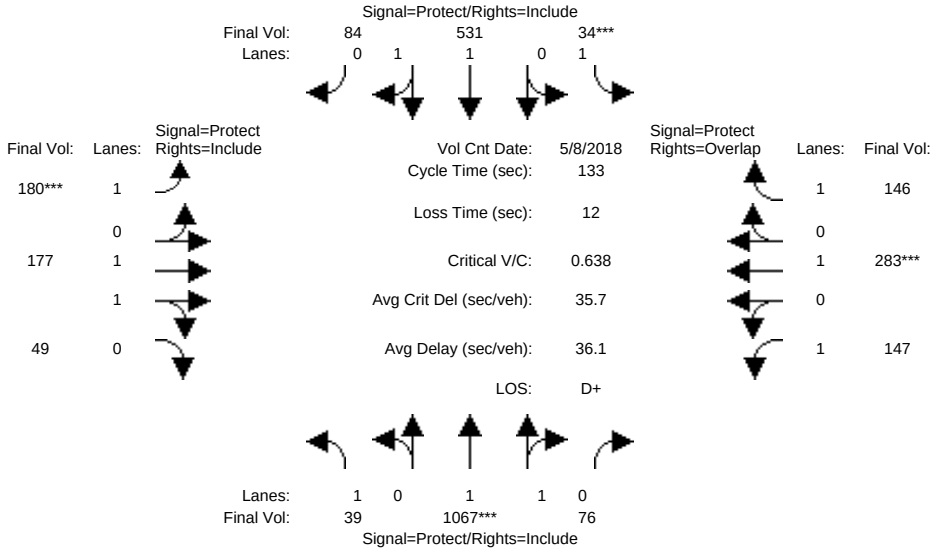
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	54	727	86	98	1408	333	234	444	70	56	210	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	727	86	98	1408	333	234	444	70	56	210	58
Added Vol:	0	7	0	0	69	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	734	86	98	1477	333	234	444	70	56	210	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	734	86	98	1477	333	234	444	70	56	210	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	734	86	98	1477	333	234	444	70	56	210	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	734	86	98	1477	333	234	444	70	56	210	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.78	0.22	2.00	1.62	0.38	1.00	1.72	0.28	1.00	1.56	0.44
Final Sat.:	1750	3312	388	3150	3019	681	1750	3196	504	1750	2899	801
Capacity Analysis Module:												
Vol/Sat:	0.03	0.22	0.22	0.03	0.49	0.49	0.13	0.14	0.14	0.03	0.07	0.07
Crit Moves:	****				****		****				****	
Green Time:	7.0	68.5	68.5	16.6	78.1	78.1	21.3	23.7	23.7	9.2	11.6	11.6
Volume/Cap:	0.57	0.42	0.42	0.24	0.81	0.81	0.81	0.76	0.76	0.45	0.81	0.81
Uniform Del:	60.0	18.7	18.7	51.0	20.3	20.3	52.4	50.5	50.5	58.0	58.2	58.2
IncremntDel:	8.3	0.1	0.1	0.3	2.4	2.4	16.2	5.1	5.1	2.6	14.4	14.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	18.9	18.9	51.3	22.7	22.7	68.6	55.6	55.6	60.6	72.6	72.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	18.9	18.9	51.3	22.7	22.7	68.6	55.6	55.6	60.6	72.6	72.6
LOS by Move:	E	B-	B-	D-	C+	C+	E	E+	E+	E	E	E
HCM2kAvgQ:	3	10	10	2	29	29	10	10	10	2	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



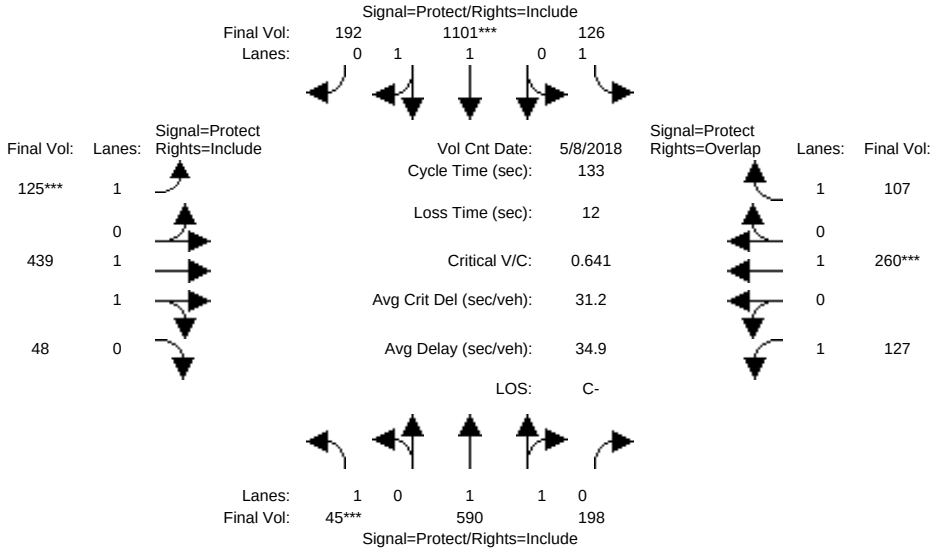
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	39	1045	76	34	527	79	153	177	49	147	283	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1045	76	34	527	79	153	177	49	147	283	146
Added Vol:	0	22	0	0	4	5	27	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1067	76	34	531	84	180	177	49	147	283	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	1067	76	34	531	84	180	177	49	147	283	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	1067	76	34	531	84	180	177	49	147	283	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	1067	76	34	531	84	180	177	49	147	283	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.86	0.14	1.00	1.72	0.28	1.00	1.55	0.45	1.00	1.00	1.00
Final Sat.:	1750	3454	246	1750	3194	505	1750	2897	802	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.31	0.31	0.02	0.17	0.17	0.10	0.06	0.06	0.08	0.15	0.08
Crit Moves:		****		****			****				****	
Green Time:	16.8	62.8	62.8	7.0	53.0	53.0	20.9	24.2	24.2	27.0	30.3	37.3
Volume/Cap:	0.18	0.65	0.65	0.37	0.42	0.42	0.65	0.34	0.34	0.41	0.65	0.30
Uniform Del:	51.9	26.8	26.8	60.9	28.8	28.8	52.6	47.4	47.4	46.1	46.6	37.6
IncremntDel:	0.4	0.9	0.9	2.5	0.2	0.2	5.6	0.3	0.3	0.8	3.6	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.3	27.7	27.7	63.4	29.0	29.0	58.2	47.7	47.7	46.9	50.2	37.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.3	27.7	27.7	63.4	29.0	29.0	58.2	47.7	47.7	46.9	50.2	37.9
LOS by Move:	D-	C	C	E	C	C	E+	D	D	D	D	D+
HCM2kAvgQ:	1	18	18	2	9	9	8	4	4	5	10	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #63: Fair Oaks Ave & Old SF Rd



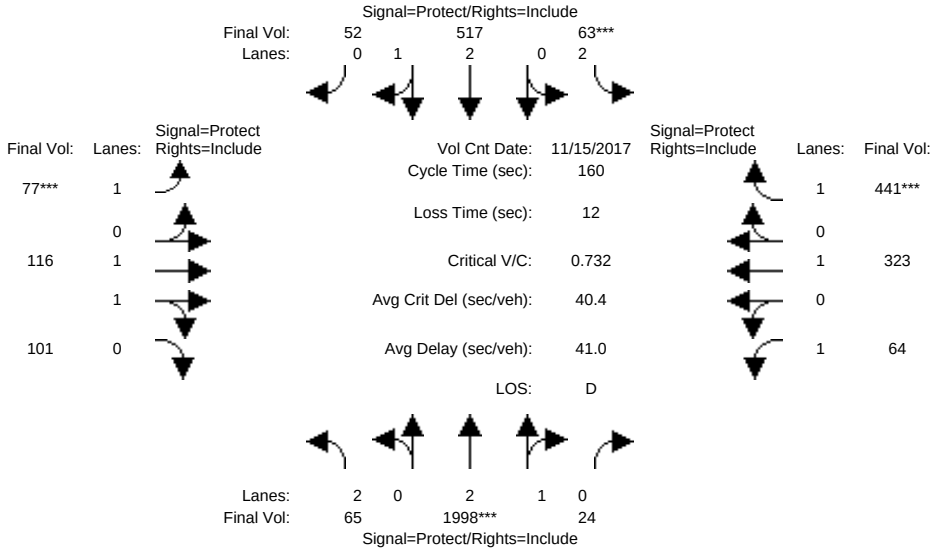
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	45	588	198	126	1076	161	122	439	48	127	260	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	588	198	126	1076	161	122	439	48	127	260	107
Added Vol:	0	2	0	0	25	31	3	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	590	198	126	1101	192	125	439	48	127	260	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	590	198	126	1101	192	125	439	48	127	260	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	590	198	126	1101	192	125	439	48	127	260	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	590	198	126	1101	192	125	439	48	127	260	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.48	0.52	1.00	1.69	0.31	1.00	1.80	0.20	1.00	1.00	1.00
Final Sat.:	1750	2770	929	1750	3150	549	1750	3335	365	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.21	0.07	0.35	0.35	0.07	0.13	0.13	0.07	0.14	0.06
Crit Moves:	****				****		****				****	
Green Time:	7.0	58.6	58.6	19.8	71.4	71.4	14.6	27.4	27.4	15.1	28.0	47.8
Volume/Cap:	0.49	0.48	0.48	0.48	0.65	0.65	0.65	0.64	0.64	0.64	0.65	0.17
Uniform Del:	61.3	26.4	26.4	51.9	21.9	21.9	56.8	48.2	48.2	56.3	48.0	29.1
IncremntDel:	4.0	0.2	0.2	1.4	0.8	0.8	7.7	1.8	1.8	6.7	3.8	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.3	26.7	26.7	53.3	22.7	22.7	64.4	50.1	50.1	63.1	51.8	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	26.7	26.7	53.3	22.7	22.7	64.4	50.1	50.1	63.1	51.8	29.2
LOS by Move:	E	C	C	D-	C+	C+	E	D	D	E	D-	C
HCM2kAvgQ:	2	11	11	6	19	19	6	10	10	5	10	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



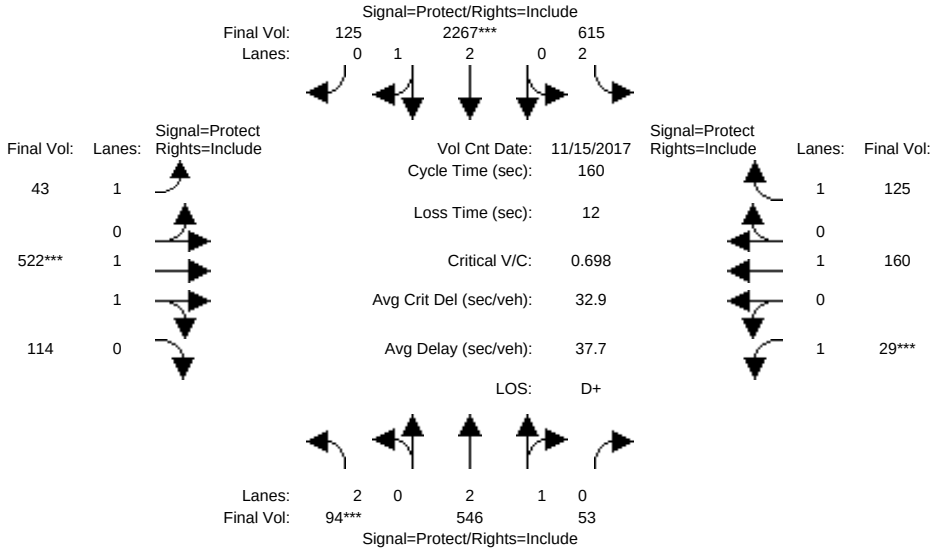
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	1966	24	63	511	52	77	116	101	64	323	441
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1966	24	63	511	52	77	116	101	64	323	441
Added Vol:	0	32	0	0	6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1998	24	63	517	52	77	116	101	64	323	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1998	24	63	517	52	77	116	101	64	323	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1998	24	63	517	52	77	116	101	64	323	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1998	24	63	517	52	77	116	101	64	323	441
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	2.00	2.96	0.04	2.00	2.72	0.28	1.00	1.04	0.96	1.00	1.00	1.00
Final Sat.:	3150	5533	66	3150	5088	512	1750	1977	1721	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.36	0.36	0.02	0.10	0.10	0.04	0.06	0.06	0.04	0.17	0.25
Crit Moves:		****		****			****					****
Green Time:	25.4	77.5	77.5	7.0	59.1	59.1	9.4	37.4	37.4	26.2	54.1	54.1
Volume/Cap:	0.13	0.75	0.75	0.46	0.28	0.28	0.75	0.25	0.25	0.22	0.50	0.75
Uniform Del:	57.8	33.3	33.3	74.6	35.4	35.4	74.1	49.9	49.9	58.1	42.2	46.9
IncremntDel:	0.1	1.2	1.2	2.4	0.1	0.1	25.3	0.2	0.2	0.4	0.6	5.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.9	34.5	34.5	77.0	35.5	35.5	99.4	50.1	50.1	58.5	42.9	52.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.9	34.5	34.5	77.0	35.5	35.5	99.4	50.1	50.1	58.5	42.9	52.0
LOS by Move:	E+	C-	C-	E-	D+	D+	F	D	D	E+	D	D-
HCM2kAvgQ:	2	27	27	2	6	6	4	4	4	3	12	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #64: Wolfe Rd & Evelyn Ave



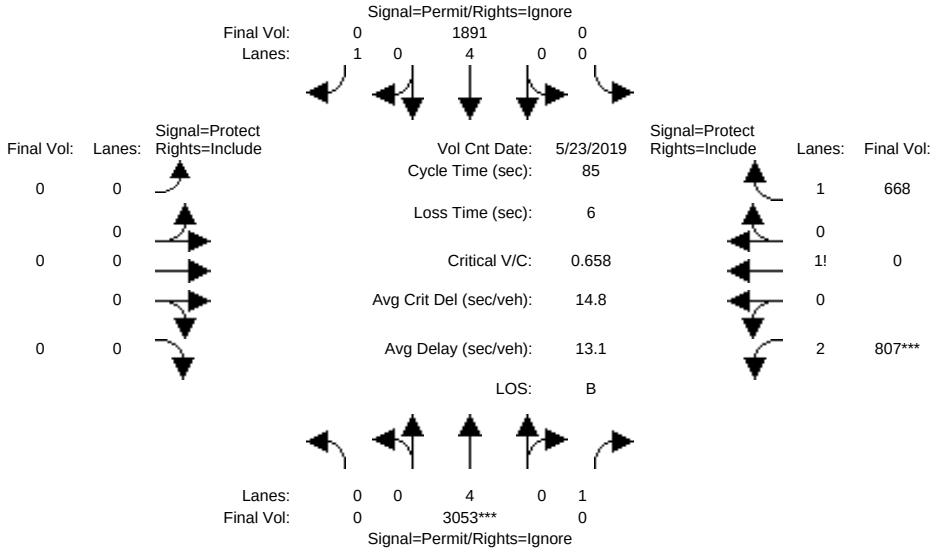
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	94	542	53	615	2230	125	43	522	114	29	160	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	542	53	615	2230	125	43	522	114	29	160	125
Added Vol:	0	4	0	0	37	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	546	53	615	2267	125	43	522	114	29	160	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	546	53	615	2267	125	43	522	114	29	160	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	546	53	615	2267	125	43	522	114	29	160	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	546	53	615	2267	125	43	522	114	29	160	125
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.84	0.16	1.00	1.63	0.37	1.00	1.00	1.00
Final Sat.:	3150	5104	495	3150	5307	293	1750	3036	663	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.11	0.20	0.43	0.43	0.02	0.17	0.17	0.02	0.08	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.0	36.3	36.3	66.2	95.5	95.5	15.5	38.5	38.5	7.0	29.9	29.9
Volume/Cap:	0.68	0.47	0.47	0.47	0.72	0.72	0.25	0.72	0.72	0.38	0.45	0.38
Uniform Del:	75.4	53.5	53.5	34.1	22.7	22.7	66.9	55.8	55.8	74.4	57.7	57.0
IncremntDel:	13.1	0.3	0.3	0.3	0.8	0.8	0.8	2.8	2.8	3.1	0.9	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.5	53.8	53.8	34.4	23.4	23.4	67.6	58.5	58.5	77.5	58.7	57.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	53.8	53.8	34.4	23.4	23.4	67.6	58.5	58.5	77.5	58.7	57.7
LOS by Move:	F	D-	D-	C-	C	C	E	E+	E+	E-	E+	E+
HCM2kAvgQ:	3	8	8	12	26	26	2	14	14	2	7	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



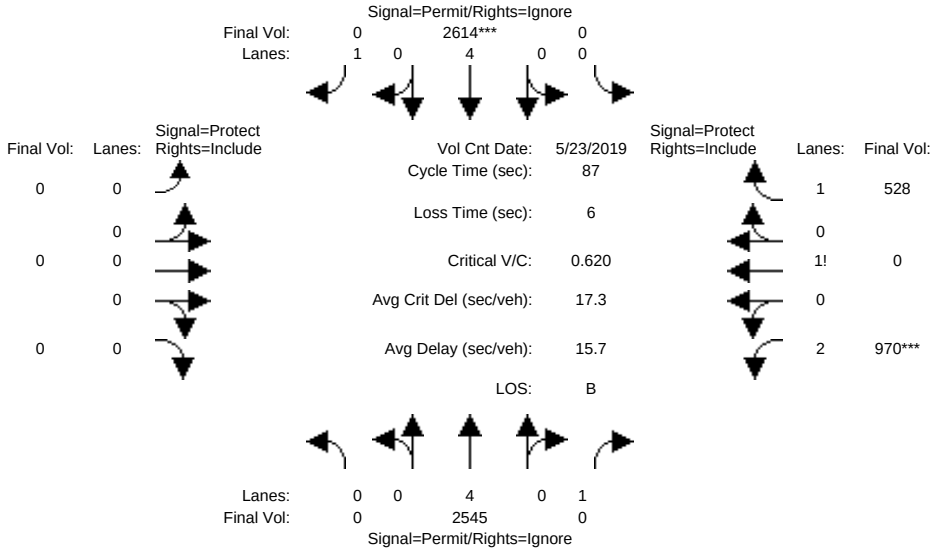
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	3043	676	0	1837	381	0	0	0	767	0	668
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3043	676	0	1837	381	0	0	0	767	0	668
Added Vol:	0	10	0	0	54	0	0	0	0	40	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3053	676	0	1891	381	0	0	0	807	0	668
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3053	0	0	1891	0	0	0	0	807	0	668
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3053	0	0	1891	0	0	0	0	807	0	668
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	3053	0	0	1891	0	0	0	0	807	0	668
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.82	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.48	0.00	1.52
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3844	0	2667
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.21	0.00	0.25
Crit Moves:		****								****		
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	22.7
Volume/Cap:	0.00	0.67	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.79	0.00	0.94
Uniform Del:	0.0	11.4	0.0	0.0	9.1	0.0	0.0	0.0	0.0	28.9	0.0	30.4
IncremntDel:	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	2.3	0.0	11.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.9	0.0	0.0	5.3	0.0	0.0	0.0	0.0	31.1	0.0	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.9	0.0	0.0	5.3	0.0	0.0	0.0	0.0	31.1	0.0	41.4
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	D
HCM2kAvgQ:	0	10	0	0	4	0	0	0	0	12	0	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #67: Lawrence Expwy & US 101 NB Ramps



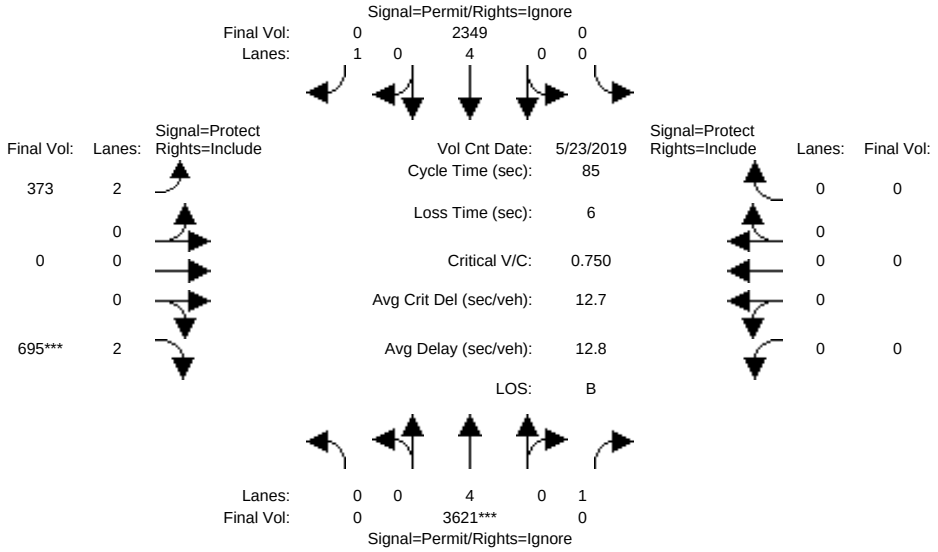
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2483	590	0	2608	551	0	0	0	965	0	528
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2483	590	0	2608	551	0	0	0	965	0	528
Added Vol:	0	62	0	0	6	0	0	0	0	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2545	590	0	2614	551	0	0	0	970	0	528
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2545	0	0	2614	0	0	0	0	970	0	528
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2545	0	0	2614	0	0	0	0	970	0	528
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2545	0	0	2614	0	0	0	0	970	0	528
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.85	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.57	0.00	1.43
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	4151	0	2502
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.23	0.00	0.21
Crit Moves:					****					****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.55	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.90	0.00	0.81
Uniform Del:	0.0	9.9	0.0	0.0	10.0	0.0	0.0	0.0	0.0	31.0	0.0	30.1
IncremntDel:	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	6.7	0.0	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	14.1	0.0	0.0	5.6	0.0	0.0	0.0	0.0	37.7	0.0	32.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.1	0.0	0.0	5.6	0.0	0.0	0.0	0.0	37.7	0.0	32.9
LOS by Move:	A	B	A	A	A	A	A	A	A	D+	A	C-
HCM2kAvgQ:	0	13	0	0	6	0	0	0	0	15	0	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



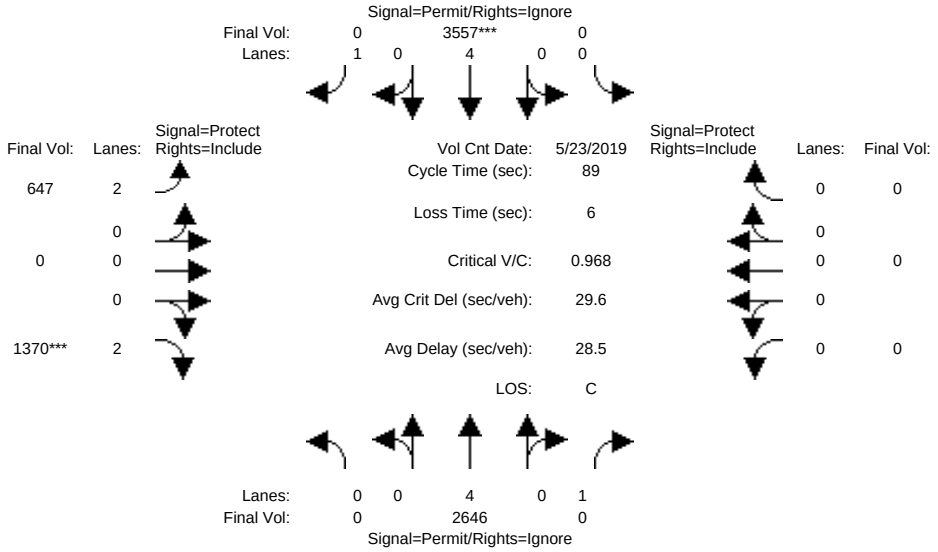
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	3604	781	0	2255	340	373	0	655	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3604	781	0	2255	340	373	0	655	0	0	0
Added Vol:	0	17	0	0	94	0	0	0	40	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3621	781	0	2349	340	373	0	695	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3621	0	0	2349	0	373	0	695	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3621	0	0	2349	0	373	0	695	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	3621	0	0	2349	0	373	0	695	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.48	0.00	0.00	0.31	0.00	0.12	0.00	0.22	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.67	0.00	0.00	0.55	0.00	0.80	0.00	1.01	0.00	0.00	0.00
Uniform Del:	0.0	6.8	0.0	0.0	11.9	0.0	35.0	0.0	33.2	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	0.2	0.0	9.4	0.0	36.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.8	0.0	0.0	8.0	0.0	44.4	0.0	69.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.8	0.0	0.0	8.0	0.0	44.4	0.0	69.5	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	D	A	E	A	A	A
HCM2kAvgQ:	0	5	0	0	7	0	8	0	17	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #68: Lawrence Expwy & US 101 SB Ramps



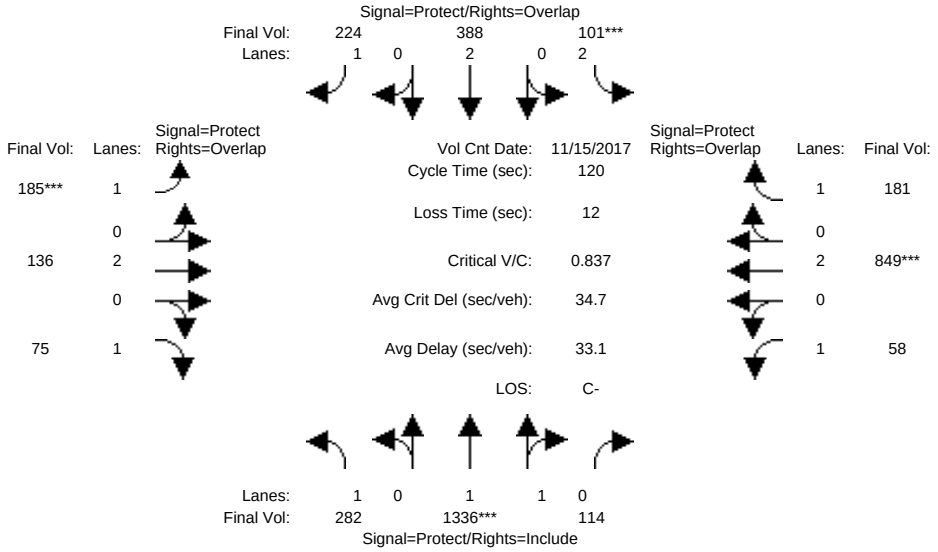
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	2537	517	0	3546	178	647	0	1365	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2537	517	0	3546	178	647	0	1365	0	0	0
Added Vol:	0	109	0	0	11	0	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2646	517	0	3557	178	647	0	1370	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2646	0	0	3557	0	647	0	1370	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2646	0	0	3557	0	647	0	1370	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2646	0	0	3557	0	647	0	1370	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.00	0.00	0.47	0.00	0.21	0.00	0.43	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.50	0.00	0.00	0.93	0.00	1.16	0.00	1.01	0.00	0.00	0.00
Uniform Del:	0.0	6.4	0.0	0.0	20.8	0.0	36.7	0.0	25.3	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	5.1	0.0	92.4	0.0	26.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.9	0.0	0.0	21.0	0.0	129.0	0.0	51.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.9	0.0	0.0	21.0	0.0	129.0	0.0	51.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	C+	A	F	A	D-	A	A	A
HCM2kAvgQ:	0	3	0	0	27	0	21	0	31	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



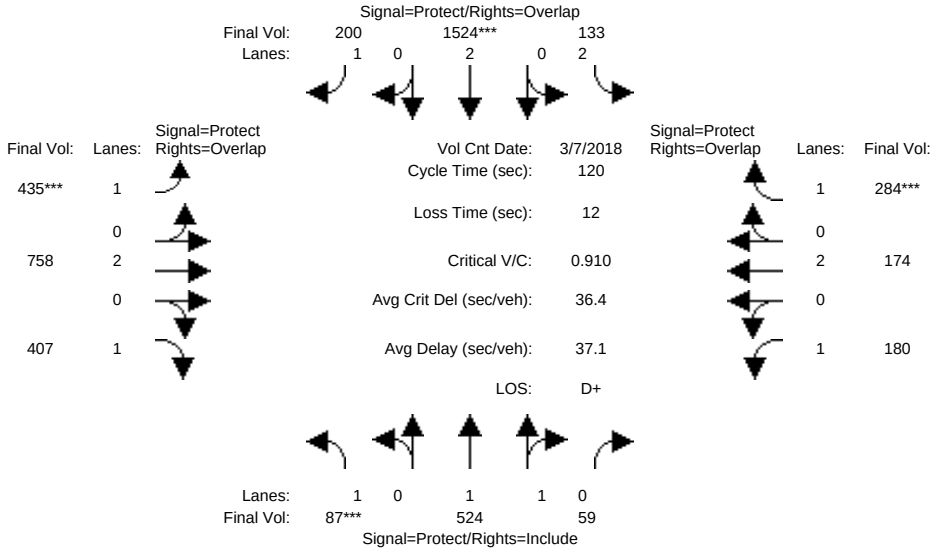
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	257	1216	104	92	353	204	168	115	68	53	722	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	257	1216	104	92	353	204	168	115	68	53	722	165
Added Vol:	0	0	0	0	0	0	0	9	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	257	1216	104	92	353	204	168	124	68	53	773	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	282	1336	114	101	388	224	185	136	75	58	849	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	282	1336	114	101	388	224	185	136	75	58	849	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	282	1336	114	101	388	224	185	136	75	58	849	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3408	291	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.39	0.39	0.03	0.10	0.13	0.11	0.04	0.04	0.03	0.22	0.10
Crit Moves:		****		****			****				****	
Green Time:	38.2	54.4	54.4	8.0	24.2	38.8	14.6	22.8	61.0	22.8	31.0	39.0
Volume/Cap:	0.51	0.87	0.87	0.48	0.51	0.40	0.87	0.19	0.08	0.18	0.87	0.32
Uniform Del:	33.2	29.5	29.5	54.0	42.6	31.5	51.7	40.8	15.1	40.7	42.5	30.5
IncremntDel:	0.8	5.0	5.0	1.7	0.6	0.5	28.8	0.1	0.0	0.3	8.1	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.69	0.45	0.45	0.95	0.83	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	23.7	18.2	18.2	53.2	36.0	21.9	80.5	40.9	15.2	41.0	50.7	30.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.7	18.2	18.2	53.2	36.0	21.9	80.5	40.9	15.2	41.0	50.7	30.8
LOS by Move:	C	B-	B-	D-	D+	C+	F	D	B	D	D	C
HCM2kAvgQ:	7	19	19	2	6	5	8	2	1	2	15	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #84: Bowers Ave & Kifer Rd



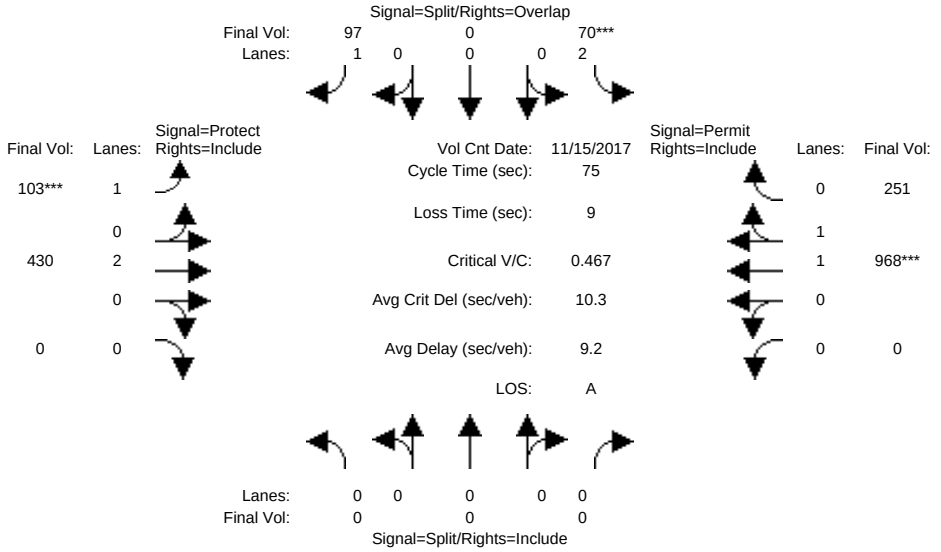
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	86	519	58	132	1509	198	431	691	403	178	166	281
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	519	58	132	1509	198	431	691	403	178	166	281
Added Vol:	0	0	0	0	0	0	0	59	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	519	58	132	1509	198	431	750	403	178	172	281
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	87	524	59	133	1524	200	435	758	407	180	174	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	524	59	133	1524	200	435	758	407	180	174	284
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	524	59	133	1524	200	435	758	407	180	174	284
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.79	0.21	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3328	372	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.16	0.04	0.40	0.11	0.25	0.20	0.23	0.10	0.05	0.16
Crit Moves:	****				****		****					****
Green Time:	6.5	41.7	41.7	17.7	52.9	85.7	32.8	29.9	36.5	15.4	12.6	30.3
Volume/Cap:	0.91	0.45	0.45	0.29	0.91	0.16	0.91	0.80	0.76	0.80	0.44	0.64
Uniform Del:	56.4	30.3	30.3	45.6	31.4	5.5	42.2	42.2	37.9	50.8	50.4	40.1
IncremntDel:	63.7	0.3	0.3	0.3	7.8	0.1	21.4	4.9	6.5	18.0	0.8	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.96	0.64	0.64	0.88	0.47	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	117.9	19.8	19.8	40.7	22.7	0.1	63.6	47.1	44.4	68.8	51.1	43.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.9	19.8	19.8	40.7	22.7	0.1	63.6	47.1	44.4	68.8	51.1	43.3
LOS by Move:	F	B-	B-	D	C+	A	E	D	D	E	D-	D
HCM2kAvgQ:	4	6	6	2	22	0	18	13	15	7	3	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



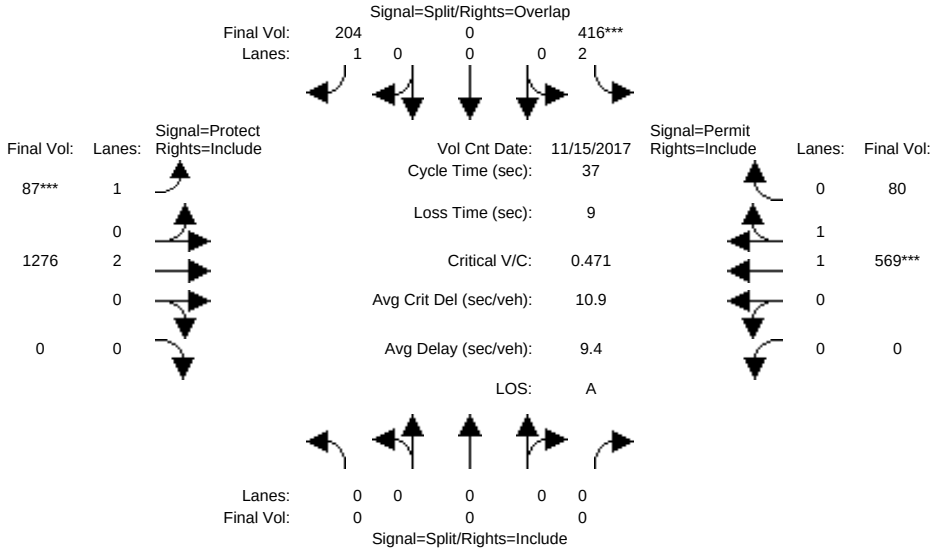
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	63	0	87	93	378	0	0	820	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	63	0	87	93	378	0	0	820	226
Added Vol:	0	0	0	0	0	0	0	9	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	63	0	87	93	387	0	0	871	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	70	0	97	103	430	0	0	968	251
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	70	0	97	103	430	0	0	968	251
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	70	0	97	103	430	0	0	968	251
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.58	0.42
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2937	762
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.06	0.06	0.11	0.00	0.00	0.33	0.33
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	8.9	0.0	17.6	8.7	57.1	0.0	0.0	48.4	48.4
Volume/Cap:	0.00	0.00	0.00	0.19	0.00	0.24	0.51	0.15	0.00	0.00	0.51	0.51
Uniform Del:	0.0	0.0	0.0	29.8	0.0	23.3	31.2	2.4	0.0	0.0	7.0	7.0
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.3	2.2	0.0	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	30.1	0.0	23.6	33.3	2.4	0.0	0.0	7.2	7.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	30.1	0.0	23.6	33.3	2.4	0.0	0.0	7.2	7.2
LOS by Move:	A	A	A	C	A	C	C-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	2	2	1	0	0	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #85: Corvin Dr & Kifer Rd



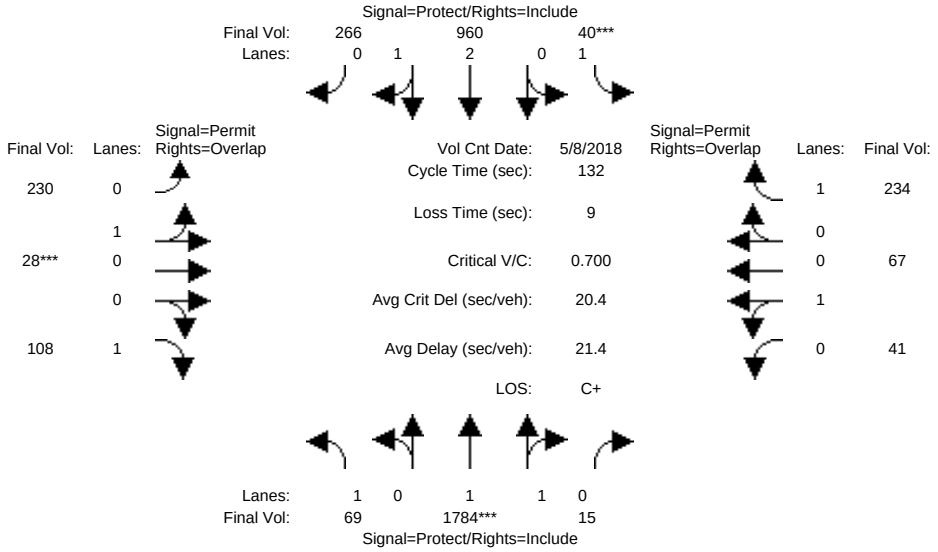
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	370	0	182	77	1077	0	0	500	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	370	0	182	77	1077	0	0	500	71
Added Vol:	0	0	0	0	0	0	0	59	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	370	0	182	77	1136	0	0	506	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	416	0	204	87	1276	0	0	569	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	416	0	204	87	1276	0	0	569	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	416	0	204	87	1276	0	0	569	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.75	0.25
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3244	455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.12	0.05	0.34	0.00	0.00	0.18	0.18
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	9.9	0.0	14.9	5.0	18.1	0.0	0.0	13.1	13.1
Volume/Cap:	0.00	0.00	0.00	0.49	0.00	0.29	0.37	0.69	0.00	0.00	0.49	0.49
Uniform Del:	0.0	0.0	0.0	11.4	0.0	7.5	14.6	7.3	0.0	0.0	9.3	9.3
IncremntDel:	0.0	0.0	0.0	0.5	0.0	0.2	1.0	1.1	0.0	0.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.9	0.0	7.7	15.5	8.3	0.0	0.0	9.6	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.9	0.0	7.7	15.5	8.3	0.0	0.0	9.6	9.6
LOS by Move:	A	A	A	B+	A	A	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	2	1	5	0	0	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



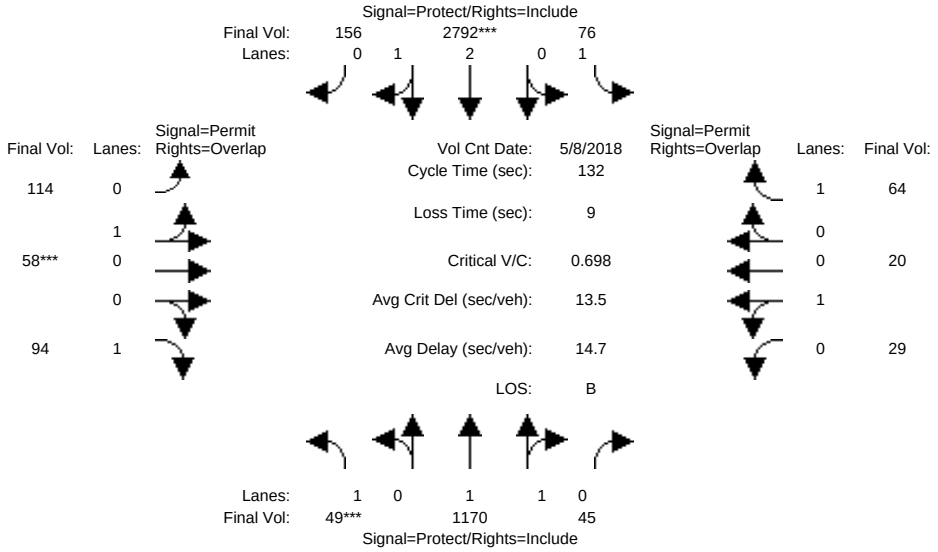
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	69	1777	15	40	920	266	230	28	108	41	67	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	1777	15	40	920	266	230	28	108	41	67	234
Added Vol:	0	7	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	1784	15	40	960	266	230	28	108	41	67	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	1784	15	40	960	266	230	28	108	41	67	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	1784	15	40	960	266	230	28	108	41	67	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	1784	15	40	960	266	230	28	108	41	67	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.33	0.67	0.89	0.11	1.00	0.38	0.62	1.00
Final Sat.:	1750	3669	31	1750	4383	1215	1605	195	1750	683	1117	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.49	0.49	0.02	0.22	0.22	0.14	0.14	0.06	0.06	0.06	0.13
Crit Moves:		****		****				****				
Green Time:	18.8	89.6	89.6	7.0	77.8	77.8	26.4	26.4	45.2	26.4	26.4	33.4
Volume/Cap:	0.28	0.72	0.72	0.43	0.37	0.37	0.72	0.72	0.18	0.30	0.30	0.53
Uniform Del:	50.5	13.3	13.3	60.6	14.3	14.3	49.3	49.3	30.4	44.9	44.9	42.5
IncremntDel:	0.6	1.0	1.0	3.2	0.1	0.1	6.8	6.8	0.1	0.5	0.5	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.1	14.3	14.3	63.8	14.3	14.3	56.0	56.0	30.5	45.4	45.4	43.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.1	14.3	14.3	63.8	14.3	14.3	56.0	56.0	30.5	45.4	45.4	43.7
LOS by Move:	D-	B	B	E	B	B	E+	E+	C	D	D	D
HCM2kAvgQ:	3	23	23	2	9	9	11	11	3	4	4	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #91: Fair Oaks Ave & Ahwanee Ave



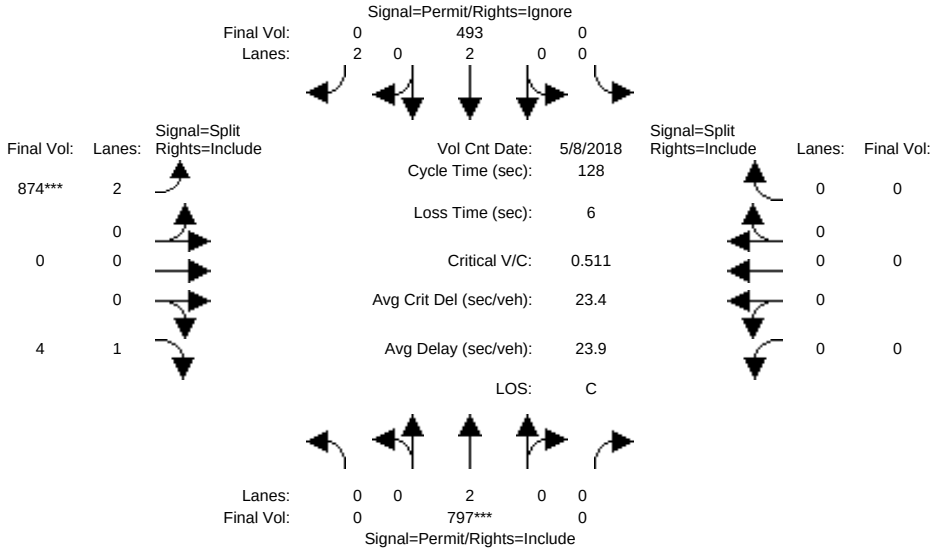
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	49	1123	45	76	2787	156	114	58	94	29	20	64
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	1123	45	76	2787	156	114	58	94	29	20	64
Added Vol:	0	47	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	1170	45	76	2792	156	114	58	94	29	20	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	1170	45	76	2792	156	114	58	94	29	20	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	1170	45	76	2792	156	114	58	94	29	20	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	1170	45	76	2792	156	114	58	94	29	20	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.92	0.08	1.00	2.84	0.16	0.66	0.34	1.00	0.59	0.41	1.00
Final Sat.:	1750	3563	137	1750	5303	296	1193	607	1750	1065	735	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.33	0.33	0.04	0.53	0.53	0.10	0.10	0.05	0.03	0.03	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	90.6	90.6	14.6	98.2	98.2	17.8	17.8	24.8	17.8	17.8	32.4
Volume/Cap:	0.53	0.48	0.48	0.39	0.71	0.71	0.71	0.71	0.29	0.20	0.20	0.15
Uniform Del:	60.9	9.7	9.7	54.6	9.1	9.1	54.6	54.6	46.0	50.8	50.8	39.0
IncremntDel:	5.6	0.1	0.1	1.3	0.6	0.6	9.2	9.2	0.5	0.4	0.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.5	9.8	9.8	55.9	9.7	9.7	63.8	63.8	46.5	51.2	51.2	39.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	9.8	9.8	55.9	9.7	9.7	63.8	63.8	46.5	51.2	51.2	39.1
LOS by Move:	E	A	A	E+	A	A	E	E	D	D-	D-	D
HCM2kAvgQ:	2	11	11	3	22	22	8	8	4	2	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



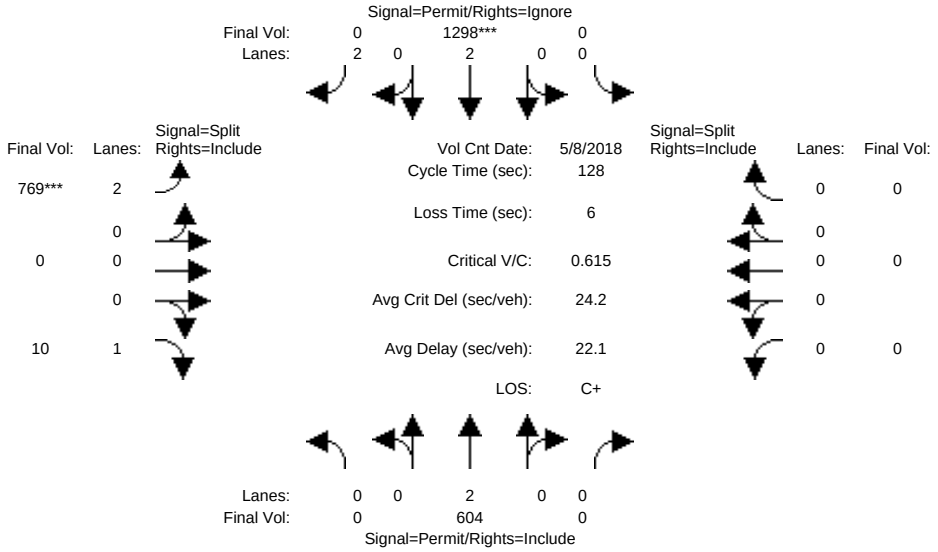
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	787	0	0	453	746	874	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	787	0	0	453	746	874	0	4	0	0	0
Added Vol:	0	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	797	0	0	493	746	874	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	797	0	0	493	0	874	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	797	0	0	493	0	874	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	797	0	0	493	0	874	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.00	0.00	0.13	0.00	0.28	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	52.5	0.0	0.0	52.5	0.0	69.5	0.0	69.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.00	0.00	0.32	0.00	0.51	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	28.2	0.0	0.0	25.6	0.0	18.5	0.0	13.4	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	28.4	0.0	0.0	25.7	0.0	18.8	0.0	13.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.4	0.0	0.0	25.7	0.0	18.8	0.0	13.4	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B-	A	B	A	A	A
HCM2kAvgQ:	0	11	0	0	6	0	13	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #92: Fair Oaks Ave & Wolfe Rd



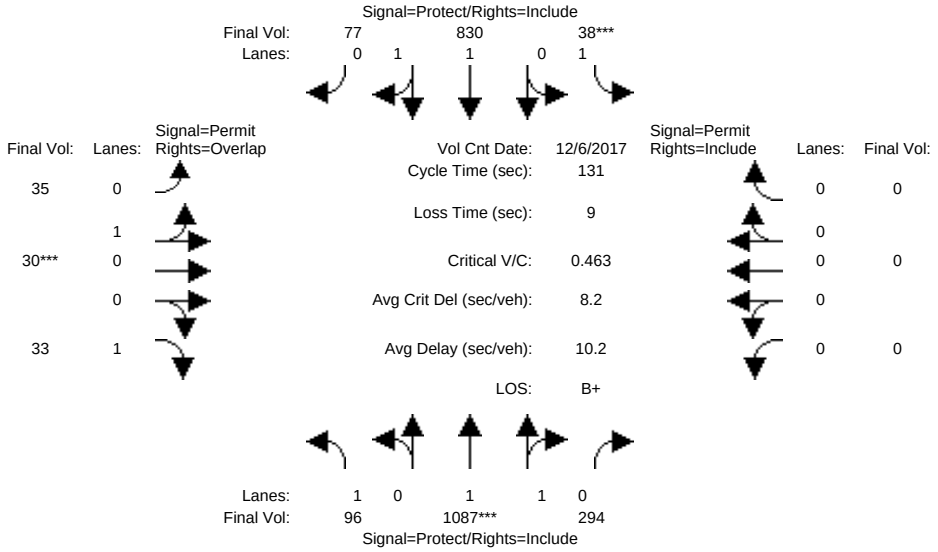
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	539	0	0	1293	1272	769	0	10	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	539	0	0	1293	1272	769	0	10	0	0	0
Added Vol:	0	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	604	0	0	1298	1272	769	0	10	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	604	0	0	1298	0	769	0	10	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	604	0	0	1298	0	769	0	10	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	604	0	0	1298	0	769	0	10	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.00	0.00	0.34	0.00	0.24	0.00	0.01	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	71.1	0.0	0.0	71.1	0.0	50.9	0.0	50.9	0.0	0.0	0.0
Volume/Cap:	0.00	0.29	0.00	0.00	0.61	0.00	0.61	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	15.0	0.0	0.0	19.2	0.0	30.8	0.0	23.4	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.5	0.0	0.9	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	15.1	0.0	0.0	19.7	0.0	31.7	0.0	23.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.1	0.0	0.0	19.7	0.0	31.7	0.0	23.4	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B-	A	C	A	C	A	A	A
HCM2kAvgQ:	0	6	0	0	16	0	15	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



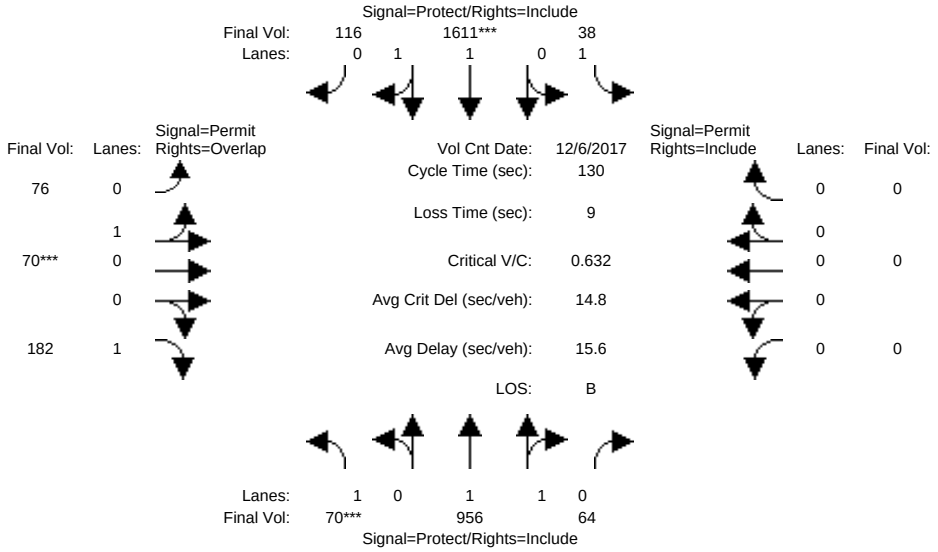
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	96	1082	294	38	830	77	35	30	33	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	1082	294	38	830	77	35	30	33	0	0	0
Added Vol:	0	5	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	1087	294	38	830	77	35	30	33	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	96	1087	294	38	830	77	35	30	33	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	1087	294	38	830	77	35	30	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	96	1087	294	38	830	77	35	30	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.56	0.44	1.00	1.83	0.17	0.54	0.46	1.00	0.00	0.00	0.00
Final Sat.:	1750	2912	788	1750	3386	314	969	831	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.37	0.37	0.02	0.25	0.25	0.04	0.04	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	20.5	105	104.9	7.0	91.4	91.4	10.1	10.1	30.6	0.0	0.0	0.0
Volume/Cap:	0.35	0.47	0.47	0.41	0.35	0.35	0.47	0.47	0.08	0.00	0.00	0.00
Uniform Del:	49.4	4.2	4.2	60.0	7.9	7.9	57.8	57.8	39.2	0.0	0.0	0.0
IncremntDel:	0.8	0.1	0.1	2.9	0.1	0.1	2.5	2.5	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	50.1	4.3	4.3	62.9	8.0	8.0	60.3	60.3	39.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.1	4.3	4.3	62.9	8.0	8.0	60.3	60.3	39.3	0.0	0.0	0.0
LOS by Move:	D	A	A	E	A	A	E	E	D	A	A	A
HCM2kAvgQ:	4	9	9	2	7	7	3	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #95: Fair Oaks Ave & California Ave



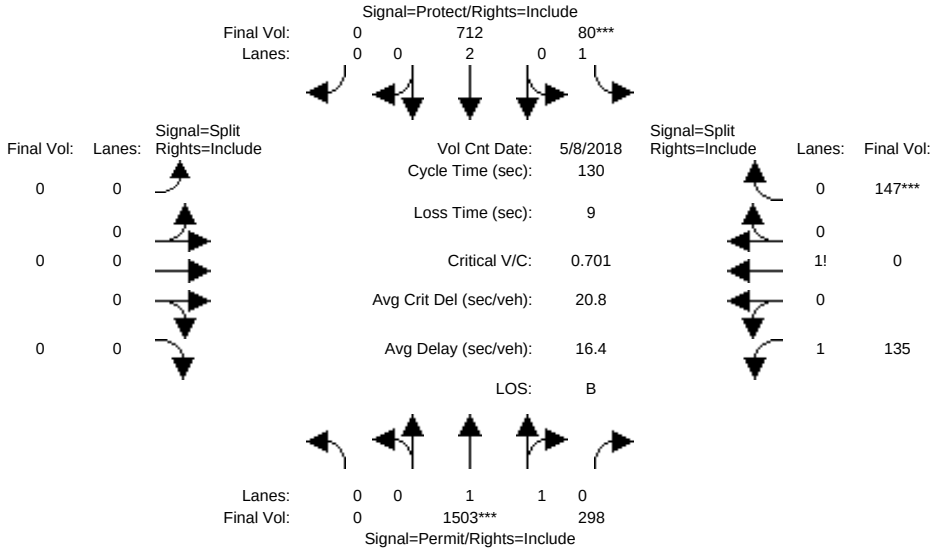
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	70	925	64	38	1611	116	76	70	182	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	925	64	38	1611	116	76	70	182	0	0	0
Added Vol:	0	31	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	956	64	38	1611	116	76	70	182	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	956	64	38	1611	116	76	70	182	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	956	64	38	1611	116	76	70	182	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	956	64	38	1611	116	76	70	182	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.87	0.13	1.00	1.86	0.14	0.52	0.48	1.00	0.00	0.00	0.00
Final Sat.:	1750	3468	232	1750	3451	249	937	863	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.28	0.02	0.47	0.47	0.08	0.08	0.10	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	8.2	87.3	87.3	17.0	96.1	96.1	16.7	16.7	24.9	0.0	0.0	0.0
Volume/Cap:	0.63	0.41	0.41	0.17	0.63	0.63	0.63	0.63	0.54	0.00	0.00	0.00
Uniform Del:	59.4	9.7	9.7	50.2	8.3	8.3	53.7	53.7	47.4	0.0	0.0	0.0
IncremntDel:	11.2	0.1	0.1	0.3	0.5	0.5	5.6	5.6	1.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	70.6	9.8	9.8	50.5	8.8	8.8	59.3	59.3	49.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.6	9.8	9.8	50.5	8.8	8.8	59.3	59.3	49.2	0.0	0.0	0.0
LOS by Move:	E	A	A	D	A	A	E+	E+	D	A	A	A
HCM2kAvgQ:	3	9	9	1	16	16	6	6	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



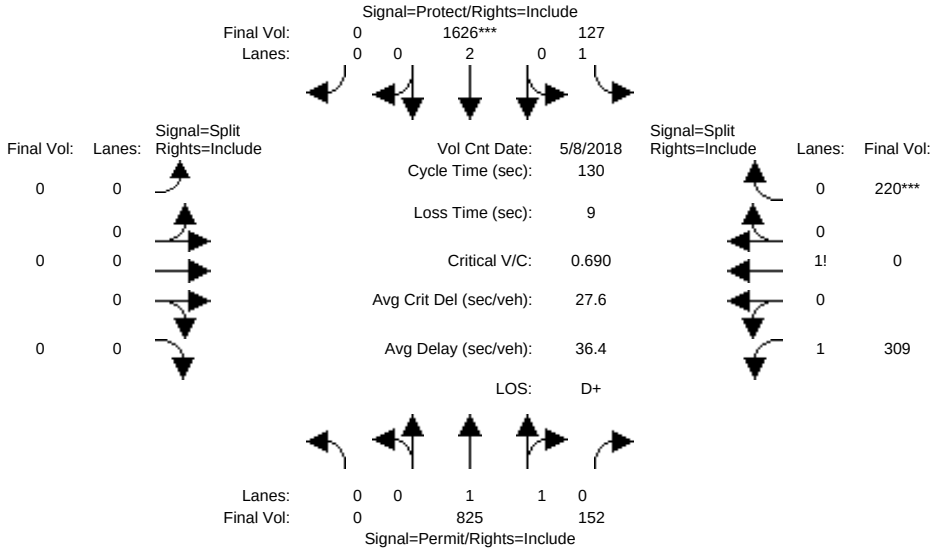
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1503	239	80	712	0	0	0	0	124	0	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1503	239	80	712	0	0	0	0	124	0	142
Added Vol:	0	0	59	0	0	0	0	0	0	11	0	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1503	298	80	712	0	0	0	0	135	0	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1503	298	80	712	0	0	0	0	135	0	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1503	298	80	712	0	0	0	0	135	0	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1503	298	80	712	0	0	0	0	135	0	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.66	0.34	1.00	2.00	0.00	0.00	0.00	0.00	1.32	0.00	0.68
Final Sat.:	0	3087	612	1750	3800	0	0	0	0	2311	0	1223
Capacity Analysis Module:												
Vol/Sat:	0.00	0.49	0.49	0.05	0.19	0.00	0.00	0.00	0.00	0.06	0.00	0.12
Crit Moves:		****		****								****
Green Time:	0.0	90.2	90.2	8.5	98.7	0.0	0.0	0.0	0.0	22.3	0.0	22.3
Volume/Cap:	0.00	0.70	0.70	0.70	0.25	0.00	0.00	0.00	0.00	0.34	0.00	0.70
Uniform Del:	0.0	11.8	11.8	59.5	4.6	0.0	0.0	0.0	0.0	47.4	0.0	50.7
IncremntDel:	0.0	0.9	0.9	17.7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	5.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	12.7	12.7	77.3	4.7	0.0	0.0	0.0	0.0	47.6	0.0	56.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.7	12.7	77.3	4.7	0.0	0.0	0.0	0.0	47.6	0.0	56.2
LOS by Move:	A	B	B	E-	A	A	A	A	A	D	A	E+
HCM2kAvgQ:	0	21	21	4	4	0	0	0	0	4	0	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #96: Fair Oaks Ave & Kifer Rd



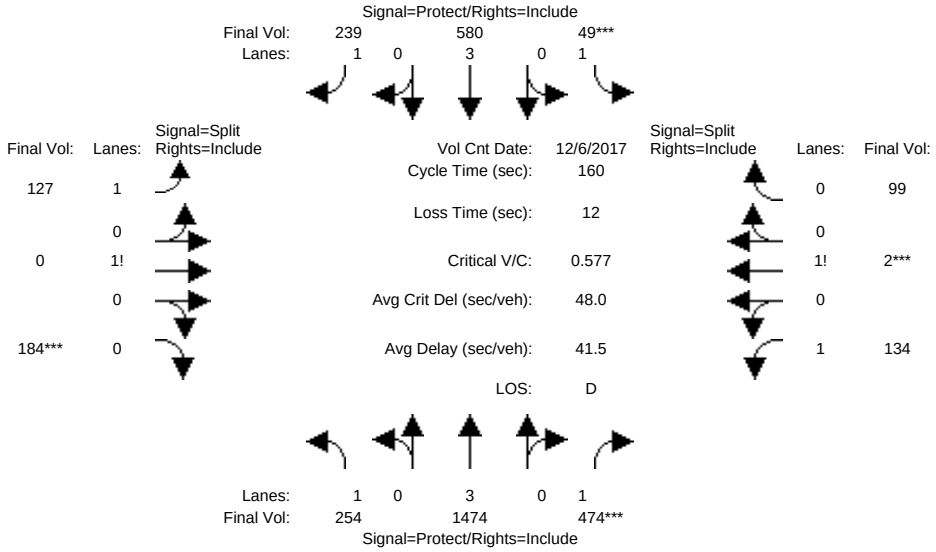
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	825	145	127	1626	0	0	0	0	240	0	189
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	825	145	127	1626	0	0	0	0	240	0	189
Added Vol:	0	0	7	0	0	0	0	0	0	69	0	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	825	152	127	1626	0	0	0	0	309	0	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	825	152	127	1626	0	0	0	0	309	0	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	825	152	127	1626	0	0	0	0	309	0	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	825	152	127	1626	0	0	0	0	309	0	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.68	0.32	1.00	2.00	0.00	0.00	0.00	0.00	1.41	0.00	0.59
Final Sat.:	0	3124	576	1750	3800	0	0	0	0	2472	0	1028
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.07	0.43	0.00	0.00	0.00	0.00	0.13	0.00	0.21
Crit Moves:					****							****
Green Time:	0.0	35.3	35.3	57.1	92.4	0.0	0.0	0.0	0.0	28.6	0.0	28.6
Volume/Cap:	0.00	0.97	0.97	0.17	0.60	0.00	0.00	0.00	0.00	0.57	0.00	0.97
Uniform Del:	0.0	46.9	46.9	22.0	9.5	0.0	0.0	0.0	0.0	45.2	0.0	50.3
IncremntDel:	0.0	22.1	22.1	0.1	0.4	0.0	0.0	0.0	0.0	0.8	0.0	31.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	69.0	69.0	22.1	9.9	0.0	0.0	0.0	0.0	46.0	0.0	82.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	69.0	69.0	22.1	9.9	0.0	0.0	0.0	0.0	46.0	0.0	82.1
LOS by Move:	A	E	E	C+	A	A	A	A	A	D	A	F
HCM2kAvgQ:	0	23	23	3	16	0	0	0	0	8	0	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



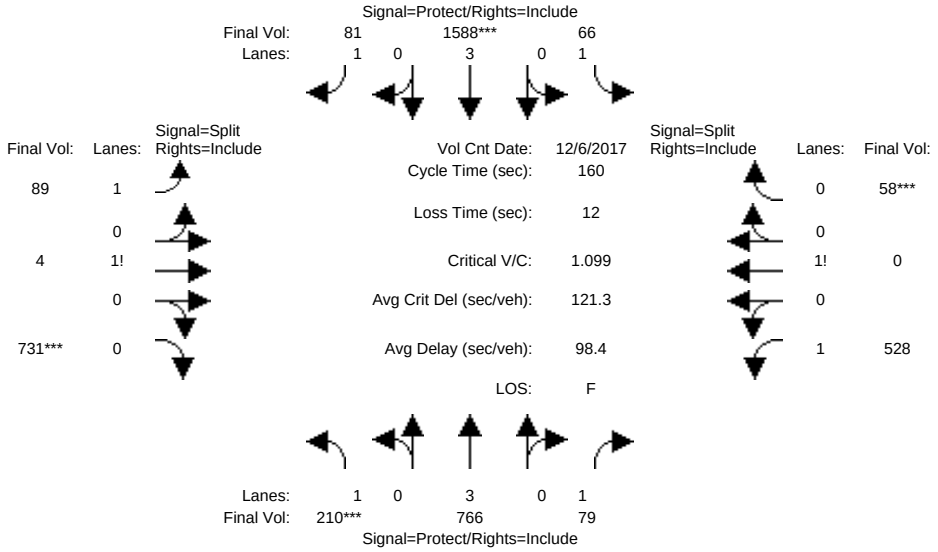
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	249	1464	474	49	540	239	127	0	184	134	2	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	1464	474	49	540	239	127	0	184	134	2	99
Added Vol:	5	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	254	1474	474	49	580	239	127	0	184	134	2	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	254	1474	474	49	580	239	127	0	184	134	2	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	254	1474	474	49	580	239	127	0	184	134	2	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	254	1474	474	49	580	239	127	0	184	134	2	99
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.26	0.00	0.74	1.40	0.01	0.59
Final Sat.:	1750	5700	1750	1750	5700	1750	2208	0	1328	2448	21	1031
Capacity Analysis Module:												
Vol/Sat:	0.15	0.26	0.27	0.03	0.10	0.14	0.06	0.00	0.14	0.05	0.10	0.10
Crit Moves:			****	****					****		****	
Green Time:	42.7	75.2	75.2	7.8	40.2	40.2	38.4	0.0	38.4	26.6	26.6	26.6
Volume/Cap:	0.54	0.55	0.58	0.58	0.40	0.54	0.24	0.00	0.58	0.33	0.58	0.58
Uniform Del:	50.3	30.3	30.9	74.5	49.9	51.9	49.0	0.0	53.6	58.8	61.5	61.5
IncremntDel:	1.3	0.2	1.0	9.4	0.2	1.4	0.1	0.0	1.5	0.3	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.6	30.6	31.9	83.9	50.1	53.3	49.1	0.0	55.2	59.1	63.5	63.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	30.6	31.9	83.9	50.1	53.3	49.1	0.0	55.2	59.1	63.5	63.5
LOS by Move:	D-	C	C	F	D	D-	D	A	E+	E+	E	E
HCM2kAvgQ:	11	16	17	3	8	11	4	0	12	5	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #97: Wolfe Rd & Central Expwy Ramps



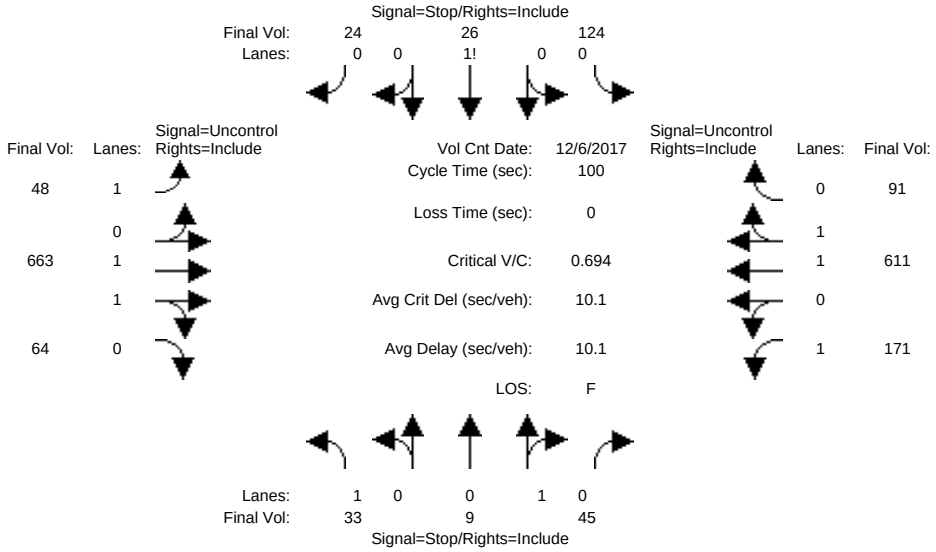
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	179	701	79	66	1583	81	89	4	731	528	0	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	701	79	66	1583	81	89	4	731	528	0	58
Added Vol:	31	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	766	79	66	1588	81	89	4	731	528	0	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	766	79	66	1588	81	89	4	731	528	0	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	766	79	66	1588	81	89	4	731	528	0	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	766	79	66	1588	81	89	4	731	528	0	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.06	0.01	0.93	1.82	0.00	0.18
Final Sat.:	1750	5700	1750	1750	5700	1750	1853	9	1685	3185	0	315
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.05	0.04	0.28	0.05	0.05	0.43	0.43	0.17	0.00	0.18
Crit Moves:	****				****				****			****
Green Time:	17.5	43.8	43.8	14.3	40.6	40.6	63.2	63.2	63.2	26.8	0.0	26.8
Volume/Cap:	1.10	0.49	0.16	0.42	1.10	0.18	0.12	1.10	1.10	0.99	0.00	1.10
Uniform Del:	71.3	48.8	44.2	69.0	59.7	46.7	30.8	48.4	48.4	66.5	0.0	66.6
IncremntDel:	94.0	0.2	0.2	1.9	55.5	0.2	0.0	63.2	63.2	34.3	0.0	68.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	165.3	49.0	44.4	70.8	115	46.9	30.8	112	111.6	100.8	0.0	135.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.3	49.0	44.4	70.8	115	46.9	30.8	112	111.6	100.8	0.0	135.3
LOS by Move:	F	D	D	E	F	D	C	F	F	F	A	F
HCM2kAvgQ:	15	10	3	3	33	3	3	52	52	20	0	24

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	96	0	24	48	595	0	0	607	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	96	0	24	48	595	0	0	607	90
Added Vol:	33	9	46	28	26	0	0	68	64	171	4	1
Volume Adju:	0	0	-1	0	0	0	0	0	0	0	0	0
Initial Fut:	33	9	45	124	26	24	48	663	64	171	611	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	9	45	124	26	24	48	663	64	171	611	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	33	9	45	124	26	24	48	663	64	171	611	91
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1452	1835	364	1431	1822	351	702	xxxx	xxxxx	727	xxxx	xxxxx
Potent Cap.:	93	77	639	97	78	651	905	xxxx	xxxxx	886	xxxx	xxxxx
Move Cap.:	49	59	639	65	60	651	905	xxxx	xxxxx	886	xxxx	xxxxx
Total Cap:	193	175	xxxxx	179	160	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.17	0.05	0.07	0.69	0.16	0.04	0.05	xxxx	xxxx	0.19	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.7	xxxx	xxxxx
Control Del:	27.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	10.0	xxxx	xxxxx
LOS by Move:	D	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	443	xxxx	195	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	0.4	xxxxx	6.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	14.3	xxxxx	89.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	B	*	F	*	*	*	*	*	*	*
ApproachDel:		19.2			89.0		xxxxxx			xxxxxx		
ApproachLOS:		C			F		*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	33	9	45	124	26	24	48	663	64	171	611	91
ApproachDel:	19.2			89.0			xxxxxx			xxxxxx		

Approach[northbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=87]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1909]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.3]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=174]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1909]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	33	9	45	124	26	24	48	663	64	171	611	91

Major Street Volume: 1648
Minor Approach Volume: 174
Minor Approach Volume Threshold: 113

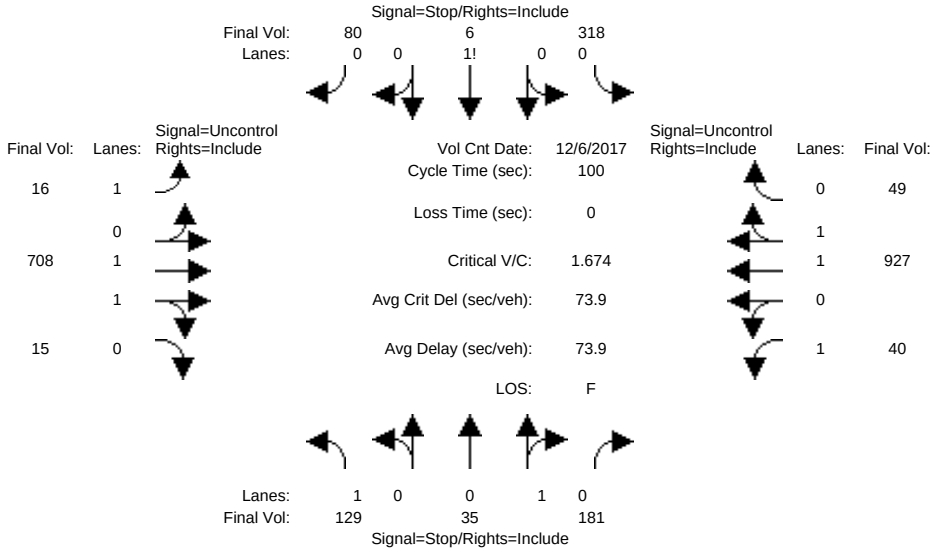
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	0	0	0	318	0	80	16	708	0	0	823	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	318	0	80	16	708	0	0	823	21
Added Vol:	129	35	181	0	6	0	0	0	15	40	104	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	35	181	318	6	80	16	708	15	40	927	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	35	181	318	6	80	16	708	15	40	927	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	129	35	181	318	6	80	16	708	15	40	927	49
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1294	1804	362	1435	1787	488	976	xxxx	xxxxx	723	xxxx	xxxxx
Potent Cap.:	122	80	641	96	82	531	715	xxxx	xxxxx	889	xxxx	xxxxx
Move Cap.:	93	75	641	42	77	531	715	xxxx	xxxxx	889	xxxx	xxxxx
Total Cap:	265	227	xxxxx	190	232	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.49	0.15	0.28	1.67	0.03	0.15	0.02	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	2.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	30.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	D	*	*	*	*	*	B	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	495	xxxx	218	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	2.2	xxxxx	28.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	17.8	xxxxx	437	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	C	*	F	*	*	*	*	*	*	*
ApproachDel:		22.7			437.2			xxxxxx			xxxxxx	
ApproachLOS:		C			F			*			*	

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	129	35	181	318	6	80	16	708	15	40	927	49
ApproachDel:	22.7			437.2			xxxxxx			xxxxxx		

Approach[northbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=345]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2504]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=49.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=404]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2504]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Initial Vol:	129	35	181	318	6	80	16	708	15	40	927	49

Major Street Volume: 1755
Minor Approach Volume: 404
Minor Approach Volume Threshold: 91 [less than minimum of 100]

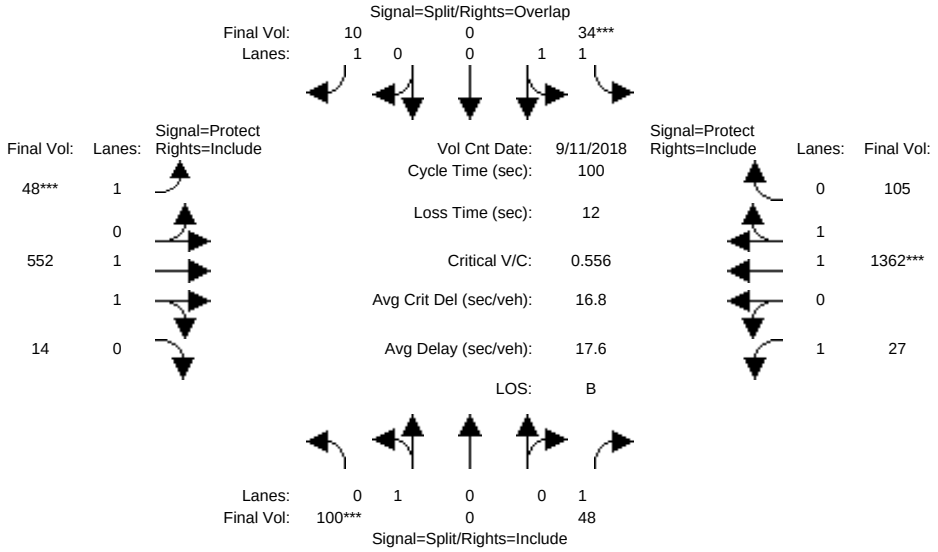
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



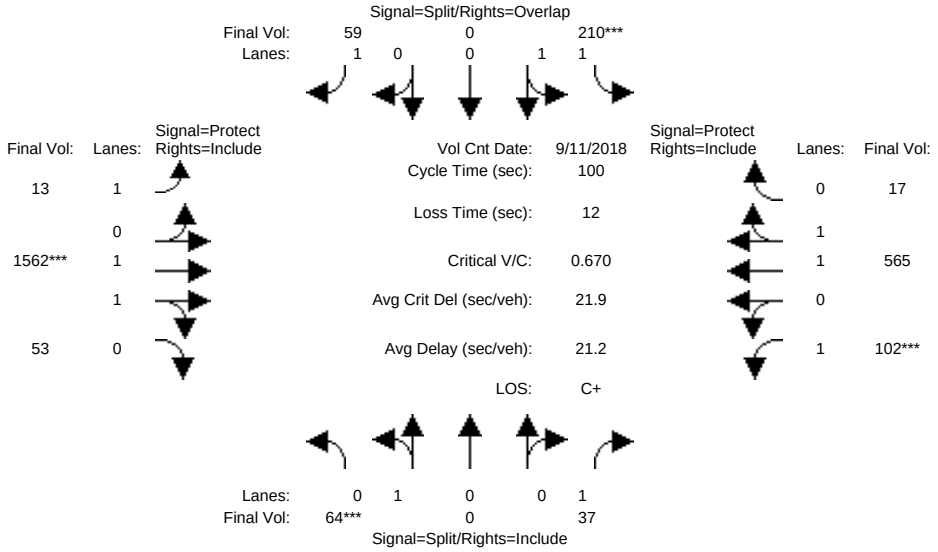
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	100	0	48	34	0	10	48	501	14	27	1009	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	0	48	34	0	10	48	501	14	27	1009	105
Added Vol:	0	0	0	0	0	0	0	51	0	0	353	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	0	48	34	0	10	48	552	14	27	1362	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	0	48	34	0	10	48	552	14	27	1362	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	48	34	0	10	48	552	14	27	1362	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	0	48	34	0	10	48	552	14	27	1362	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.95	0.05	1.00	1.85	0.15
Final Sat.:	1800	0	1750	3550	0	1750	1750	3608	92	1750	3435	265
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.03	0.01	0.00	0.01	0.03	0.15	0.15	0.02	0.40	0.40
Crit Moves:	****			****			****				****	
Green Time:	10.0	0.0	10.0	10.0	0.0	17.0	7.0	46.7	46.7	21.3	61.0	61.0
Volume/Cap:	0.56	0.00	0.27	0.10	0.00	0.03	0.39	0.33	0.33	0.07	0.65	0.65
Uniform Del:	42.9	0.0	41.6	40.9	0.0	34.6	44.5	16.8	16.8	31.4	12.6	12.6
IncremntDel:	3.8	0.0	0.9	0.1	0.0	0.0	2.1	0.1	0.1	0.1	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.7	0.0	42.5	41.0	0.0	34.7	46.5	16.9	16.9	31.5	13.3	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	0.0	42.5	41.0	0.0	34.7	46.5	16.9	16.9	31.5	13.3	13.3
LOS by Move:	D	A	D	D	A	C-	D	B	B	C	B	B
HCM2kAvgQ:	4	0	2	1	0	0	2	5	5	1	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #99: Semiconductor Dr & Kifer Rd



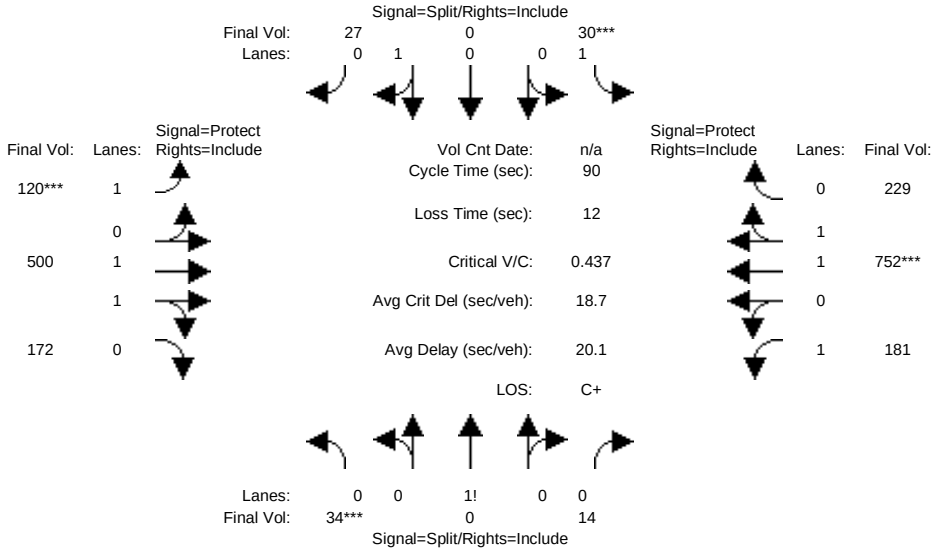
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	64	0	37	210	0	59	13	1235	53	102	524	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	0	37	210	0	59	13	1235	53	102	524	17
Added Vol:	0	0	0	0	0	0	0	327	0	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	0	37	210	0	59	13	1562	53	102	565	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	0	37	210	0	59	13	1562	53	102	565	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	0	37	210	0	59	13	1562	53	102	565	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	0	37	210	0	59	13	1562	53	102	565	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.97	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.93	0.07	1.00	1.94	0.06
Final Sat.:	1800	0	1750	3550	0	1750	1750	3578	121	1750	3592	108
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.06	0.00	0.03	0.01	0.44	0.44	0.06	0.16	0.16
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	10.0	10.0	0.0	30.9	20.9	60.0	60.0	8.0	47.1	47.1
Volume/Cap:	0.36	0.00	0.21	0.59	0.00	0.11	0.04	0.73	0.73	0.73	0.33	0.33
Uniform Del:	42.0	0.0	41.4	43.0	0.0	24.7	31.5	14.2	14.2	44.9	16.6	16.6
IncremntDel:	1.2	0.0	0.6	2.7	0.0	0.1	0.0	1.2	1.2	17.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	0.0	42.0	45.7	0.0	24.8	31.5	15.4	15.4	62.3	16.7	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	0.0	42.0	45.7	0.0	24.8	31.5	15.4	15.4	62.3	16.7	16.7
LOS by Move:	D	A	D	D	A	C	C	B	B	E	B	B
HCM2kAvgQ:	2	0	1	4	0	1	0	18	18	3	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



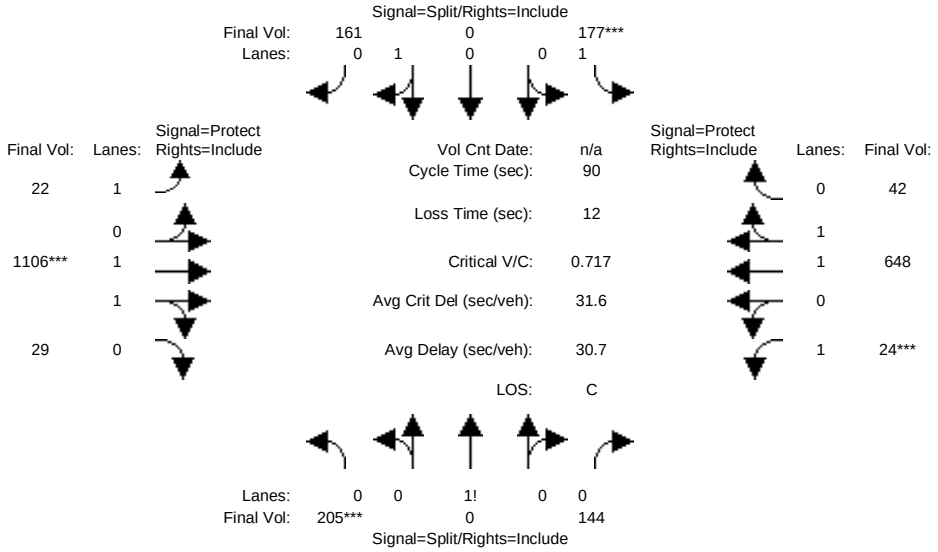
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	0	14	0	0	0	0	478	172	181	628	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	14	0	0	0	0	478	172	181	628	0
Added Vol:	0	0	0	30	0	27	120	22	0	0	124	229
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	14	30	0	27	120	500	172	181	752	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	14	30	0	27	120	500	172	181	752	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	14	30	0	27	120	500	172	181	752	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	14	30	0	27	120	500	172	181	752	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.71	0.00	0.29	1.00	0.00	1.00	1.00	1.47	0.53	1.00	1.52	0.48
Final Sat.:	1240	0	510	1750	0	1800	1750	2752	947	1750	2836	864
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.02	0.00	0.02	0.07	0.18	0.18	0.10	0.27	0.27
Crit Moves:	****			****			****				****	
Green Time:	10.0	0.0	10.0	10.0	0.0	10.0	11.9	37.0	37.0	21.0	46.1	46.1
Volume/Cap:	0.25	0.00	0.25	0.15	0.00	0.14	0.52	0.44	0.44	0.44	0.52	0.52
Uniform Del:	36.6	0.0	36.6	36.2	0.0	36.1	36.4	19.1	19.1	29.5	14.6	14.6
IncremntDel:	0.7	0.0	0.7	0.4	0.0	0.3	2.1	0.2	0.2	0.8	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	0.0	37.2	36.5	0.0	36.4	38.4	19.3	19.3	30.2	14.8	14.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	0.0	37.2	36.5	0.0	36.4	38.4	19.3	19.3	30.2	14.8	14.8
LOS by Move:	D+	A	D+	D+	A	D+	D+	B-	B-	C	B	B
HCM2kAvgQ:	2	0	2	1	0	1	3	6	6	4	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



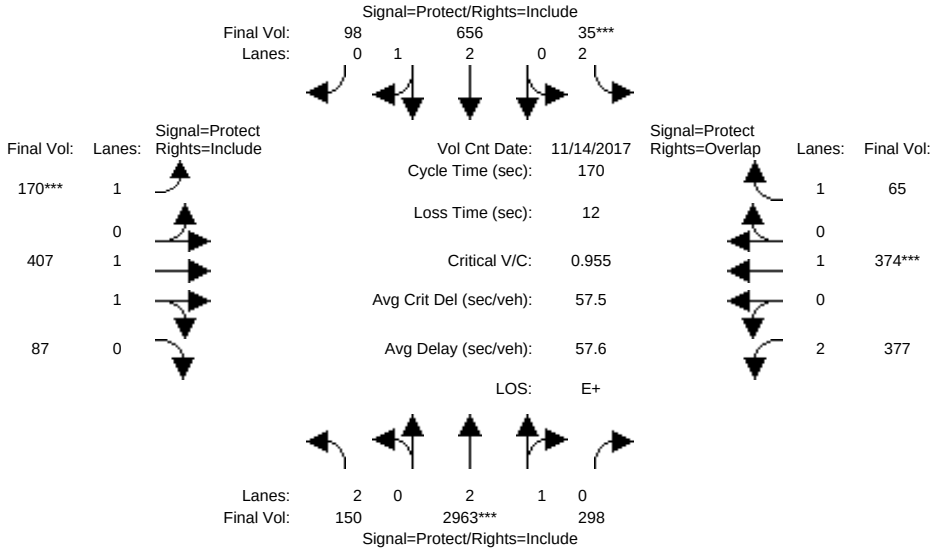
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	0	144	0	0	0	0	956	29	24	649	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	0	144	0	0	0	0	956	29	24	649	0
Added Vol:	0	0	0	177	0	161	22	150	0	0	-1	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	0	144	177	0	161	22	1106	29	24	648	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	0	144	177	0	161	22	1106	29	24	648	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	0	144	177	0	161	22	1106	29	24	648	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	0	144	177	0	161	22	1106	29	24	648	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.59	0.00	0.41	1.00	0.00	1.00	1.00	1.95	0.05	1.00	1.87	0.13
Final Sat.:	1028	0	722	1750	0	1800	1750	3605	95	1750	3475	225
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.20	0.10	0.00	0.09	0.01	0.31	0.31	0.01	0.19	0.19
Crit Moves:	****			****				****		****		
Green Time:	23.3	0.0	23.3	11.8	0.0	11.8	12.6	35.9	35.9	7.0	30.2	30.2
Volume/Cap:	0.77	0.00	0.77	0.77	0.00	0.68	0.09	0.77	0.77	0.18	0.55	0.55
Uniform Del:	30.9	0.0	30.9	37.8	0.0	37.3	33.7	23.5	23.5	38.8	24.4	24.4
IncremntDel:	7.9	0.0	7.9	14.6	0.0	7.8	0.2	2.5	2.5	0.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.7	0.0	38.7	52.4	0.0	45.1	33.9	26.0	26.0	39.4	24.9	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	0.0	38.7	52.4	0.0	45.1	33.9	26.0	26.0	39.4	24.9	24.9
LOS by Move:	D+	A	D+	D-	A	D	C-	C	C	D	C	C
HCM2kAvgQ:	12	0	12	7	0	6	1	13	13	1	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



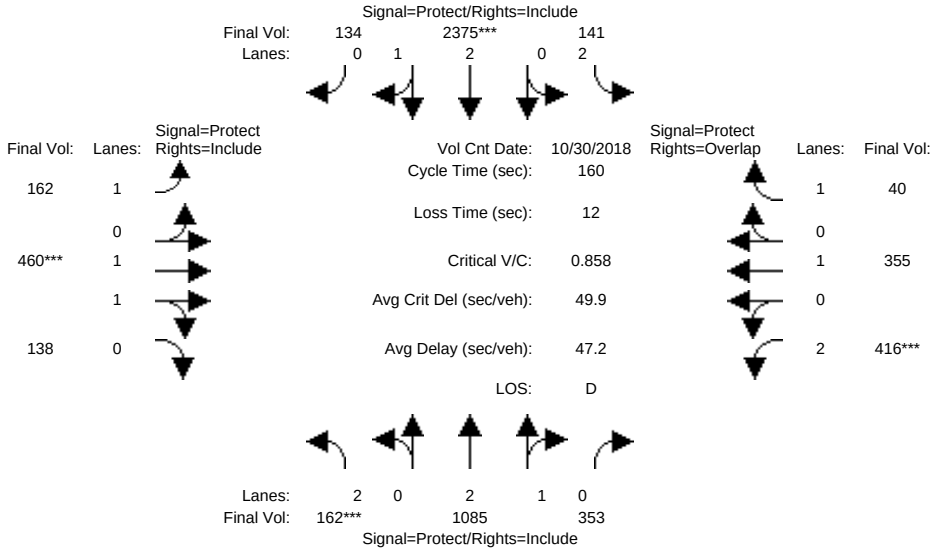
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	150	2963	276	35	656	98	170	407	87	373	374	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	2963	276	35	656	98	170	407	87	373	374	65
Added Vol:	0	0	22	0	0	0	0	0	0	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2963	298	35	656	98	170	407	87	377	374	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	2963	298	35	656	98	170	407	87	377	374	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	2963	298	35	656	98	170	407	87	377	374	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	2963	298	35	656	98	170	407	87	377	374	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.60	0.40	1.00	1.64	0.36	2.00	1.00	1.00
Final Sat.:	3150	5088	512	3150	4871	728	1750	3048	652	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.58	0.58	0.01	0.13	0.13	0.10	0.13	0.13	0.12	0.20	0.04
Crit Moves:		****		****			****				****	
Green Time:	28.0	100	100.3	7.0	79.3	79.3	16.7	26.7	26.7	23.9	33.9	40.9
Volume/Cap:	0.29	0.99	0.99	0.27	0.29	0.29	0.99	0.85	0.85	0.85	0.99	0.15
Uniform Del:	62.2	34.2	34.2	79.0	28.0	28.0	76.5	69.7	69.7	71.3	67.8	50.9
IncremntDel:	0.3	12.7	12.7	1.1	0.1	0.1	64.4	11.4	11.4	14.4	42.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	62.5	46.8	46.8	80.1	28.0	28.0	141.0	81.1	81.1	85.7	110	51.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.5	46.8	46.8	80.1	28.0	28.0	141.0	81.1	81.1	85.7	110	51.1
LOS by Move:	E	D	D	F	C	C	F	F	F	F	F	D-
HCM2kAvgQ:	4	63	63	1	8	8	13	15	15	12	21	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



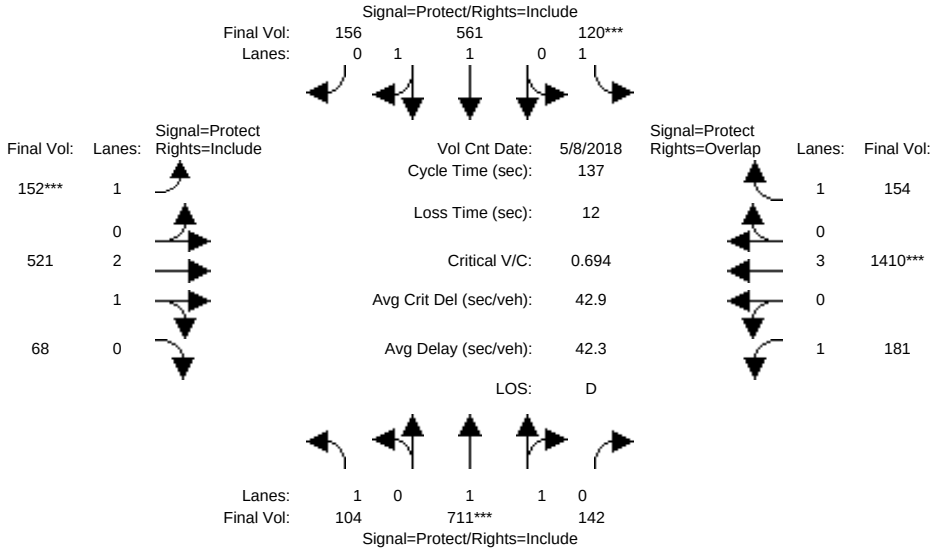
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	162	1085	351	141	2375	134	162	460	138	391	355	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	1085	351	141	2375	134	162	460	138	391	355	40
Added Vol:	0	0	2	0	0	0	0	0	0	25	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	1085	353	141	2375	134	162	460	138	416	355	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	1085	353	141	2375	134	162	460	138	416	355	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	1085	353	141	2375	134	162	460	138	416	355	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	1085	353	141	2375	134	162	460	138	416	355	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.24	0.76	2.00	2.83	0.17	1.00	1.53	0.47	2.00	1.00	1.00
Final Sat.:	3150	4224	1374	3150	5301	299	1750	2846	854	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.26	0.04	0.45	0.45	0.09	0.16	0.16	0.13	0.19	0.02
Crit Moves:	****				****			****			****	
Green Time:	9.6	79.4	79.4	13.8	83.6	83.6	18.2	30.2	30.2	24.6	36.6	50.5
Volume/Cap:	0.86	0.52	0.52	0.52	0.86	0.86	0.82	0.86	0.86	0.86	0.82	0.07
Uniform Del:	74.5	27.3	27.3	69.9	33.0	33.0	69.3	62.8	62.8	66.0	58.5	38.4
IncremntDel:	30.1	0.2	0.2	1.8	2.7	2.7	22.3	10.3	10.3	14.1	11.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	104.6	27.5	27.5	71.6	35.8	35.8	91.6	73.2	73.2	80.1	69.8	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	104.6	27.5	27.5	71.6	35.8	35.8	91.6	73.2	73.2	80.1	69.8	38.4
LOS by Move:	F	C	C	E	D+	D+	F	E	E	F	E	D+
HCM2kAvgQ:	5	16	16	4	37	37	10	17	17	13	17	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



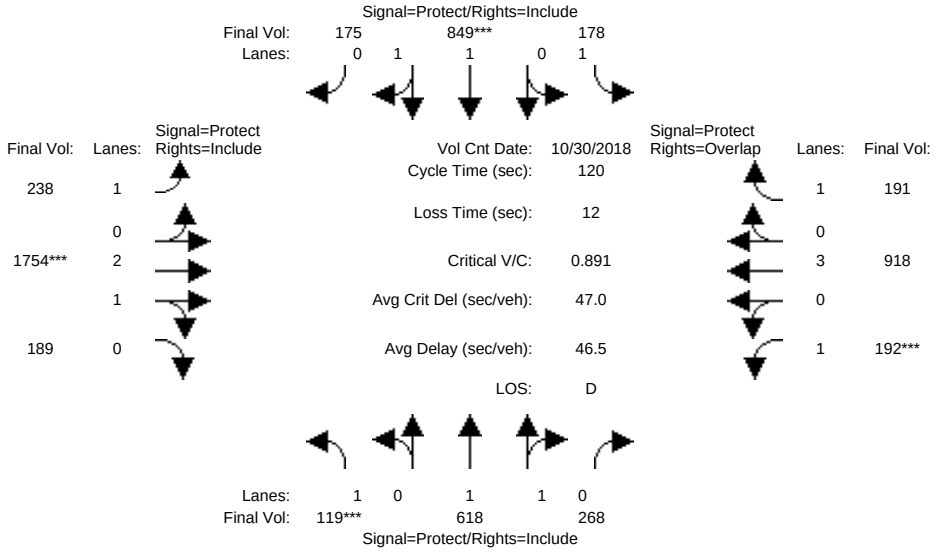
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	104	689	142	120	557	156	152	521	68	181	1410	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	689	142	120	557	156	152	521	68	181	1410	154
Added Vol:	0	22	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	711	142	120	561	156	152	521	68	181	1410	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	711	142	120	561	156	152	521	68	181	1410	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	711	142	120	561	156	152	521	68	181	1410	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	711	142	120	561	156	152	521	68	181	1410	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.66	0.34	1.00	1.55	0.45	1.00	2.64	0.36	1.00	3.00	1.00
Final Sat.:	1750	3084	616	1750	2894	805	1750	4953	646	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.23	0.07	0.19	0.19	0.09	0.11	0.11	0.10	0.25	0.09
Crit Moves:		****		****			****				****	
Green Time:	13.9	45.5	45.5	13.5	45.2	45.2	17.1	33.3	33.3	32.7	48.8	62.4
Volume/Cap:	0.59	0.69	0.69	0.69	0.59	0.59	0.69	0.43	0.43	0.43	0.69	0.19
Uniform Del:	58.8	39.7	39.7	59.7	38.2	38.2	57.4	43.9	43.9	44.3	37.7	22.3
IncremntDel:	5.1	1.7	1.7	11.6	0.8	0.8	9.3	0.2	0.2	0.7	1.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	63.9	41.5	41.5	71.3	38.9	38.9	66.7	44.1	44.1	45.0	38.8	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.9	41.5	41.5	71.3	38.9	38.9	66.7	44.1	44.1	45.0	38.8	22.4
LOS by Move:	E	D	D	E	D+	D+	E	D	D	D	D+	C+
HCM2kAvgQ:	4	15	15	5	13	13	7	7	7	7	16	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



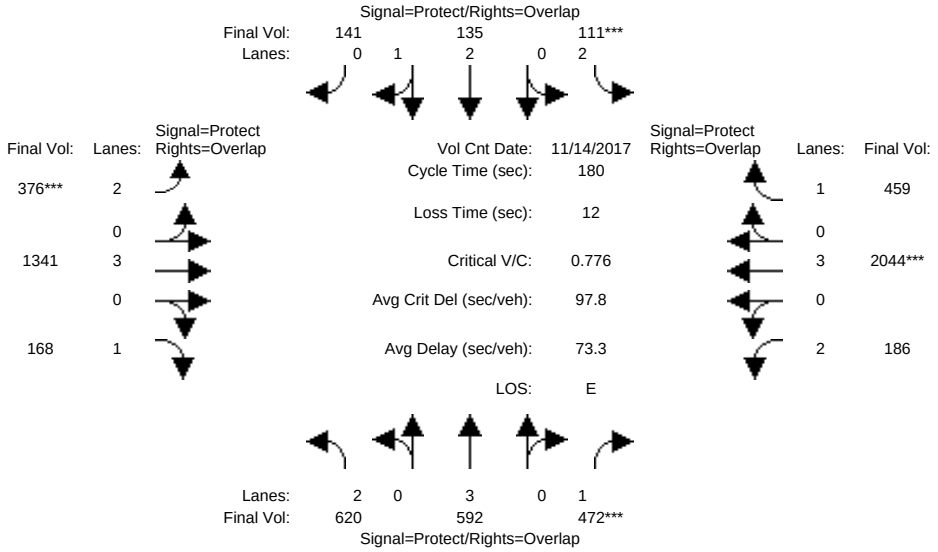
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	119	616	268	178	824	175	238	1754	189	192	918	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	616	268	178	824	175	238	1754	189	192	918	191
Added Vol:	0	2	0	0	25	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	618	268	178	849	175	238	1754	189	192	918	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	618	268	178	849	175	238	1754	189	192	918	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	618	268	178	849	175	238	1754	189	192	918	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	618	268	178	849	175	238	1754	189	192	918	191
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.38	0.62	1.00	1.65	0.35	1.00	2.70	0.30	1.00	3.00	1.00
Final Sat.:	1750	2580	1119	1750	3067	632	1750	5055	545	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.24	0.10	0.28	0.28	0.14	0.35	0.35	0.11	0.16	0.11
Crit Moves:	****				****			****			****	
Green Time:	9.2	32.6	32.6	13.8	37.3	37.3	28.2	46.8	46.8	14.8	33.4	47.2
Volume/Cap:	0.89	0.88	0.88	0.88	0.89	0.89	0.58	0.89	0.89	0.89	0.58	0.28
Uniform Del:	54.9	41.8	41.8	52.3	39.4	39.4	40.7	34.2	34.2	51.8	37.3	24.8
IncremntDel:	46.5	9.2	9.2	33.1	8.9	8.9	2.1	5.0	5.0	33.4	0.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	101.4	51.0	51.0	85.4	48.3	48.3	42.7	39.3	39.3	85.2	37.8	25.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	101.4	51.0	51.0	85.4	48.3	48.3	42.7	39.3	39.3	85.2	37.8	25.0
LOS by Move:	F	D-	D-	F	D	D	D	D	D	F	D+	C
HCM2kAvgQ:	5	17	17	8	19	19	8	25	25	9	10	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



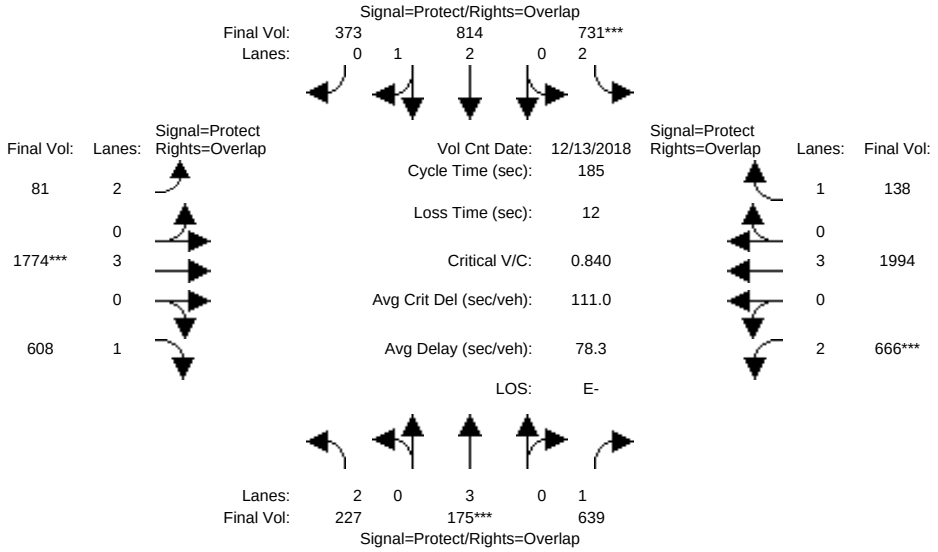
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	620	592	472	111	135	141	376	1287	168	186	2034	459
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	620	592	472	111	135	141	376	1287	168	186	2034	459
Added Vol:	0	0	0	0	0	0	0	54	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	620	592	472	111	135	141	376	1341	168	186	2044	459
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	620	592	472	111	135	141	376	1341	168	186	2044	459
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	620	592	472	111	135	141	376	1341	168	186	2044	459
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	620	592	472	111	135	141	376	1341	168	186	2044	459
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.10	0.27	0.04	0.04	0.08	0.12	0.24	0.10	0.06	0.36	0.26
Crit Moves:			****	****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.91	0.32	0.63	0.54	0.20	0.32	1.68	0.63	0.16	0.57	0.89	0.56
Uniform Del:	68.9	46.1	40.6	81.4	63.0	55.1	83.6	46.5	17.0	76.8	49.8	34.3
IncremntDel:	16.4	0.1	1.8	2.8	0.1	0.2	324.2	0.6	0.1	2.4	4.6	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.3	46.2	42.4	84.2	63.1	55.4	407.8	47.2	17.0	79.2	54.4	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.3	46.2	42.4	84.2	63.1	55.4	407.8	47.2	17.0	79.2	54.4	35.1
LOS by Move:	F	D	D	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	22	8	22	4	3	7	25	20	4	7	37	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #5320: CENTRAL EXPWY/MARY AVE



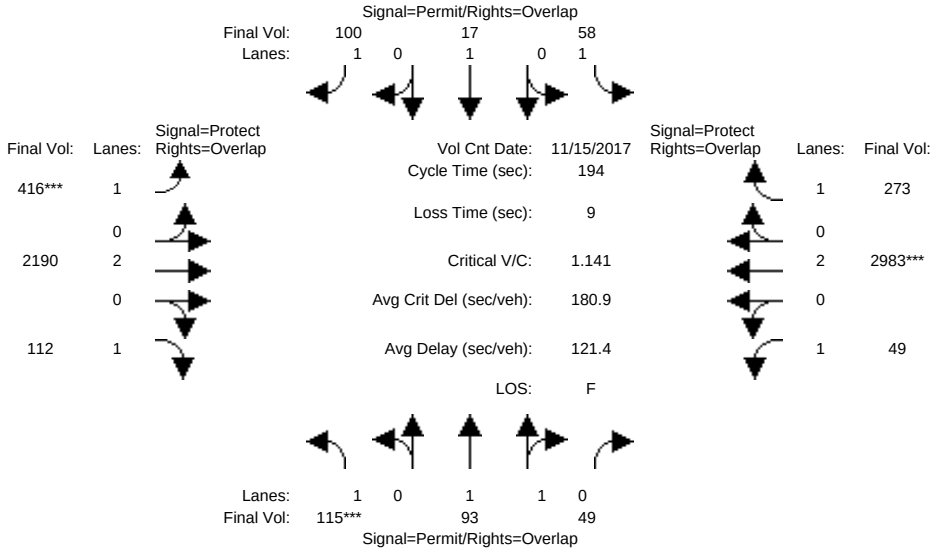
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	227	175	639	731	814	373	81	1768	608	666	1932	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	175	639	731	814	373	81	1768	608	666	1932	138
Added Vol:	0	0	0	0	0	0	0	6	0	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	227	175	639	731	814	373	81	1774	608	666	1994	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	175	639	731	814	373	81	1774	608	666	1994	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	175	639	731	814	373	81	1774	608	666	1994	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	227	175	639	731	814	373	81	1774	608	666	1994	138
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.02	0.98	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3838	1759	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.37	0.23	0.21	0.21	0.03	0.31	0.35	0.21	0.35	0.08
Crit Moves:		****		****				****		****		
Green Time:	18.6	37.0	80.0	39.7	58.1	67.2	9.1	53.3	71.9	43.0	87.2	126.9
Volume/Cap:	0.72	0.15	0.84	1.08	0.68	0.58	0.52	1.08	0.89	0.91	0.74	0.11
Uniform Del:	80.6	61.1	46.9	72.6	55.2	47.6	85.8	65.9	53.0	69.1	39.8	9.9
IncremntDel:	7.6	0.1	8.6	58.5	1.1	0.4	3.2	47.5	14.3	15.4	1.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.13	1.02	1.21	1.61
Delay/Veh:	88.3	61.1	55.6	131.1	56.3	48.0	89.0	117	74.0	86.1	49.1	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.3	61.1	55.6	131.1	56.3	48.0	89.0	117	74.0	86.1	49.1	16.0
LOS by Move:	F	E	E+	F	E+	D	F	F	E	F	D	B
HCM2kAvgQ:	8	3	36	32	20	18	3	42	38	25	33	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



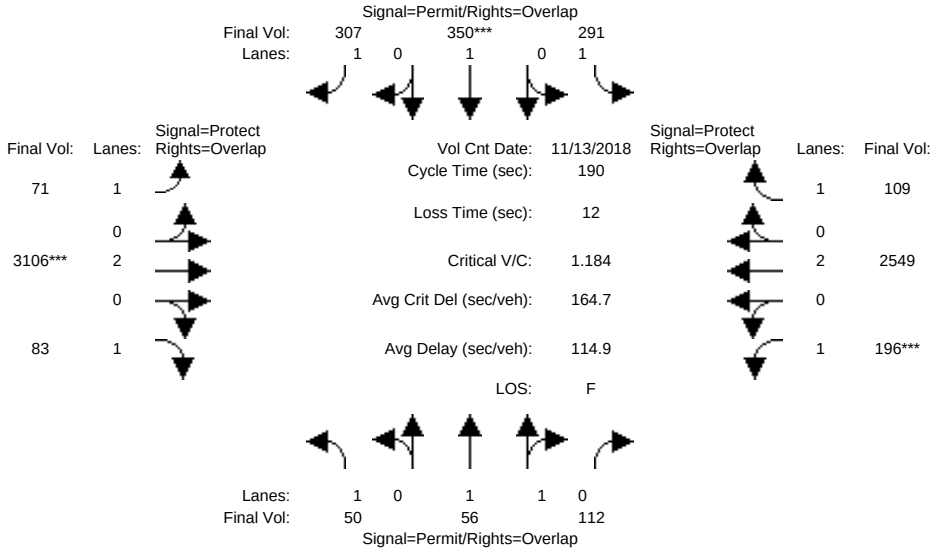
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	115	93	49	58	17	100	416	2180	112	49	2929	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	93	49	58	17	100	416	2180	112	49	2929	273
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	93	49	58	17	100	416	2190	112	49	2983	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	93	49	58	17	100	416	2190	112	49	2983	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	93	49	58	17	100	416	2190	112	49	2983	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	93	49	58	17	100	416	2190	112	49	2983	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	2422	1276	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.04	0.03	0.01	0.06	0.24	0.58	0.06	0.03	0.79	0.16
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.54	0.31	0.20	0.27	0.07	0.19	1.34	0.81	0.09	0.38	1.29	0.26
Uniform Del:	80.0	77.7	65.3	77.1	75.2	50.3	79.8	19.2	8.7	85.7	38.1	17.7
IncremntDel:	2.7	0.4	0.1	0.7	0.1	0.2	171.9	2.0	0.0	1.9	135	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	52.6	22.9	87.6	173	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	52.6	22.9	87.6	173	17.9
LOS by Move:	F	E-	E	E-	E-	D	F	D-	C+	F	F	B
HCM2kAvgQ:	7	4	3	3	1	5	42	60	5	3	123	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



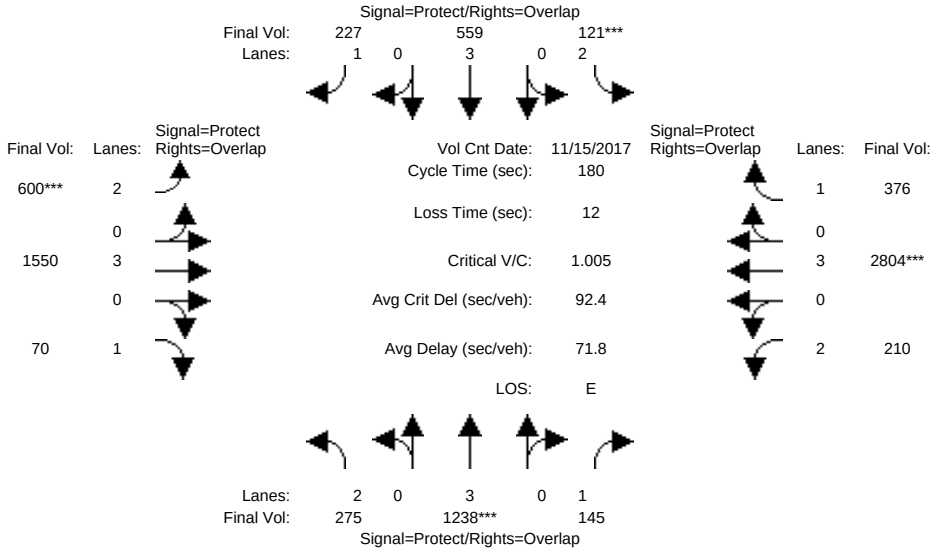
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	50	56	112	291	350	307	71	3044	83	196	2543	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	56	112	291	350	307	71	3044	83	196	2543	109
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	56	112	291	350	307	71	3106	83	196	2549	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	56	112	291	350	307	71	3106	83	196	2549	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	56	112	291	350	307	71	3106	83	196	2549	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	56	112	291	350	307	71	3106	83	196	2549	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.17	0.18	0.18	0.04	0.82	0.05	0.11	0.67	0.06
Crit Moves:					****			****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.15	0.15	0.23	0.86	0.95	0.68	0.63	1.24	0.07	1.26	0.98	0.09
Uniform Del:	67.7	67.8	55.6	78.9	80.6	67.5	92.2	34.5	12.4	92.0	30.8	10.8
IncremntDel:	0.2	0.1	0.2	19.6	35.0	4.2	11.0	112	0.0	157.1	13.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	165	18.9	249.1	62.9	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	165	18.9	249.1	62.9	17.3
LOS by Move:	E	E	E+	F	F	E	F	F	B-	F	E	B
HCM2kAvgQ:	3	3	5	20	23	18	6	129	3	19	81	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



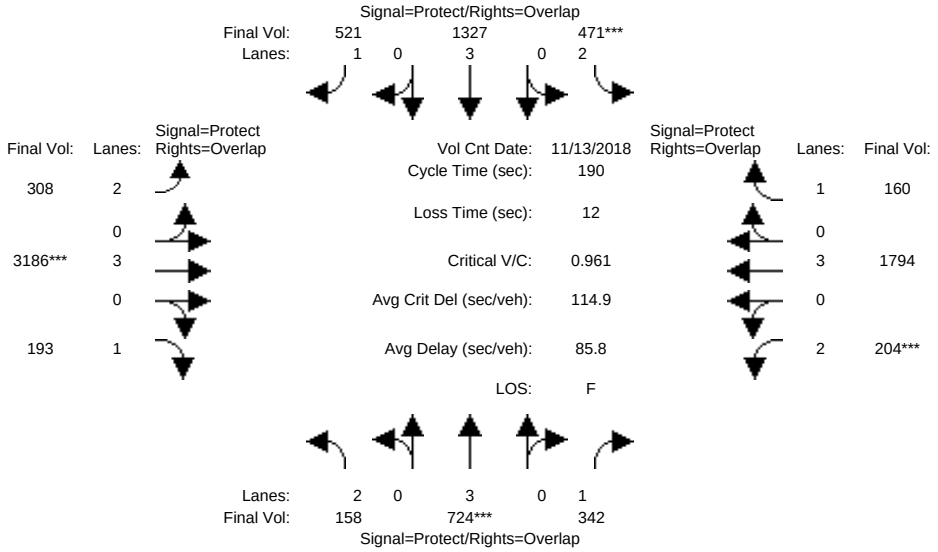
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	1238	145	121	559	227	600	1550	70	210	2804	376
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	1238	145	121	559	227	600	1550	70	210	2804	376
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	1238	145	121	559	227	600	1550	70	210	2804	376
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	1238	145	121	559	227	600	1550	70	210	2804	376
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.22	0.08	0.04	0.10	0.13	0.19	0.27	0.04	0.07	0.49	0.21
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.80	0.97	0.26	0.50	0.51	0.39	1.33	0.50	0.06	0.73	1.00	0.38
Uniform Del:	78.2	69.4	46.1	79.7	65.1	45.7	77.1	26.0	11.5	79.7	45.8	21.4
IncremntDel:	12.3	18.9	0.3	1.6	0.4	0.4	162.8	0.1	0.0	9.3	17.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	90.5	88.3	46.4	81.3	65.5	46.1	239.9	26.2	11.5	88.9	63.2	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.5	88.3	46.4	81.3	65.5	46.1	239.9	26.2	11.5	88.9	63.2	21.6
LOS by Move:	F	F	D	F	E	D	F	C	B+	F	E	C+
HCM2kAvgQ:	9	23	6	4	9	10	30	17	1	8	58	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



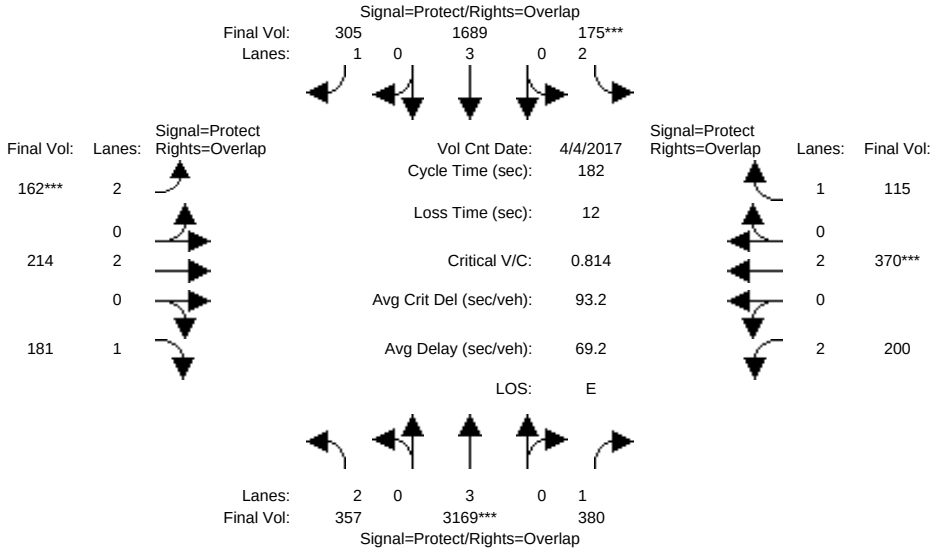
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	724	342	471	1327	521	308	3186	193	204	1794	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	724	342	471	1327	521	308	3186	193	204	1794	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	724	342	471	1327	521	308	3186	193	204	1794	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	724	342	471	1327	521	308	3186	193	204	1794	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.20	0.15	0.23	0.30	0.10	0.56	0.11	0.06	0.31	0.09
Crit Moves:		****		****				****		****		
Green Time:	16.6	39.0	53.0	26.4	48.8	66.4	17.6	98.6	115.2	14.0	95.0	121.4
Volume/Cap:	0.58	0.62	0.70	1.08	0.91	0.85	1.05	1.08	0.18	0.88	0.63	0.14
Uniform Del:	83.3	68.7	61.4	81.8	68.4	57.2	86.2	45.7	16.6	87.2	34.7	13.6
IncremntDel:	3.0	1.0	4.5	65.2	8.4	11.0	67.7	41.7	0.1	29.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.72	2.03	1.00	0.77	0.47
Delay/Veh:	86.3	69.8	65.9	147.0	76.8	68.2	159.8	120	33.6	116.6	27.0	6.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.3	69.8	65.9	147.0	76.8	68.2	159.8	120	33.6	116.6	27.0	6.5
LOS by Move:	F	E	E	F	E-	E	F	F	C-	F	C	A
HCM2kAvgQ:	5	12	19	20	26	31	11	67	9	9	20	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



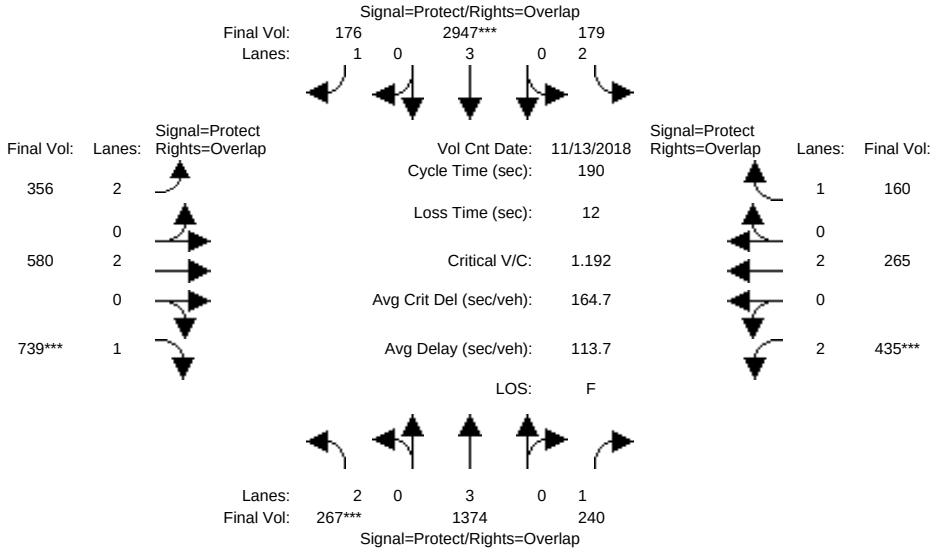
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	357	3618	380	175	1790	305	162	214	181	200	370	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	357	3618	380	175	1790	305	162	214	181	200	370	115
Added Vol:	0	24	0	0	151	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	357	3642	380	175	1941	305	162	214	181	200	370	115
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	357	3169	380	175	1689	305	162	214	181	200	370	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	357	3169	380	175	1689	305	162	214	181	200	370	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	357	3169	380	175	1689	305	162	214	181	200	370	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.56	0.22	0.06	0.30	0.17	0.05	0.06	0.11	0.06	0.10	0.07
Crit Moves:		****		****			****				****	
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.88	1.08	0.36	0.59	0.62	0.31	0.60	0.32	0.37	0.77	0.57	0.25
Uniform Del:	77.9	44.0	18.7	79.1	34.9	20.8	80.2	65.6	49.7	81.8	69.1	52.5
IncremntDel:	19.6	41.5	0.2	3.2	0.4	0.2	3.7	0.3	0.5	13.2	1.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	97.5	96.9	26.3	82.2	28.2	13.7	83.9	65.9	50.2	95.0	70.3	52.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.5	96.9	26.3	82.2	28.2	13.7	83.9	65.9	50.2	95.0	70.3	52.8
LOS by Move:	F	F	C	F	C	B	F	E	D	F	E	D-
HCM2kAvgQ:	14	70	15	5	18	6	5	5	8	7	9	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



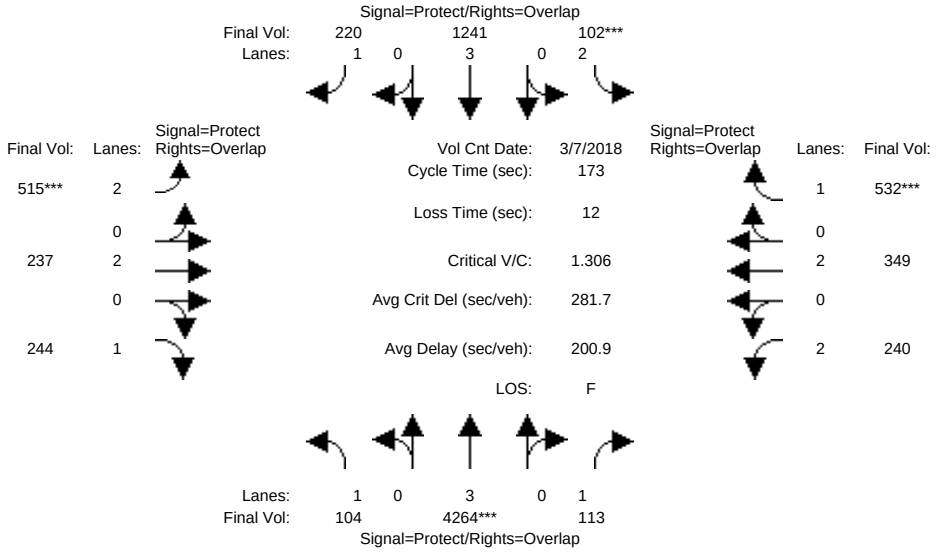
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	267	1894	240	179	3667	176	356	580	739	435	265	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	1894	240	179	3667	176	356	580	739	435	265	160
Added Vol:	0	156	0	0	17	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	2050	240	179	3684	176	356	580	739	435	265	160
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	267	1374	240	179	2947	176	356	580	739	435	265	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	1374	240	179	2947	176	356	580	739	435	265	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	267	1374	240	179	2947	176	356	580	739	435	265	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.14	0.06	0.52	0.10	0.11	0.15	0.46	0.14	0.07	0.09
Crit Moves:	****				****				****	****		
Green Time:	22.0	86.1	110.1	15.0	79.1	107.5	28.4	52.9	74.9	24.0	48.5	63.5
Volume/Cap:	0.73	0.53	0.24	0.72	1.24	0.18	0.76	0.55	1.17	1.09	0.27	0.27
Uniform Del:	81.2	37.4	19.5	85.4	55.4	19.9	77.5	58.4	57.6	83.0	56.6	46.3
IncremntDel:	7.4	0.2	0.1	9.7	113	0.1	6.9	0.6	93.0	72.6	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.6	31.4	12.2	95.2	176	26.7	84.4	59.0	150.6	155.6	56.8	46.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.6	31.4	12.2	95.2	176	26.7	84.4	59.0	150.6	155.6	56.8	46.6
LOS by Move:	F	C	B	F	F	C	F	E+	F	F	E+	D
HCM2kAvgQ:	10	15	4	6	76	7	12	14	61	19	6	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



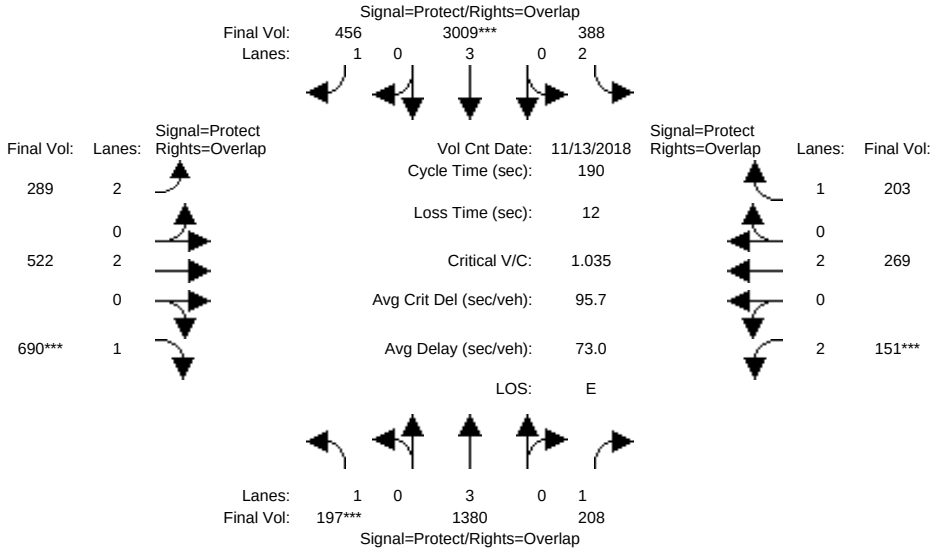
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	104	4804	113	102	1409	220	515	237	244	240	349	532
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	4804	113	102	1409	220	515	237	244	240	349	532
Added Vol:	0	97	0	0	18	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	4901	113	102	1427	220	515	237	244	240	349	532
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	4264	113	102	1241	220	515	237	244	240	349	532
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	4264	113	102	1241	220	515	237	244	240	349	532
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	4264	113	102	1241	220	515	237	244	240	349	532
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.75	0.06	0.03	0.22	0.13	0.16	0.06	0.14	0.08	0.09	0.30
Crit Moves:		****		****			****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	0.73	1.61	0.11	0.42	0.47	0.21	1.22	0.28	0.46	0.76	0.49	1.15
Uniform Del:	77.6	46.3	17.5	76.3	32.2	16.3	75.0	55.8	48.7	75.8	62.8	63.6
IncremntDel:	17.3	275	0.1	1.2	0.1	0.1	120.6	0.2	0.6	10.4	0.5	90.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	94.9	313	11.4	77.5	26.6	9.7	195.6	56.0	49.3	86.3	63.3	153.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	94.9	313	11.4	77.5	26.6	9.7	195.6	56.0	49.3	86.3	63.3	153.8
LOS by Move:	F	F	B+	E-	C	A	F	E+	D	F	E	F
HCM2kAvgQ:	6	136	2	3	12	3	24	5	11	8	8	40

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #5613: LAWRENCE EXPWY/REED AVE



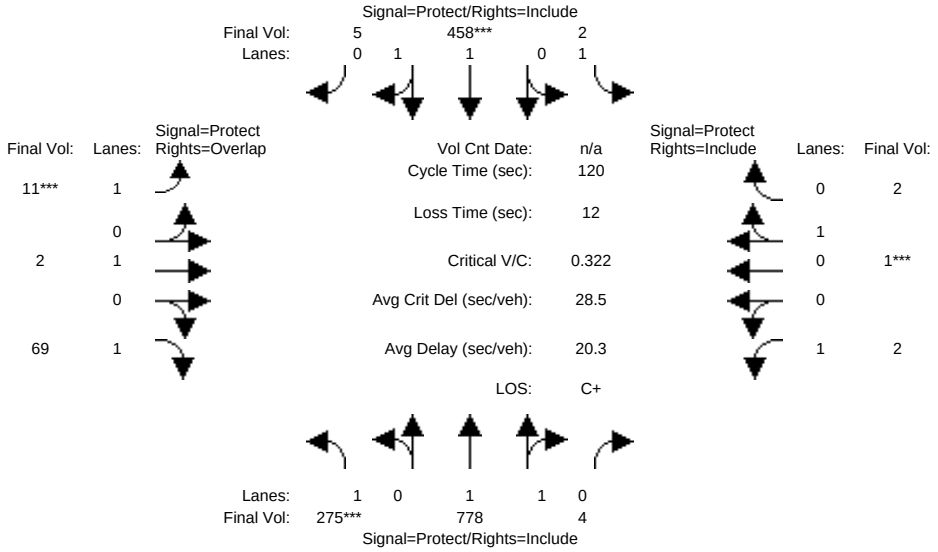
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	197	1693	208	388	4067	456	289	522	690	151	269	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	1693	208	388	4067	456	289	522	690	151	269	203
Added Vol:	0	11	0	0	112	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	1704	208	388	4179	456	289	522	690	151	269	203
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	197	1380	208	388	3009	456	289	522	690	151	269	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	1380	208	388	3009	456	289	522	690	151	269	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	197	1380	208	388	3009	456	289	522	690	151	269	203
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.24	0.12	0.12	0.53	0.26	0.09	0.14	0.39	0.05	0.07	0.12
Crit Moves:	****				****				****	****		
Green Time:	18.3	91.0	105.0	27.3	100	120.2	20.2	45.7	64.0	14.0	39.5	66.8
Volume/Cap:	1.17	0.51	0.22	0.86	1.00	0.41	0.86	0.57	1.17	0.65	0.34	0.33
Uniform Del:	85.9	34.0	21.6	79.5	45.0	17.3	83.5	63.5	63.0	85.6	64.2	45.2
IncremntDel:	122.7	0.2	0.1	15.0	17.1	0.3	19.7	0.9	93.9	6.4	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.68	1.00	1.27	1.46	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	208.5	27.3	14.7	94.4	74.5	25.6	103.2	64.4	156.9	92.0	64.4	45.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	208.5	27.3	14.7	94.4	74.5	25.6	103.2	64.4	156.9	92.0	64.4	45.5
LOS by Move:	F	C	B	F	E	C	F	E	F	F	E	D
HCM2kAvgQ:	17	14	4	12	57	18	11	13	57	5	6	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Intuitive)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



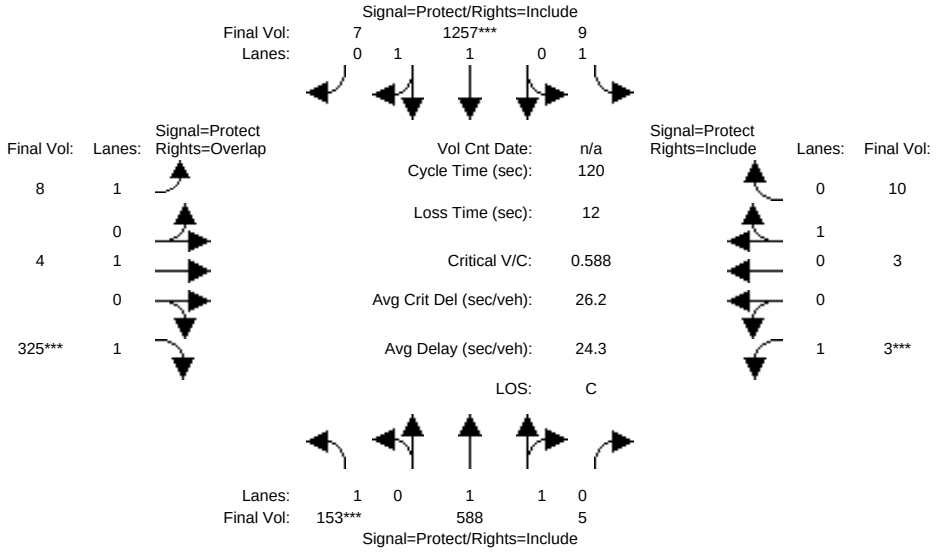
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	275	778	4	2	458	5	11	2	69	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	778	4	2	458	5	11	2	69	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	778	4	2	458	5	11	2	69	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	778	4	2	458	5	11	2	69	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	778	4	2	458	5	11	2	69	2	1	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	778	4	2	458	5	11	2	69	2	1	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.99	0.01	1.00	1.98	0.02	1.00	1.00	1.00	1.00	0.33	0.67
Final Sat.:	1750	3681	19	1750	3660	40	1750	1900	1750	1750	600	1200
Capacity Analysis Module:												
Vol/Sat:	0.16	0.21	0.21	0.00	0.13	0.13	0.01	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****				****		****				****	
Green Time:	50.7	71.3	71.3	19.7	40.3	40.3	7.0	10.0	60.7	7.0	10.0	10.0
Volume/Cap:	0.37	0.36	0.36	0.01	0.37	0.37	0.11	0.01	0.08	0.02	0.02	0.02
Uniform Del:	23.8	12.5	12.5	42.0	30.2	30.2	53.5	50.5	15.3	53.3	50.5	50.5
IncremntDel:	0.3	0.1	0.1	0.0	0.2	0.2	0.5	0.0	0.0	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.1	12.6	12.6	42.0	30.4	30.4	54.0	50.5	15.3	53.3	50.6	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.1	12.6	12.6	42.0	30.4	30.4	54.0	50.5	15.3	53.3	50.6	50.6
LOS by Move:	C	B	B	D	C	C	D-	D	B	D-	D	D
HCM2kAvgQ:	7	7	7	0	7	7	0	0	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Intuitive)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



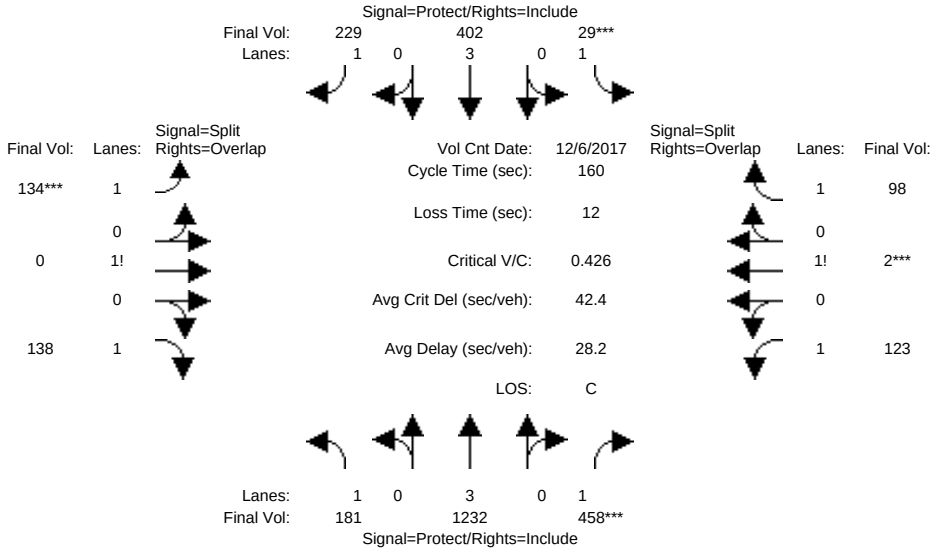
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	153	588	5	9	1257	7	8	4	325	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	588	5	9	1257	7	8	4	325	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	588	5	9	1257	7	8	4	325	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	588	5	9	1257	7	8	4	325	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	588	5	9	1257	7	8	4	325	3	3	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	153	588	5	9	1257	7	8	4	325	3	3	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.98	0.02	1.00	1.99	0.01	1.00	1.00	1.00	1.00	0.23	0.77
Final Sat.:	1750	3669	31	1750	3679	20	1750	1900	1750	1750	415	1385
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.16	0.01	0.34	0.34	0.00	0.00	0.19	0.00	0.01	0.01
Crit Moves:	****				****				****	****		
Green Time:	16.7	60.2	60.2	21.9	65.4	65.4	10.6	18.8	35.6	7.0	15.2	15.2
Volume/Cap:	0.63	0.32	0.32	0.03	0.63	0.63	0.05	0.01	0.63	0.03	0.06	0.06
Uniform Del:	48.7	17.7	17.7	40.3	18.8	18.8	50.1	42.7	36.5	53.3	46.1	46.1
IncremntDel:	5.1	0.1	0.1	0.0	0.6	0.6	0.1	0.0	2.4	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.8	17.8	17.8	40.3	19.5	19.5	50.2	42.8	38.9	53.4	46.2	46.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.8	17.8	17.8	40.3	19.5	19.5	50.2	42.8	38.9	53.4	46.2	46.2
LOS by Move:	D-	B	B	D	B-	B-	D	D	D+	D-	D	D
HCM2kAvgQ:	7	6	6	0	17	17	0	0	12	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Mitigated)

Intersection #97: Wolfe Rd & Central Expwy Ramps



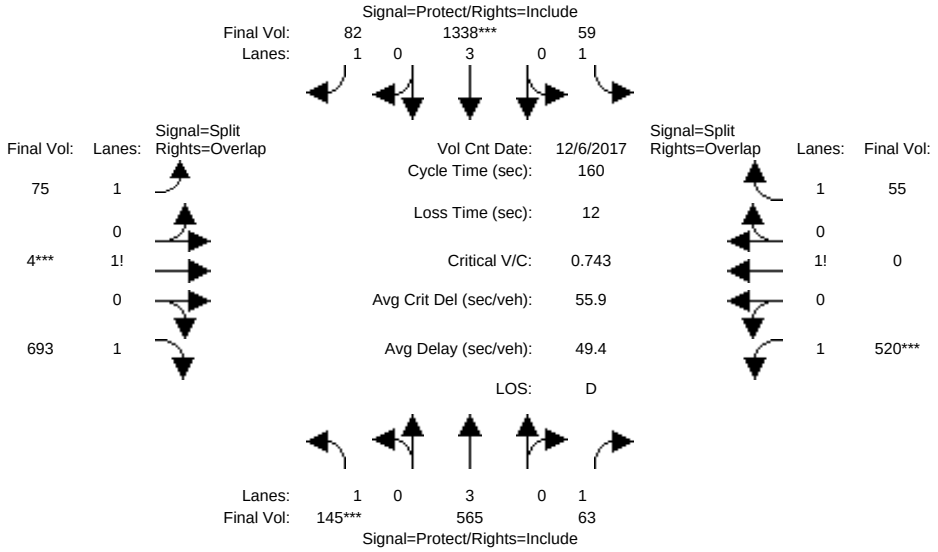
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1222	458	29	362	229	134	0	138	123	2	98
Added Vol:	5	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	1232	458	29	402	229	134	0	138	123	2	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	181	1232	458	29	402	229	134	0	138	123	2	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	1232	458	29	402	229	134	0	138	123	2	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	181	1232	458	29	402	229	134	0	138	123	2	98
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.49	0.00	1.51	1.55	0.02	1.43
Final Sat.:	1750	5700	1750	1750	5700	1750	2612	0	2638	2707	31	2512
Capacity Analysis Module:												
Vol/Sat:	0.10	0.22	0.26	0.02	0.07	0.13	0.05	0.00	0.05	0.05	0.06	0.04
Crit Moves:			****	****			****				****	
Green Time:	46.3	97.8	97.8	7.0	58.5	58.5	19.2	0.0	65.4	24.0	24.0	31.0
Volume/Cap:	0.36	0.35	0.43	0.38	0.19	0.36	0.43	0.00	0.13	0.30	0.43	0.20
Uniform Del:	45.1	15.4	16.4	74.4	34.6	37.0	65.3	0.0	29.5	60.5	61.7	54.1
IncremntDel:	0.4	0.1	0.3	3.1	0.0	0.3	0.5	0.0	0.0	0.2	0.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.5	15.5	16.7	77.5	34.7	37.4	65.8	0.0	29.5	60.8	62.3	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.5	15.5	16.7	77.5	34.7	37.4	65.8	0.0	29.5	60.8	62.3	54.2
LOS by Move:	D	B	B	E-	C-	D+	E	A	C	E	E	D-
HCM2kAvgQ:	7	9	12	1	4	8	5	0	3	4	6	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Mitigated)

Intersection #97: Wolfe Rd & Central Expwy Ramps



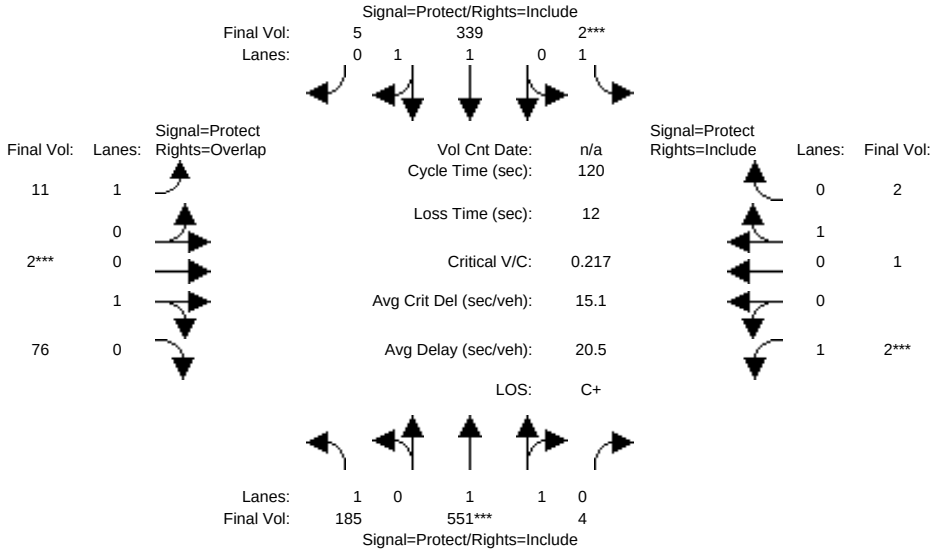
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	6.1	6.1	6.1	5.0	6.1	6.1	6.1	6.1	6.1	5.9	5.9	5.9
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	500	63	59	1333	82	75	4	693	520	0	55
Added Vol:	31	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	565	63	59	1338	82	75	4	693	520	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	565	63	59	1338	82	75	4	693	520	0	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	565	63	59	1338	82	75	4	693	520	0	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	565	63	59	1338	82	75	4	693	520	0	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.93	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.10	0.01	1.89	1.90	0.00	1.10
Final Sat.:	1750	5700	1750	1750	5700	1750	1923	19	3403	3378	0	1920
Capacity Analysis Module:												
Vol/Sat:	0.08	0.10	0.04	0.03	0.23	0.05	0.04	0.22	0.20	0.15	0.00	0.03
Crit Moves:	****				****			****		****		
Green Time:	17.8	47.4	47.4	20.9	50.5	50.5	46.5	46.5	64.4	33.1	0.0	54.1
Volume/Cap:	0.74	0.33	0.12	0.26	0.74	0.15	0.13	0.74	0.51	0.74	0.00	0.08
Uniform Del:	68.9	44.0	41.1	62.5	48.9	39.3	41.9	51.3	35.9	59.5	0.0	36.1
IncremntDel:	14.3	0.1	0.1	0.6	1.7	0.1	0.0	2.9	0.3	3.9	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	83.2	44.1	41.2	63.1	50.7	39.4	41.9	54.3	36.2	63.4	0.0	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.2	44.1	41.2	63.1	50.7	39.4	41.9	54.3	36.2	63.4	0.0	36.1
LOS by Move:	F	D	D	E	D	D	D	D-	D+	E	A	D+
HCM2kAvgQ:	8	7	2	3	19	3	3	19	14	15	0	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Mitigated)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



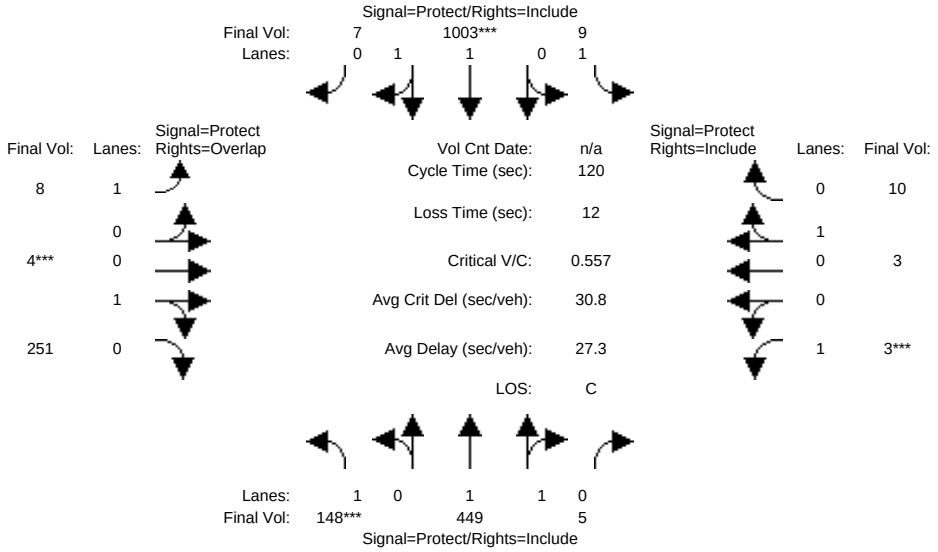
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	185	551	4	2	339	5	11	2	76	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	551	4	2	339	5	11	2	76	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	551	4	2	339	5	11	2	76	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	551	4	2	339	5	11	2	76	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	551	4	2	339	5	11	2	76	2	1	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	551	4	2	339	5	11	2	76	2	1	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	1.00	1.99	0.01	1.00	1.97	0.03	1.00	0.03	0.97	1.00	0.33	0.67
Final Sat.:	1750	3673	27	1750	3646	54	1750	46	1754	1750	600	1200
Capacity Analysis Module:												
Vol/Sat:	0.11	0.15	0.15	0.00	0.09	0.09	0.01	0.04	0.04	0.00	0.00	0.00
Crit Moves:		****		****				****		****		
Green Time:	42.5	72.9	72.9	7.0	37.4	37.4	11.6	21.1	63.6	7.0	16.5	16.5
Volume/Cap:	0.30	0.25	0.25	0.02	0.30	0.30	0.07	0.25	0.08	0.02	0.01	0.01
Uniform Del:	28.0	10.9	10.9	53.3	31.3	31.3	49.3	42.6	13.9	53.3	44.7	44.7
IncremntDel:	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.0	0.1	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.2	10.9	10.9	53.3	31.5	31.5	49.5	43.0	13.9	53.3	44.7	44.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.2	10.9	10.9	53.3	31.5	31.5	49.5	43.0	13.9	53.3	44.7	44.7
LOS by Move:	C	B+	B+	D-	C	C	D	D	B	D-	D	D
HCM2kAvgQ:	5	5	5	0	5	5	0	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Mitigated)

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



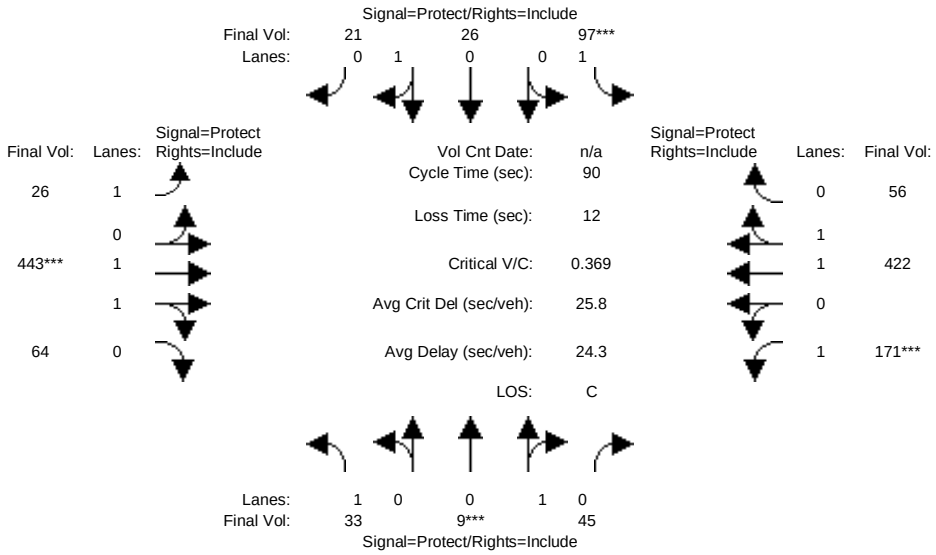
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	148	449	5	9	1003	7	8	4	251	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	449	5	9	1003	7	8	4	251	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	449	5	9	1003	7	8	4	251	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	449	5	9	1003	7	8	4	251	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	449	5	9	1003	7	8	4	251	3	3	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	148	449	5	9	1003	7	8	4	251	3	3	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	1.00	1.98	0.02	1.00	1.99	0.01	1.00	0.02	0.98	1.00	0.23	0.77
Final Sat.:	1750	3659	41	1750	3674	26	1750	28	1772	1750	415	1385
Capacity Analysis Module:												
Vol/Sat:	0.08	0.12	0.12	0.01	0.27	0.27	0.00	0.14	0.14	0.00	0.01	0.01
Crit Moves:	****				****			****			****	
Green Time:	17.1	49.0	49.0	23.3	55.2	55.2	14.7	28.7	45.8	7.0	21.0	21.0
Volume/Cap:	0.59	0.30	0.30	0.03	0.59	0.59	0.04	0.59	0.37	0.03	0.04	0.04
Uniform Del:	48.2	23.9	23.9	39.2	24.0	24.0	46.4	40.5	26.7	53.3	41.2	41.2
IncremntDel:	3.8	0.1	0.1	0.0	0.6	0.6	0.1	2.2	0.3	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.0	24.0	24.0	39.2	24.6	24.6	46.5	42.7	27.1	53.4	41.2	41.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.0	24.0	24.0	39.2	24.6	24.6	46.5	42.7	27.1	53.4	41.2	41.2
LOS by Move:	D-	C	C	D	C	C	D	D	C	D-	D	D
HCM2kAvgQ:	6	6	6	0	14	14	0	9	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project AM (Mitigated)

Intersection #9800: Commercial St & Kifer Rd (Signalized)



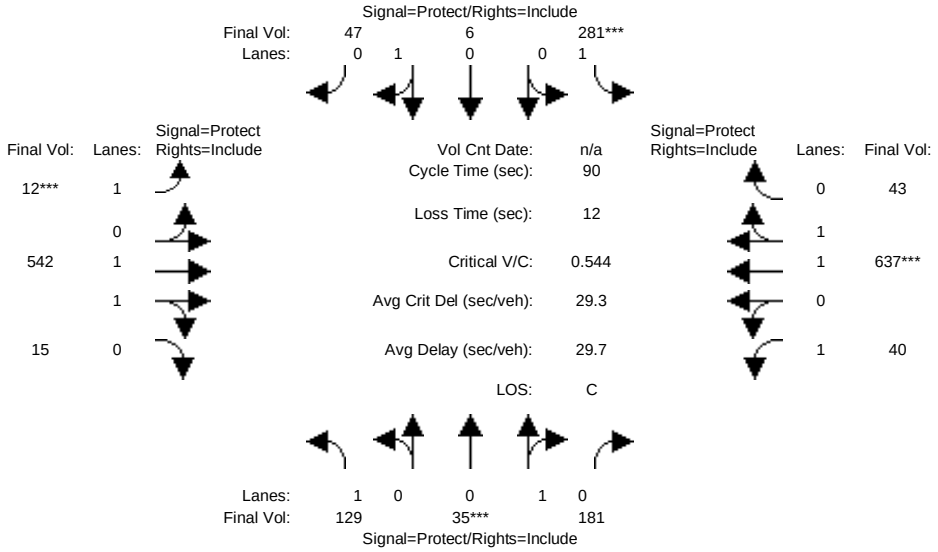
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	9	45	97	26	21	26	443	64	171	422	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	9	45	97	26	21	26	443	64	171	422	56
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	9	45	97	26	21	26	443	64	171	422	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	9	45	97	26	21	26	443	64	171	422	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	9	45	97	26	21	26	443	64	171	422	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	9	45	97	26	21	26	443	64	171	422	56
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.17	0.83	1.00	0.55	0.45	1.00	1.74	0.26	1.00	1.76	0.24
Final Sat.:	1750	300	1500	1750	996	804	1750	3233	467	1750	3266	433
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.06	0.03	0.03	0.01	0.14	0.14	0.10	0.13	0.13
Crit Moves:		****		****				****		****		
Green Time:	9.5	10.0	10.0	13.0	13.5	13.5	20.7	32.1	32.1	22.9	34.3	34.3
Volume/Cap:	0.18	0.27	0.27	0.38	0.17	0.17	0.06	0.38	0.38	0.38	0.34	0.34
Uniform Del:	36.7	36.7	36.7	34.9	33.4	33.4	27.1	21.6	21.6	27.7	19.8	19.8
IncremntDel:	0.5	0.7	0.7	1.0	0.3	0.3	0.1	0.2	0.2	0.6	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	37.4	37.4	35.9	33.7	33.7	27.2	21.8	21.8	28.3	19.9	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	37.4	37.4	35.9	33.7	33.7	27.2	21.8	21.8	28.3	19.9	19.9
LOS by Move:	D+	D+	D+	D+	C-	C-	C	C+	C+	C	B-	B-
HCM2kAvgQ:	1	2	2	3	1	1	1	5	5	4	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing + Project PM (Mitigated)

Intersection #9800: Commercial St & Kifer Rd (Signalized)



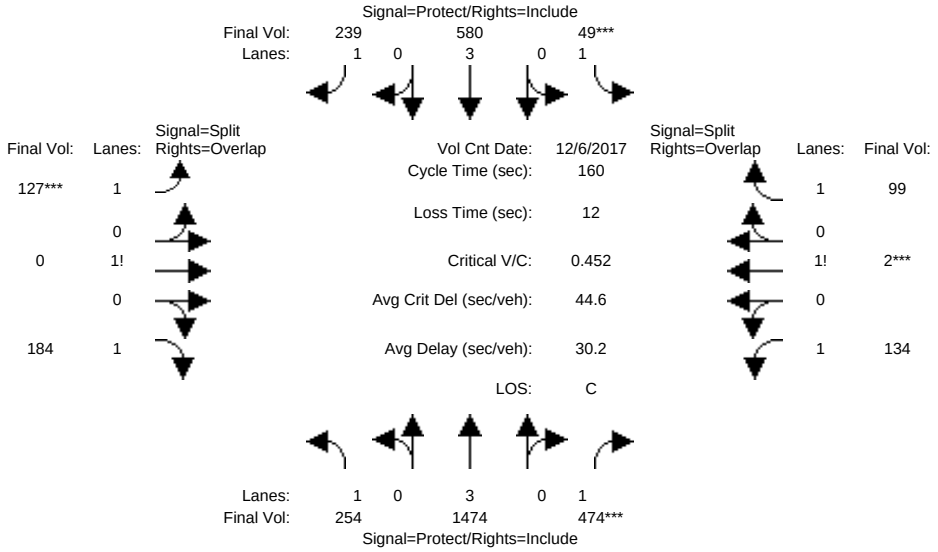
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	129	35	181	281	6	47	12	542	15	40	637	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	35	181	281	6	47	12	542	15	40	637	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	35	181	281	6	47	12	542	15	40	637	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	35	181	281	6	47	12	542	15	40	637	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	35	181	281	6	47	12	542	15	40	637	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	35	181	281	6	47	12	542	15	40	637	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.16	0.84	1.00	0.11	0.89	1.00	1.94	0.06	1.00	1.87	0.13
Final Sat.:	1750	292	1508	1750	204	1596	1750	3600	100	1750	3466	234
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.12	0.16	0.03	0.03	0.01	0.15	0.15	0.02	0.18	0.18
Crit Moves:		****		****			****				****	
Green Time:	17.7	18.3	18.3	24.6	25.2	25.2	7.0	23.1	23.1	12.0	28.1	28.1
Volume/Cap:	0.38	0.59	0.59	0.59	0.11	0.11	0.09	0.59	0.59	0.17	0.59	0.59
Uniform Del:	31.4	32.4	32.4	28.3	24.0	24.0	38.5	29.2	29.2	34.6	26.1	26.1
IncremntDel:	0.7	2.5	2.5	1.9	0.1	0.1	0.3	0.9	0.9	0.4	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.1	34.9	34.9	30.3	24.1	24.1	38.8	30.2	30.2	35.0	26.9	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.1	34.9	34.9	30.3	24.1	24.1	38.8	30.2	30.2	35.0	26.9	26.9
LOS by Move:	C-	C-	C-	C	C	C	D+	C	C	C-	C	C
HCM2kAvgQ:	4	6	6	8	1	1	0	8	8	1	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Mitigated)

Intersection #97: Wolfe Rd & Central Expwy Ramps



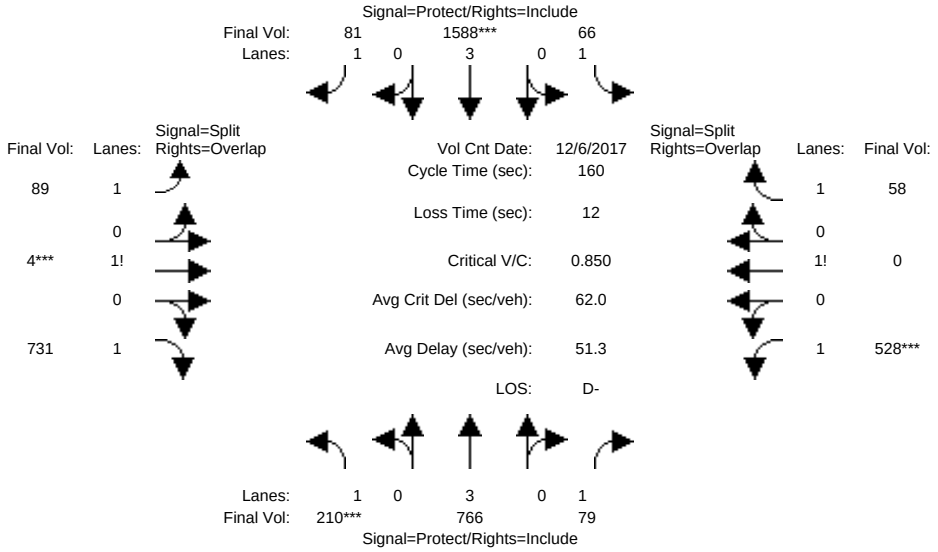
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	249	1464	474	49	540	239	127	0	184	134	2	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	1464	474	49	540	239	127	0	184	134	2	99
Added Vol:	5	10	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	254	1474	474	49	580	239	127	0	184	134	2	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	254	1474	474	49	580	239	127	0	184	134	2	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	254	1474	474	49	580	239	127	0	184	134	2	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	254	1474	474	49	580	239	127	0	184	134	2	99
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.41	0.00	1.59	1.56	0.02	1.42
Final Sat.:	1750	5700	1750	1750	5700	1750	2465	0	2785	2739	30	2481
Capacity Analysis Module:												
Vol/Sat:	0.15	0.26	0.27	0.03	0.10	0.14	0.05	0.00	0.07	0.05	0.07	0.04
Crit Moves:			****	****			****				****	
Green Time:	54.5	95.9	95.9	9.9	51.3	51.3	18.2	0.0	72.7	24.0	24.0	33.9
Volume/Cap:	0.43	0.43	0.45	0.45	0.32	0.43	0.45	0.00	0.15	0.33	0.45	0.19
Uniform Del:	40.7	17.3	17.6	72.4	41.1	42.8	66.2	0.0	25.5	60.8	62.0	51.8
IncremntDel:	0.5	0.1	0.3	3.0	0.1	0.5	0.5	0.0	0.0	0.3	0.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.2	17.4	17.9	75.4	41.2	43.3	66.7	0.0	25.5	61.1	62.7	51.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.2	17.4	17.9	75.4	41.2	43.3	66.7	0.0	25.5	61.1	62.7	51.8
LOS by Move:	D	B	B	E-	D	D	E	A	C	E	E	D-
HCM2kAvgQ:	10	12	13	2	7	10	5	0	3	4	6	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Mitigated)

Intersection #97: Wolfe Rd & Central Expwy Ramps



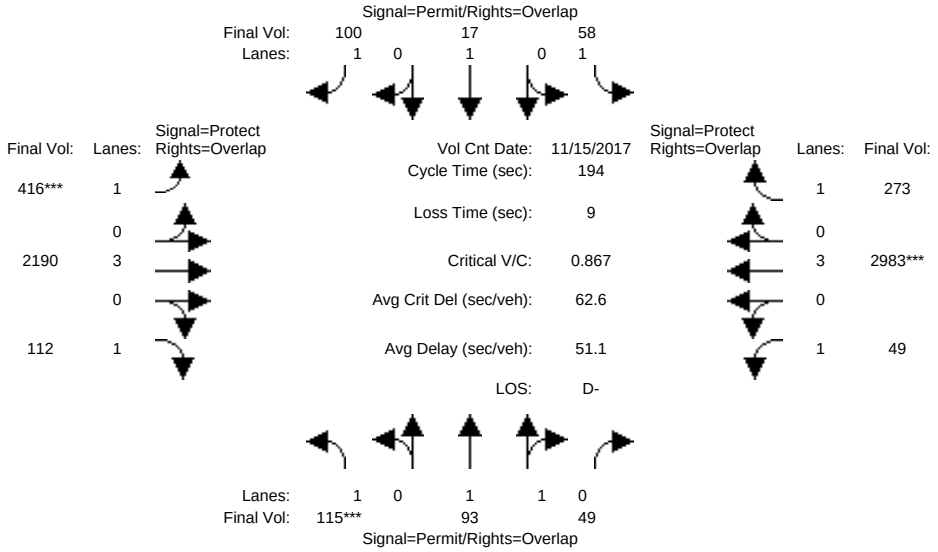
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	6.1	6.1	6.1	5.0	6.1	6.1	6.1	6.1	6.1	5.9	5.9	5.9
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	179	701	79	66	1583	81	89	4	731	528	0	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	701	79	66	1583	81	89	4	731	528	0	58
Added Vol:	31	65	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	766	79	66	1588	81	89	4	731	528	0	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	766	79	66	1588	81	89	4	731	528	0	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	766	79	66	1588	81	89	4	731	528	0	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	766	79	66	1588	81	89	4	731	528	0	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.93	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.11	0.01	1.88	1.90	0.00	1.10
Final Sat.:	1750	5700	1750	1750	5700	1750	1943	17	3384	3372	0	1925
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.05	0.04	0.28	0.05	0.05	0.23	0.22	0.16	0.00	0.03
Crit Moves:	****				****			****		****		
Green Time:	22.6	56.6	56.6	18.4	52.5	52.5	43.4	43.4	66.0	29.5	0.0	47.9
Volume/Cap:	0.85	0.38	0.13	0.33	0.85	0.14	0.17	0.85	0.52	0.85	0.00	0.10
Uniform Del:	67.0	38.6	35.0	65.1	50.1	37.9	44.5	55.2	35.2	63.1	0.0	40.5
IncremntDel:	23.3	0.1	0.1	1.0	3.9	0.1	0.0	7.2	0.3	9.8	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	90.3	38.7	35.1	66.0	54.0	38.0	44.5	62.4	35.5	72.9	0.0	40.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.3	38.7	35.1	66.0	54.0	38.0	44.5	62.4	35.5	72.9	0.0	40.5
LOS by Move:	F	D+	D+	E	D-	D+	D	E	D+	E	A	D
HCM2kAvgQ:	12	9	3	3	25	3	3	22	15	16	0	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Mitigated)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



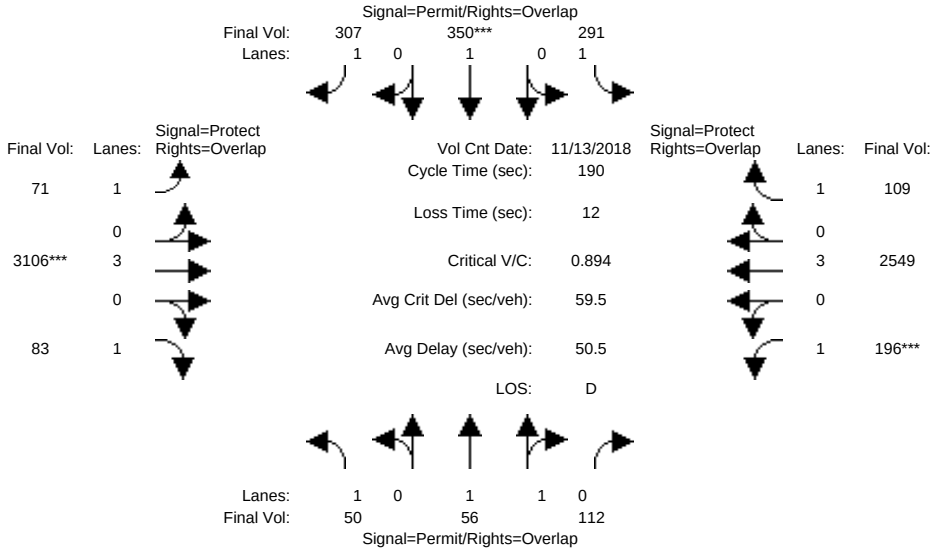
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	115	93	49	58	17	100	416	2180	112	49	2929	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	93	49	58	17	100	416	2180	112	49	2929	273
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	93	49	58	17	100	416	2190	112	49	2983	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	93	49	58	17	100	416	2190	112	49	2983	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	93	49	58	17	100	416	2190	112	49	2983	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	93	49	58	17	100	416	2190	112	49	2983	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	2422	1276	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.04	0.03	0.01	0.06	0.24	0.38	0.06	0.03	0.52	0.16
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.54	0.31	0.20	0.27	0.07	0.19	1.34	0.54	0.09	0.38	0.86	0.26
Uniform Del:	80.0	77.7	65.3	77.1	75.2	50.3	79.8	13.2	8.7	85.7	31.4	17.7
IncremntDel:	2.7	0.4	0.1	0.7	0.1	0.2	171.9	0.1	0.0	1.9	2.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	35.0	22.9	87.6	33.8	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	78.1	65.4	77.8	75.4	50.4	263.1	35.0	22.9	87.6	33.8	17.9
LOS by Move:	F	E-	E	E-	E-	D	F	C-	C+	F	C-	B
HCM2kAvgQ:	7	4	3	3	1	5	42	36	5	3	45	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Mitigated)

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



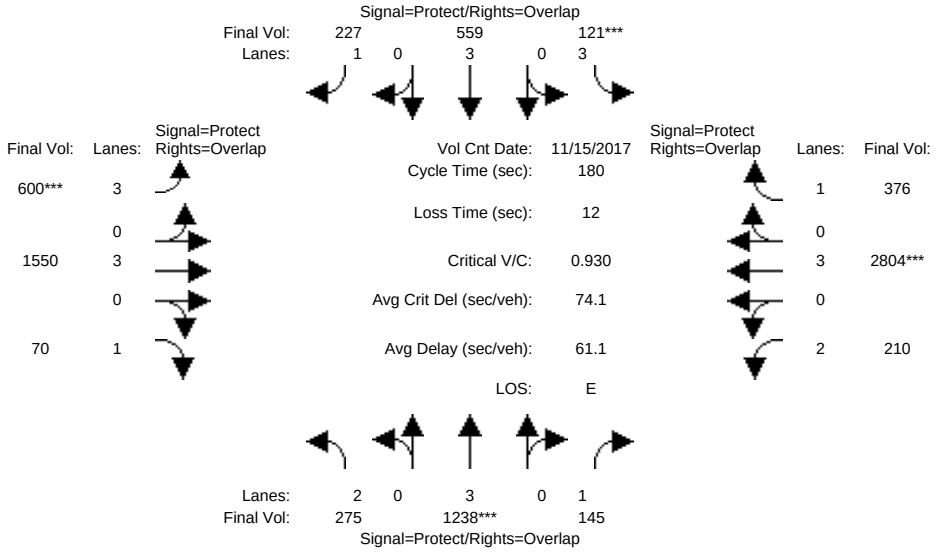
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	50	56	112	291	350	307	71	3044	83	196	2543	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	56	112	291	350	307	71	3044	83	196	2543	109
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	56	112	291	350	307	71	3106	83	196	2549	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	56	112	291	350	307	71	3106	83	196	2549	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	56	112	291	350	307	71	3106	83	196	2549	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	56	112	291	350	307	71	3106	83	196	2549	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.17	0.18	0.18	0.04	0.54	0.05	0.11	0.45	0.06
Crit Moves:					****			****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.15	0.15	0.23	0.86	0.95	0.68	0.63	0.83	0.07	1.26	0.65	0.09
Uniform Del:	67.7	67.8	55.6	78.9	80.6	67.5	92.2	25.9	12.4	92.0	18.3	10.8
IncremntDel:	0.2	0.1	0.2	19.6	35.0	4.2	11.0	1.6	0.0	157.1	0.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	41.2	18.9	249.1	29.7	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	67.8	55.8	98.5	116	71.8	103.1	41.2	18.9	249.1	29.7	17.3
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	C	B
HCM2kAvgQ:	3	3	5	20	23	18	6	55	3	19	39	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Mitigated)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



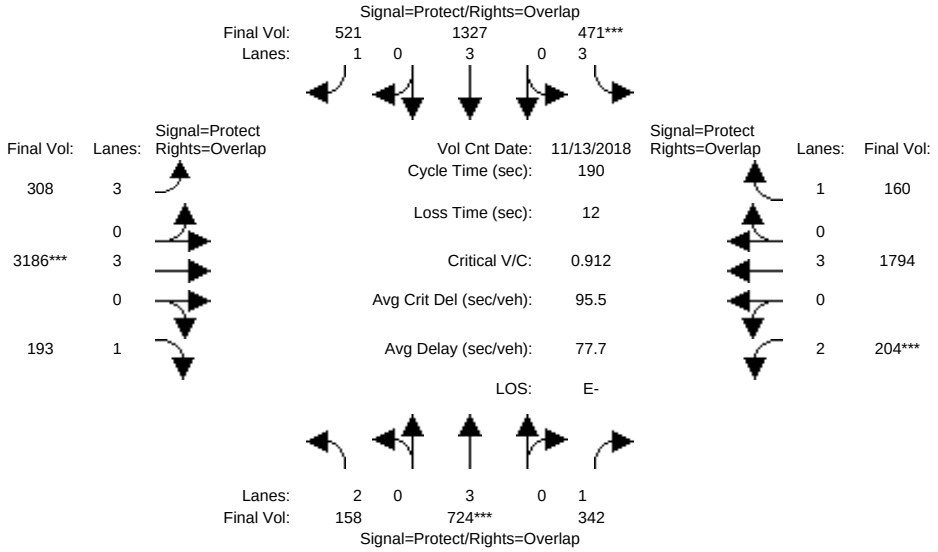
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	1238	145	121	559	227	600	1540	70	210	2750	376
Added Vol:	0	0	0	0	0	0	0	10	0	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	1238	145	121	559	227	600	1550	70	210	2804	376
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	1238	145	121	559	227	600	1550	70	210	2804	376
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	1238	145	121	559	227	600	1550	70	210	2804	376
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	1238	145	121	559	227	600	1550	70	210	2804	376
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.22	0.08	0.03	0.10	0.13	0.13	0.27	0.04	0.07	0.49	0.21
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.80	0.97	0.26	0.34	0.51	0.39	0.92	0.50	0.06	0.73	1.00	0.38
Uniform Del:	78.2	69.4	46.1	78.7	65.1	45.7	76.1	26.0	11.5	79.7	45.8	21.4
IncremntDel:	12.3	18.9	0.3	0.6	0.4	0.4	18.3	0.1	0.0	9.3	17.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	90.5	88.3	46.4	79.3	65.5	46.1	94.4	26.2	11.5	88.9	63.2	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.5	88.3	46.4	79.3	65.5	46.1	94.4	26.2	11.5	88.9	63.2	21.6
LOS by Move:	F	F	D	E-	E	D	F	C	B+	F	E	C+
HCM2kAvgQ:	9	23	6	3	9	10	15	17	1	8	58	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Mitigated)

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



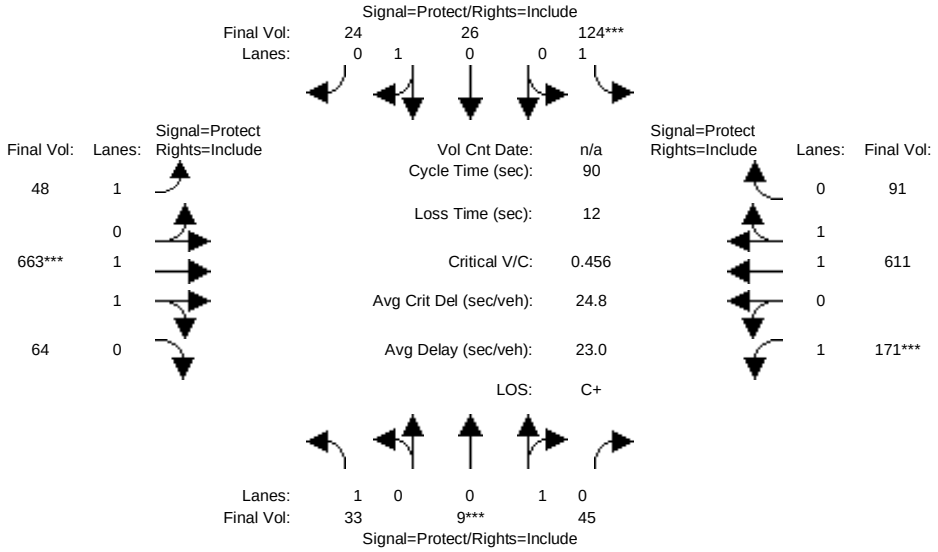
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	724	342	471	1327	521	308	3124	193	204	1788	160
Added Vol:	0	0	0	0	0	0	0	62	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	724	342	471	1327	521	308	3186	193	204	1794	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	724	342	471	1327	521	308	3186	193	204	1794	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	724	342	471	1327	521	308	3186	193	204	1794	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	724	342	471	1327	521	308	3186	193	204	1794	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.20	0.10	0.23	0.30	0.07	0.56	0.11	0.06	0.31	0.09
Crit Moves:		****		****				****		****		
Green Time:	15.0	39.0	53.0	19.5	43.5	60.7	17.2	105	120.5	14.0	102	121.8
Volume/Cap:	0.64	0.62	0.70	1.01	1.02	0.93	0.75	1.01	0.17	0.88	0.58	0.14
Uniform Del:	84.8	68.7	61.4	85.2	73.2	62.6	84.3	42.3	14.3	87.2	29.6	13.5
IncremntDel:	5.3	1.0	4.5	43.3	29.0	22.4	7.3	17.7	0.1	29.5	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.83	2.16	1.00	0.70	0.47
Delay/Veh:	90.2	69.8	65.9	128.6	102	85.0	97.2	95.1	30.9	116.6	21.1	6.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.2	69.8	65.9	128.6	102	85.0	97.2	95.1	30.9	116.6	21.1	6.3
LOS by Move:	F	E	E	F	F	F	F	F	C	F	C+	A
HCM2kAvgQ:	5	12	19	13	29	34	7	65	9	9	17	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project AM (Mitigated)

Intersection #9800: Commercial St & Kifer Rd (Signalized)



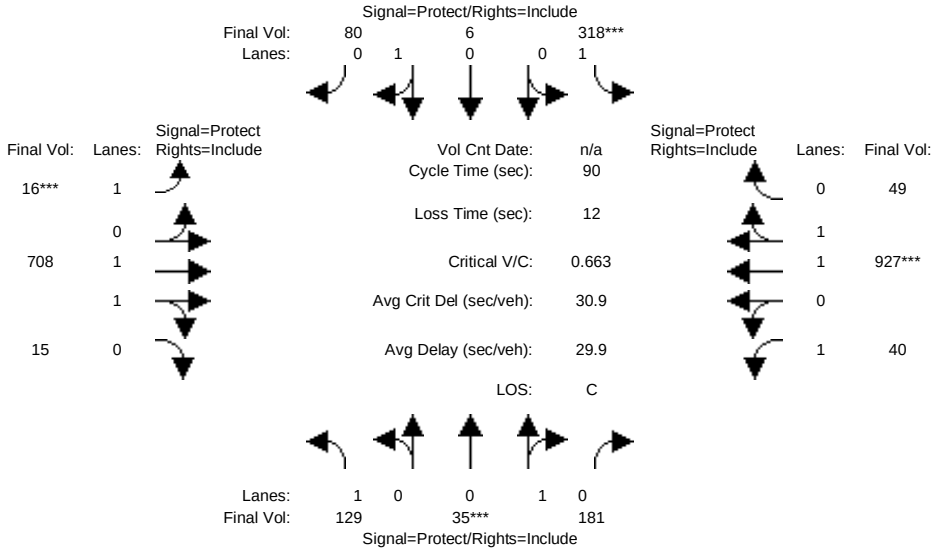
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	9	45	124	26	24	48	663	64	171	611	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	9	45	124	26	24	48	663	64	171	611	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	9	45	124	26	24	48	663	64	171	611	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	9	45	124	26	24	48	663	64	171	611	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	9	45	124	26	24	48	663	64	171	611	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	9	45	124	26	24	48	663	64	171	611	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.17	0.83	1.00	0.52	0.48	1.00	1.82	0.18	1.00	1.73	0.27
Final Sat.:	1750	300	1500	1750	936	864	1750	3374	326	1750	3220	480
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.07	0.03	0.03	0.03	0.20	0.20	0.10	0.19	0.19
Crit Moves:		****		****				****		****		
Green Time:	9.6	10.0	10.0	13.2	13.6	13.6	15.9	36.6	36.6	18.2	38.9	38.9
Volume/Cap:	0.18	0.27	0.27	0.48	0.18	0.18	0.15	0.48	0.48	0.48	0.44	0.44
Uniform Del:	36.6	36.7	36.7	35.3	33.3	33.3	31.3	19.7	19.7	31.7	17.9	17.9
IncremntDel:	0.5	0.7	0.7	1.4	0.3	0.3	0.2	0.2	0.2	1.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.1	37.4	37.4	36.7	33.6	33.6	31.6	20.0	20.0	32.8	18.1	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	37.4	37.4	36.7	33.6	33.6	31.6	20.0	20.0	32.8	18.1	18.1
LOS by Move:	D+	D+	D+	D+	C-	C-	C	B-	B-	C-	B-	B-
HCM2kAvgQ:	1	2	2	4	1	1	1	8	8	5	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background + Project PM (Mitigated)

Intersection #9800: Commercial St & Kifer Rd (Signalized)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	129	35	181	318	6	80	16	708	15	40	927	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	35	181	318	6	80	16	708	15	40	927	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	35	181	318	6	80	16	708	15	40	927	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	35	181	318	6	80	16	708	15	40	927	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	35	181	318	6	80	16	708	15	40	927	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	35	181	318	6	80	16	708	15	40	927	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.16	0.84	1.00	0.07	0.93	1.00	1.96	0.04	1.00	1.90	0.10
Final Sat.:	1750	292	1508	1750	126	1674	1750	3623	77	1750	3514	186
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.12	0.18	0.05	0.05	0.01	0.20	0.20	0.02	0.26	0.26
Crit Moves:		****		****			****				****	
Green Time:	15.6	15.1	15.1	22.8	22.3	22.3	7.0	28.7	28.7	11.4	33.1	33.1
Volume/Cap:	0.43	0.72	0.72	0.72	0.19	0.19	0.12	0.61	0.61	0.18	0.72	0.72
Uniform Del:	33.2	35.4	35.4	30.6	26.8	26.8	38.6	25.9	25.9	35.1	24.4	24.4
IncremntDel:	1.0	8.0	8.0	5.5	0.2	0.2	0.4	1.0	1.0	0.4	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.2	43.5	43.5	36.2	27.0	27.0	39.0	26.9	26.9	35.5	26.3	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	43.5	43.5	36.2	27.0	27.0	39.0	26.9	26.9	35.5	26.3	26.3
LOS by Move:	C-	D	D	D+	C	C	D	C	C	D+	C	C
HCM2kAvgQ:	4	8	8	10	2	2	1	9	9	1	13	13

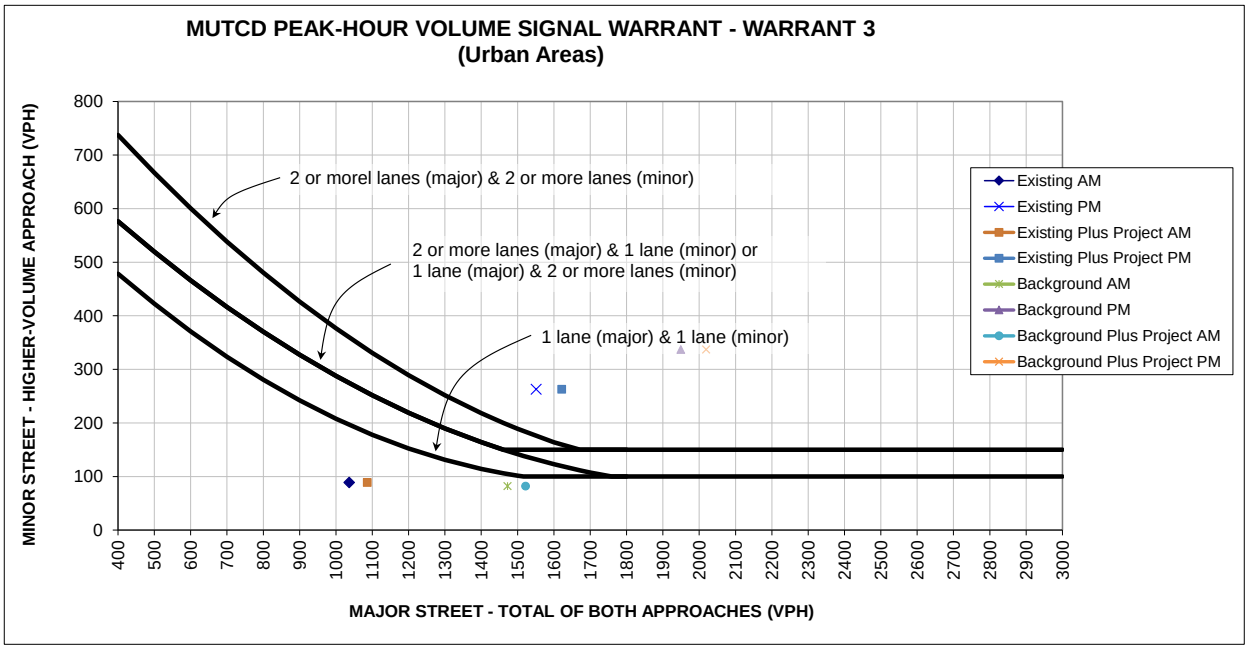
Note: Queue reported is the number of cars per lane.

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Appendix D
Signal Warrant Worksheets

Intuitive Surgical Campus Expansion TIA - Signal Warrant Analysis

Wolfe Avenue (major) & Maude Avenue (minor)



Source: Figure 4C-3 of the Manual on Unifrom Traffic Control and Devices (MUTCD) 2014 Edition from California Department of Transportation (Caltrans).
* 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes
and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

AM Peak Hour

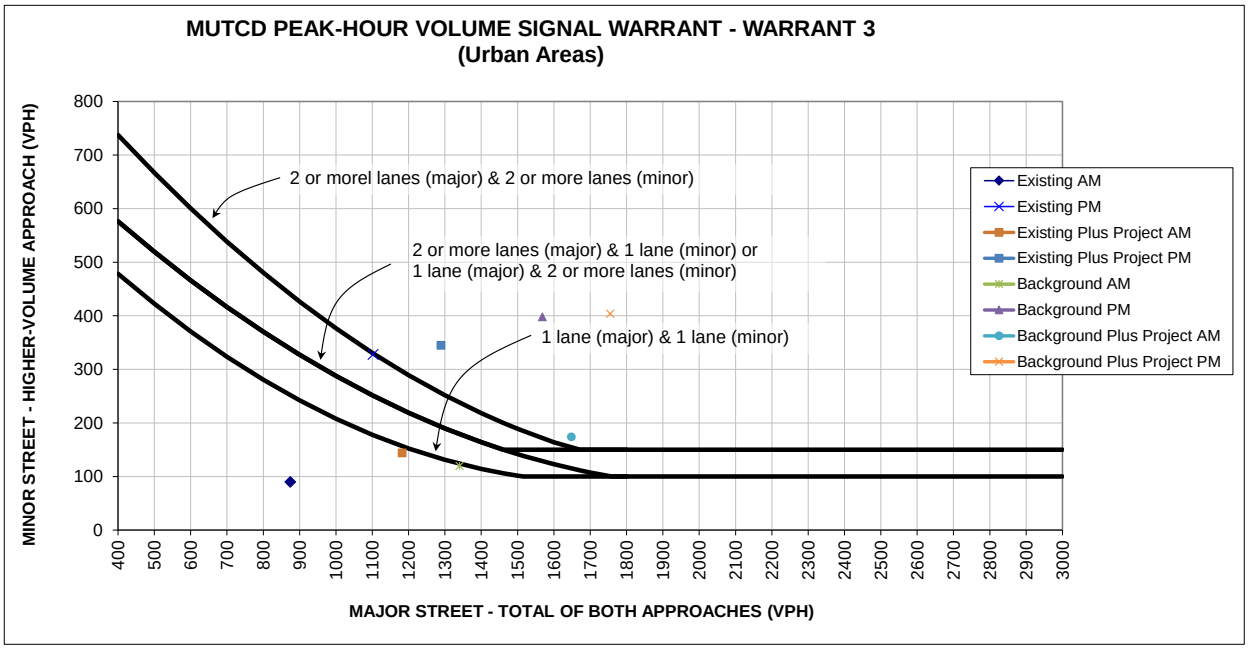
		Existing Approach Lanes: One	Existing Approach Lanes: 2 or More	Existing AM	Existing Plus Project AM	Background AM	Background Plus Project AM
Major Street - Both Approaches	Wolfe Avenue		X	1036	1086	1472	1522
Minor Street - Highest Approach	Maude Avenue	X		89	89	82	82
Maximum warrant threshold for minor street volume				274	256	148	137
Difference between warrant threshold & minor street volume				185	167	66	55
		Warrant Met?		No	No	No	No

PM Peak Hour

		Existing Approach Lanes: One	Existing Approach Lanes: 2 or More	Existing PM	Existing Plus Project PM	Background PM	Background Plus Project PM
Major Street - Both Approaches	Wolfe Avenue		X	1551	1621	1949	2019
Minor Street - Highest Approach	Maude Avenue	X		263	263	337	337
Maximum warrant threshold for minor street volume				132	119	100	100
Difference between warrant threshold & minor street volume				131	144	237	237
		Warrant Met?		Yes	Yes	Yes	Yes

Intuitive Surgical Campus Expansion TIA - Signal Warrant Analysis

Commercial Street (minor) & Kifer Road (major)



Source: Figure 4C-3 of the Manual on Unifrom Traffic Control and Devices (MUTCD) 2014 Edition from California Department of Transportation (Caltrans).
* 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes
and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

AM Peak Hour

		Existing Approach Lanes: One	Existing Approach Lanes: 2 or More	Existing AM	Existing Plus Project AM	Background AM	Background Plus Project AM
Major Street - Both Approaches	Kifer Road		X	874	1182	1340	1648
Minor Street - Highest Approach	Commercial Street	X		90	144	120	174
Maximum warrant threshold for minor street volume				338	225	179	115
Difference between warrant threshold & minor street volume				248	81	59	59
		Warrant Met?		No	No	No	**Yes**

PM Peak Hour

		Existing Approach Lanes: One	Existing Approach Lanes: 2 or More	Existing PM	Existing Plus Project PM	Background PM	Background Plus Project PM
Major Street - Both Approaches	Kifer Road		X	1102	1289	1568	1755
Minor Street - Highest Approach	Commercial Street	X		328	345	398	404
Maximum warrant threshold for minor street volume				251	193	129	100
Difference between warrant threshold & minor street volume				77	152	269	304
		Warrant Met?		**Yes**	**Yes**	**Yes**	**Yes**

Appendix E
Intuitive Campus TDM Plan

Intuitive
Intuitive Campus
TDM Plan

Final | February 28, 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 263902-17

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ARUP

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Appendices

Appendix A

City of Sunnyvale TDM Form

Appendix B

Parking Calculations

1 Introduction and Project Description

Transportation Demand Management (TDM) is the incorporation of a variety of incentives, services, and actions that influence the reduction of single-occupant automobile trips to provide additional relief from congestion, parking, and air quality impacts[1].

This TDM plan has been completed in accordance with the City of Sunnyvale TDM Tool Kit, the City of Sunnyvale Draft TDM Program Guidelines and is also consistent with the Lawrence Station Area Plan (LSAP) Trip Reduction guidelines and incorporates comments received from the City of Sunnyvale.

1.1 Project Description

The project includes 364,000 sq ft of corporate office on 945 and 955 Kifer Road (the north site) and 847,000 sq ft of manufacturing and research and development (R&D) on 932 and 950 Kifer Road (the south site). The north site is bounded to the north and south by Central Expressway and Kifer Road respectively with access from Kifer Road only. The south site is bounded to the north and south by Kifer Road and the Caltrain right-of-way respectively with access from Kifer Road only.

Parking will be provided to meet City requirements. In total, 2,550 parking spaces will be provided – 822 on the north site and 1,728 on the south site. For the north site, parking will be provided in a two-level basement underneath the office building with 31 surface parking spaces also provided in the southwest corner of the site. For the south site, parking will be provided in a five-level parking structure with 57 surface parking spaces also provided in the northwest corner of the site. Of the 2,550 parking spaces, 50 will be ADA accessible, including 11 van ADA accessible spaces, 128 for carpool and 78 for electric vehicles.

Figure 1 presents a map of the site location and Figure 2 presents the proposed site plan.

Long-term (Class I) and short-term (Class II) bicycle parking will be provided in line with City requirements. In total, 148 Class I bicycle parking spaces will be provided in the amenity building on the north site and in the parking structure on the south site. Class II bicycle parking will be provided for 50 bicycles and will be conveniently located near building entrances.

Pedestrian and bicycle facilities are provided in and around the site to connect the external pedestrian and bicycle paths to internal entrances and parking.

[1] City of Sunnyvale Draft TDM Program Guidelines, November 2015

1.2 Trip Reduction Goals

The trip reduction mitigation measures in the TDM plan are essential to achieve the trip reduction goals for the project, defined as follows in the TDM Policies of the LSAP:

TDM-P2 *Achieve a daily trip reduction target of 20 percent and a peak hour trip reduction target of 30 percent for new Office/R&D development.*

Table 1 shows the estimated weekday AM and PM peak hour vehicle trips for the project using Institute of Transportation Engineers (ITE) vehicle trip generation rates. The table also shows the trip generation allowance after applying the prescribed TDM trip reductions given above.

Table 1: Trip Allowance Calculation for Intuitive Campus

Site	Land Use	ITE Code	Area (sf)	Daily		AM Peak Hour		PM Peak Hour	
				Rate	Trips	Rate	Trips	Rate	Trips
North Site	General Office Building	710	364,000	9.74	3,545	1.16	422	1.15	419
	Maximum Allowable Trips with 20%/30% Trip Reduction			**20%**	**2,836**	**30%**	**296**	**30%**	**293**
South Site	Manufacturing and R&D	760	847,000	11.26	9,537	0.42	356	0.49	415
	Maximum Allowable Trips with 20%/30% Trip Reduction			**20%**	**7,630**	**30%**	**249**	**30%**	**291**
Total Maximum Allowable Trips				**10,466**		**545**		**584**	

Source: ITE Trip Generation Manual 10th Edition; average rate per 1,000 square feet of gross floor area; peak hour of adjacent street traffic (one hour between 7-9AM and between 4-6PM)

Note: Trip generation is based on current development program at time of submittal. A Traffic Impact Analysis (TIA) is being conducting separately from the TDM plan. Trip generation numbers should match for both the TIA and TDM. If necessary, TDM will be updated to match approved TIA trip generation.

The maximum allowable daily trips for both the north site and the south site of the Intuitive Campus, after the 20 percent reduction, is 10,466. The maximum allowable peak hour trips for both the north site and the south site, after the 30 percent reduction, are 545 and 584 in the AM peak hour and PM peak hour respectively.

1.3 Area Map

See Figure 1 for a map showing the location of the Intuitive Campus. The office building will be located on the site to the north of Kifer Road comprised of parcels 945 and 955 Kifer Road. The manufacturing and R&D building will be located on the site to the south of Kifer Road comprised of parcels 932 and 950 Kifer Road.

1.4 Site Plan

See Figure 2 for a proposed site plan of the Intuitive Campus.

Figure 1: Location of Intuitive Campus



Figure 2: Intuitive Campus Site Plan



2 Trip Reduction Program and Mitigation Measures

Intuitive will offer the following programs to achieve the trip reduction goals. The programs are organized into two categories: baseline measures, which Intuitive will include in their TDM plan, and optional measures that may be included to help meet the trip reduction goals.

2.1 Baseline TDM Programs

The baseline TDM programs that the project will implement are described below.

2.1.1 On-Site TDM Coordinator

Intuitive has a dedicated on-site TDM coordinator whose role is to proactively plan for changes in travel demand, adjust and implement new services, and monitor the impacts of changes, all while responding to a host of day-to-day operational challenges. The TDM Plan proposed for the Intuitive Campus will be administered and managed through the on-site TDM coordinator.

2.1.2 Membership in Transportation Management Association (TMA)

A Transportation Management Association (TMA) is an organized group (typically non-profit) that works to support TDM and related commuter transportation strategies for both private and public employers and their employees. A TMA typically provides:

- Commuter resources
- Carpool and vanpool matching
- Transportation consulting
- Employee commute surveys
- Guaranteed Ride Home
- Enhanced bicycle facilities
- Car and vanpool incentives
- Transit advocacy
- Information on local issues
- Training
- Marketing programs
- Promotional assistance
- Newsletters



Carpool Parking Photo © Arup

Intuitive participates in and is a part of the SVBC Sunnyvale team and remains connected about alternative commute programs, incentives, and transportation projects affecting LSAP businesses.

2.1.3 Priority Parking for Carpools, Vanpools, and Clean-Fuel Vehicles

Priority parking for ADA, carpools and vanpools as well as personal electric vehicles is provided close to the main building entrances. The number and type of parking spaces provided is summarized in Table 2.

Table 2: Intuitive Vehicle Parking Provision

Type of Parking	Parking Spaces Provided		
	North Site	South Site	Total
Total shared and commercial parking spaces	822	1,728	2,550
ADA spaces	20 (5 of which are ADA van accessible)	30 (6 of which are ADA van accessible)	50 (11 of which are ADA van accessible)
Carpool (and vanpool) spaces	47	81	128
Electric vehicle parking spaces	29	49	78

2.1.4 Bicycle Parking, Sharing and Facilities

To facilitate cycling as a major mode of transportation, secure and ample bicycle parking is required. This includes providing both long-term and short-term bicycle parking. Long-term or Class I secured bicycle parking is defined as lockable facilities such as individual lockers or enclosed, locked, limited-access areas for parking of bicycles. Short-term or Class II bike racks are defined as stationary objects to which a bicycle can be locked such as “inverted U” racks or “ribbon wave” racks. As shown in Table 3, 148 long-term bicycle parking spaces and 50 short-term bicycle racks will be provided.

In addition, Intuitive has its own inter-campus bicycle program, Zagster, and currently provides 36 bikes, with dedicated racks and locks, for employees to use between their various campuses in Sunnyvale. This program will be extended to serve the new Intuitive Campus.

Also, to complement a worksite’s bicycle and active transportation, showers and changing facilities are important for employees who walk or bike to work or for those who wish to change after commuting via alternative modes of transportation. Showers with changing facilities and lockers will be provided in the amenity building on the north site and on level 1 of the manufacturing and R&D building on the south site.

Table 3: Bicycle Parking Provision

Type of Parking	Parking Spaces Provided		
	North Site	South Site	Total
Short-term/Class II bicycle parking (racks lockable in two points on a bike)	15	35	50
Long-term/Class I bicycle parking (covered, lockable enclosure protected from weather)	44	104	148

2.1.5 Rideshare Matching Services

Intuitive employees have access to an internal commuter/transportation webpage which allows them to search for individuals who they could carpool/vanpool with. Carpoolers and vanpoolers can use the designated carpool parking spaces.

2.1.6 Pre-tax Commuter Benefits

Pre-tax commuter benefits are provided through payroll. Consistent with the provisions in the federal tax code, employees can pay for transit passes and/or bicycle tune ups using pre-tax dollars.

2.1.7 Marketing and Information

Intuitive will lead the marketing and promotion of the TDM programs, which is critical to the success of the TDM measures. In addition to providing information on transit and bike maps, rideshare matching services, and pre-tax commuter benefits, Intuitive will promote special events and recurring TDM programs to employees. This may include active transportation events such as Bike to Work Day, monthly or quarterly bike repair and commute workshops, fitness competitions, and other incentive programs.

Additional ways to promote the TDM programs include:

- Embedded materials within new hire packets and orientation
- Transportation fairs; combined with benefits/health fairs to increase attendance
- Regularly published electronic newsletters
- Informational email blasts
- Commuter information boards/kiosks located in prominent, central locations like the building lobby
- Employer/TMA website with information and links to local relevant agencies, forms, and services

2.2 Optional TDM Programs

This section provides additional TDM programs which may be implemented at the Intuitive Campus.

2.2.1 Employer Commuter Shuttle Services

Intuitive currently provides free daily shuttles to/from its existing campuses in Sunnyvale and may extend these services to the Intuitive Campus. Existing shuttle routes include:

- Intercampus shuttles which operate as a loop between the Intuitive buildings and Lawrence Caltrain Station from 7:15AM to 6:00PM
- Shuttles to/from Santa Clara Great America Station and Intuitive buildings between 5:15AM and 8:10AM and also between 3:00PM and 6:35PM
- Commuter shuttles to/from the East Bay with pick-up/drop-off at Fremont Civic Center Park and Ride and Fremont BART station between 5:15AM and 8:10AM and also between 3:00PM and 6:35PM

Shuttle users are guaranteed a ride home (Uber voucher, taxi reimbursement, etc) should shuttle service go down for any reason.

2.2.2 Flexible Work Schedule Program

Flexible work schedules provide versatility to employees and can reduce the number of commuters during typical peak work hours. Intuitive currently offers the following options which they may extent to employees at Intuitive Campus:

- Working from other offices or remote locations, including the Intuitive satellite office in San Francisco
- Flexible work program (for certain groups)

2.2.3 Subsidized or Free Transit Passes

Intuitive currently provides a free Caltrain Go Pass to its employees who commute by Caltrain. The Caltrain Go Pass provides unlimited Caltrain rides seven days a week. In 2018, 765 employees signed up for this benefit which may also be extended to employees at the Intuitive Campus.

3 Planning and Design Measures

The project's location and physical context provides access to public transit and bicycle routes, which will complement the TDM program measures listed in Section 2.

3.1 Transit Service

Figure 3 shows the public transit that operates within Sunnyvale near the site including Caltrain and a number of VTA bus routes. Not shown on the map but given in Figure 4 is the Altamont Corridor Express (ACE) Gray Shuttle which runs along Kifer Road in front of the development site.

Caltrain

Caltrain provides a commuter rail service along the San Francisco Peninsula, through the South Bay to San Jose and Gilroy. The service operates seven days a week with various frequencies during the peak morning and evening hours. Intuitive operates a shuttle between its Sunnyvale campuses and the Lawrence Caltrain Station.

Altamont Corridor Express (ACE)

ACE provides a shuttle for commuters from the east (as far east as Stockton, passing through Lathrop, Tracy, Livermore, Pleasanton, and Fremont). The ACE Gray Shuttle (Figure 4) connects the Great America Station and the Intuitive Campus and Intuitive also operates a shuttle to/from its campuses and the Great America Station.

Figure 3: VTA Bus and Rail Map



Figure 4: ACE Gray Shuttle 822 (source: VTA)

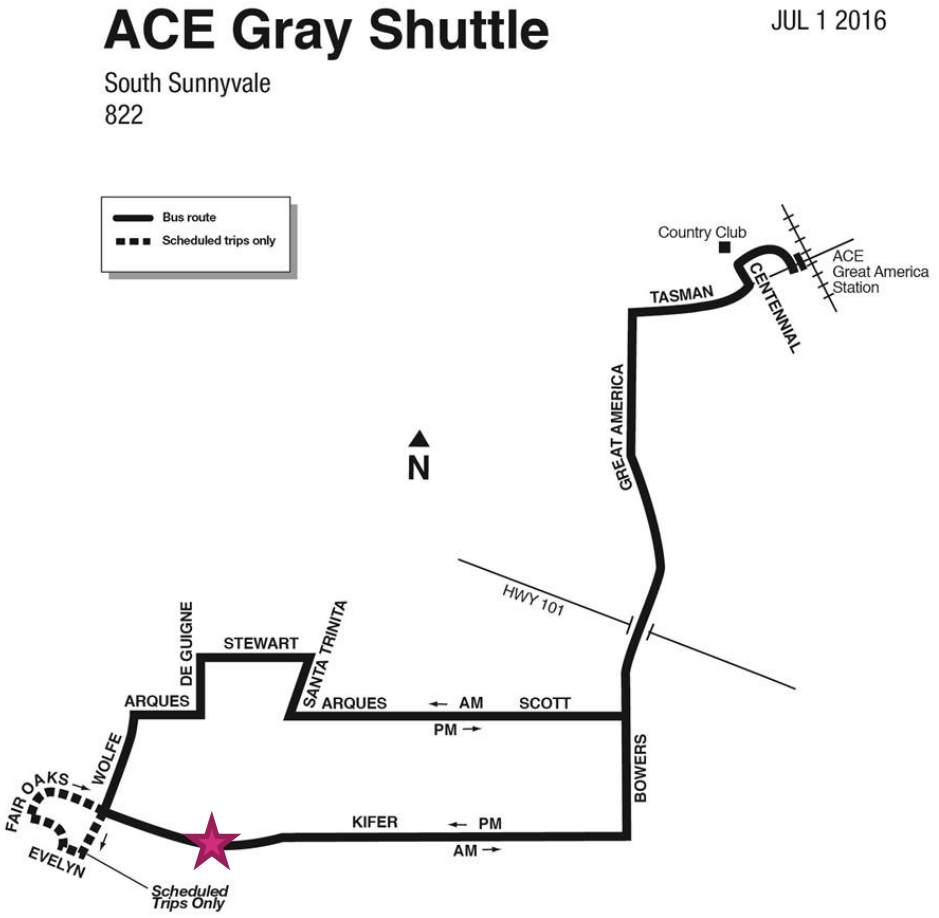


Table 4 shows a summary of the existing transit services near the Intuitive Campus. The VTA bus routes are given in Figure 5 to Figure 9. It is understood that these routes may change when the VTA Next Network project is implemented and the anticipated changes are also noted in Table 4.

Table 4: Transit Services Serving Intuitive Campus

Service	Description	Nearby Stops	Service Hours	VTA Next Network
Caltrain	Caltrain Service to Lawrence Caltrain Station	Lawrence Caltrain Station (0.8 mi)	Northbound: 4:39AM-10:40PM Southbound: 6:15AM-1:29AM	

Service	Description	Nearby Stops	Service Hours	VTA Next Network
ACE Gray Shuttle 822	ACE Gray Shuttle (South Sunnyvale)	Kifer & Commercial (<0.1 mi)	Southbound: 6:16AM-9.36AM Northbound: 3:09PM-6:39PM	
VTA Bus 304	South San Jose - Sunnyvale Transit Center	Arques & Wolfe (0.8 mi)	Northbound: 5:52AM-8:49AM Southbound: 3:33PM-7:07PM	Route 304 would be discontinued
VTA Bus 26	Lockheed Martin Transit Center - Eastridge via Westgate	Fair Oaks & Kifer (0.7 mi)	5:13AM-11:50PM (weekdays)	Route 26 would be broken into two routes: Route 26 and Route 56 Route 56 would serve the site
VTA Bus 55	De Anza College - Great America	Fair Oaks & Kifer (0.7 mi)	5:38AM-10:54PM (weekdays)	Route 55 would stay on Sunnyvale Avenue rather than serve Fair Oaks. Weekday frequency would decrease during commute periods from 15 minutes to 30 minutes
VTA Bus 328	Almaden Expressway & Camden - Lockheed Martin	Lawrence Expressway & Kifer (0.7 miles)	Northbound: 5:57AM-8:43AM Southbound: 4:53PM-7:14PM	Route 328 would be discontinued
VTA Bus 32	San Antonio Shopping Center - Santa Clara Transit Center	Evelyn & Wolfe (0.8 mi)	5:45AM-8:35PM (weekdays)	Route 32 would merge with route 35 and be renamed route 21

Figure 5: VTA Bus Route 304 (source: VTA)

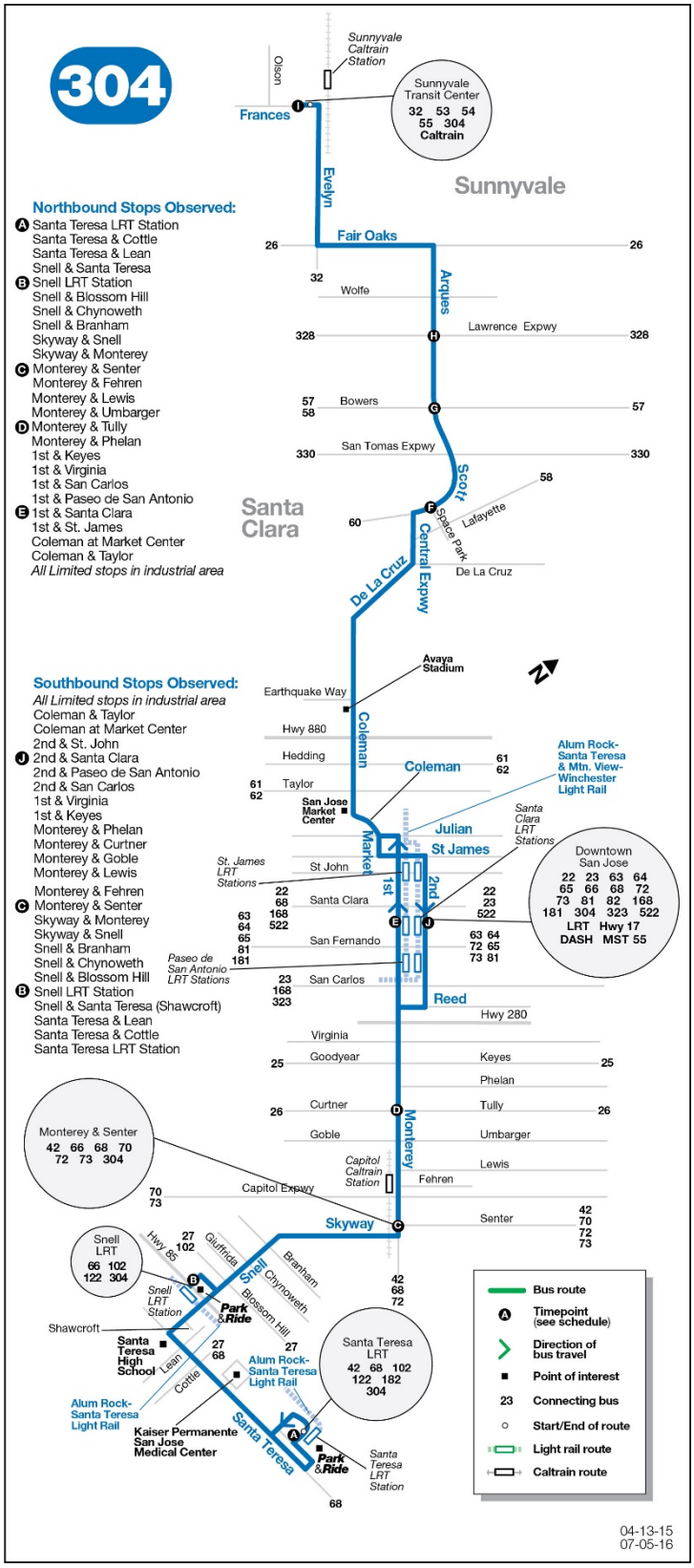


Figure 6: VTA Bus Route 26 (source: VTA)

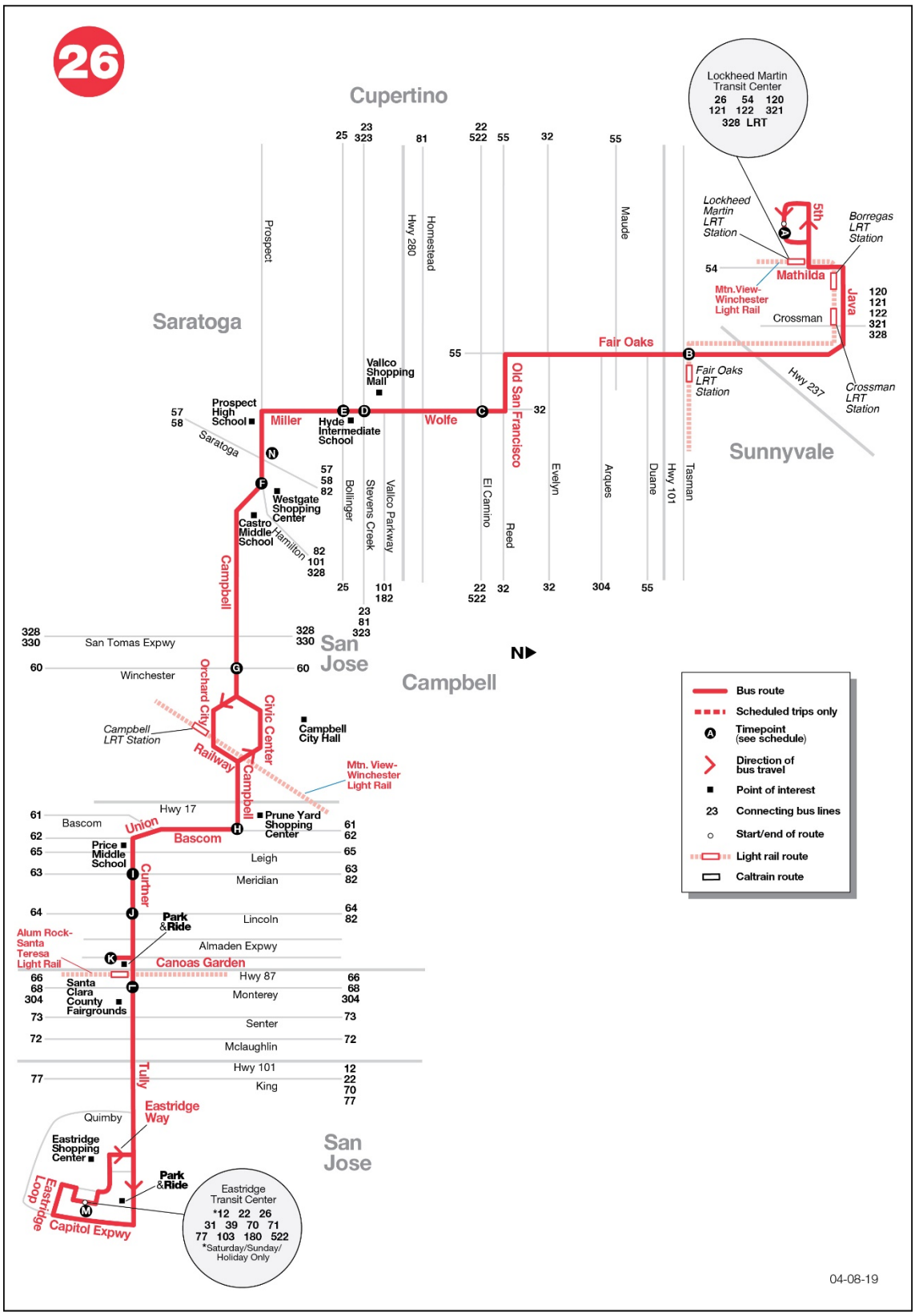


Figure 7: VTA Bus Route 55 (source: VTA)

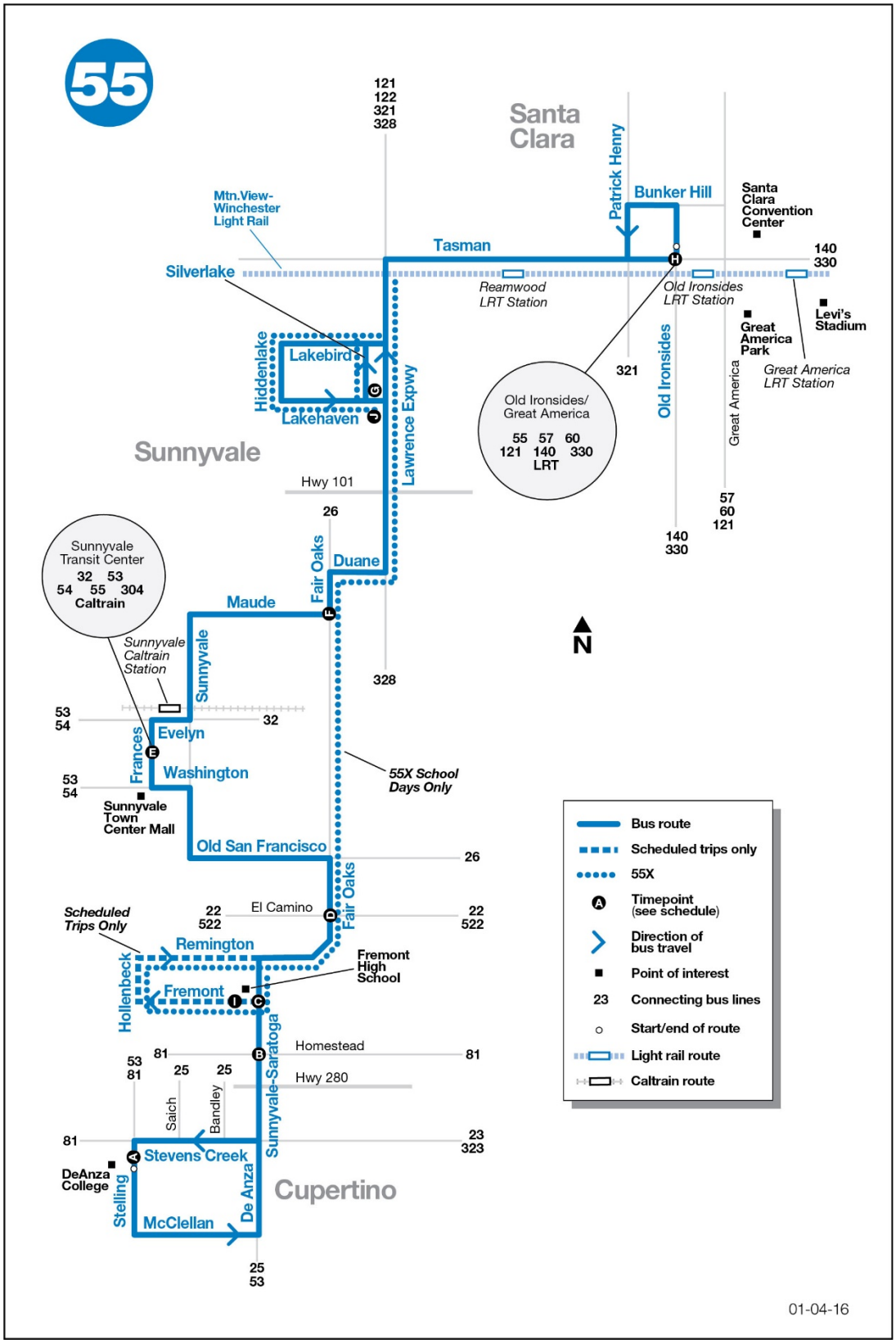


Figure 8: VTA Bus Route 328 (source: VTA)

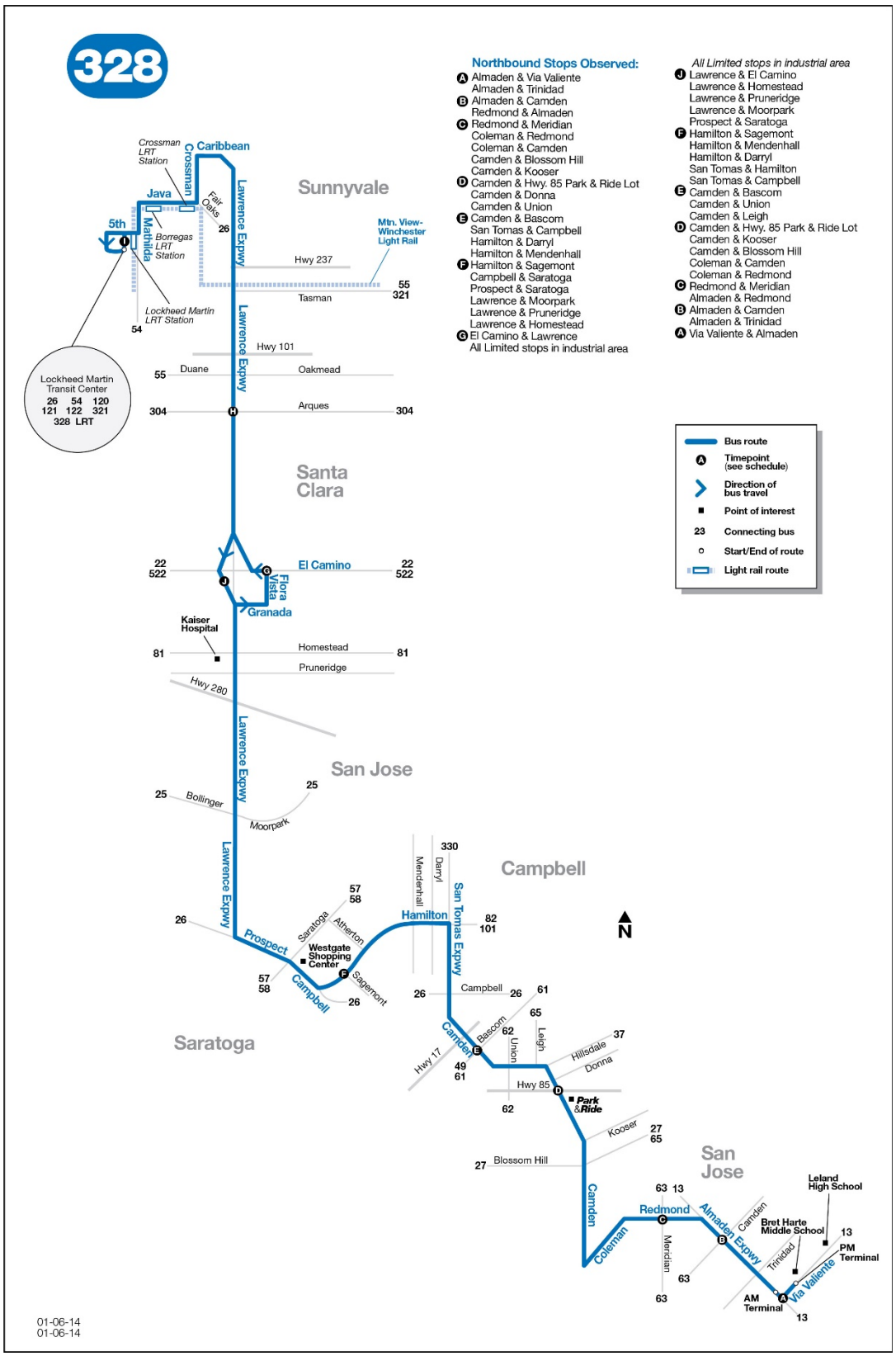
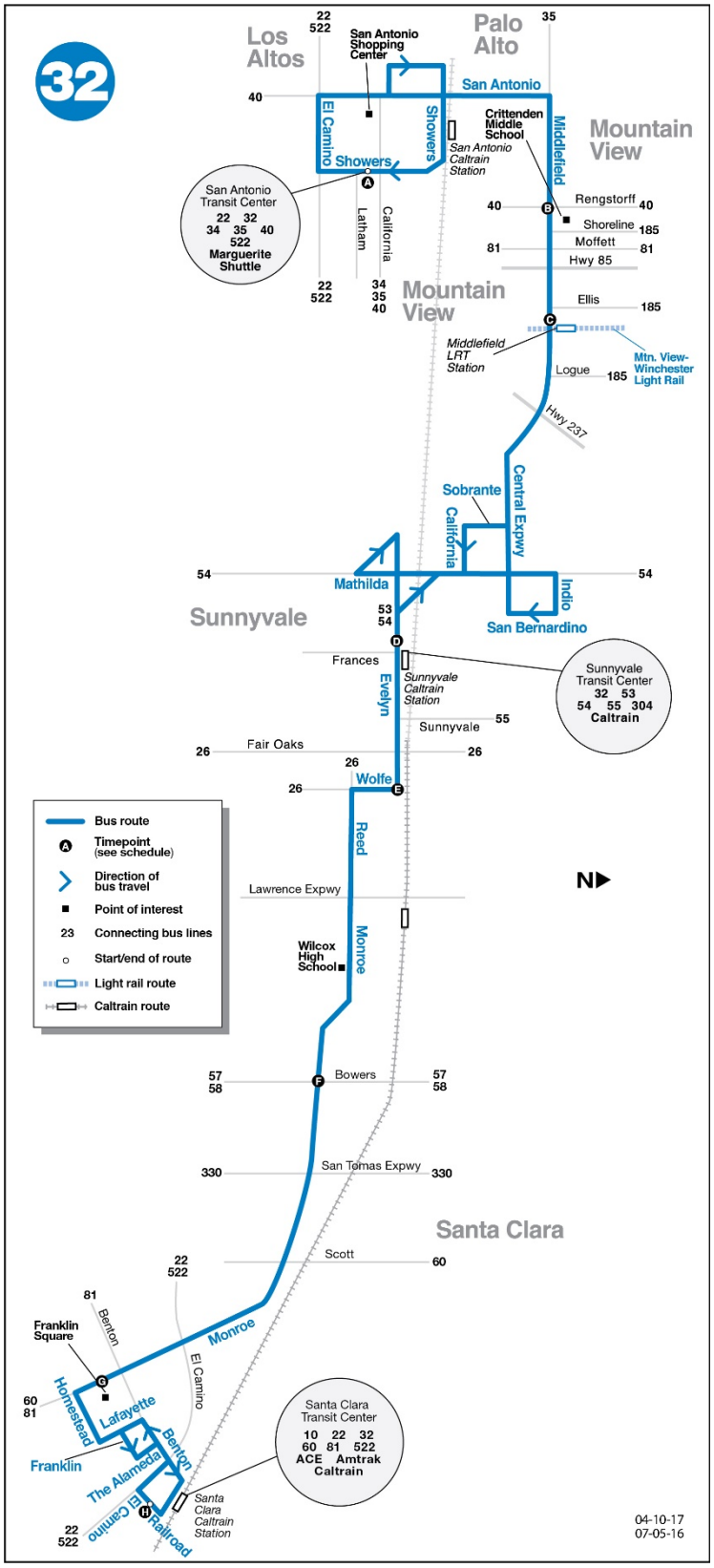


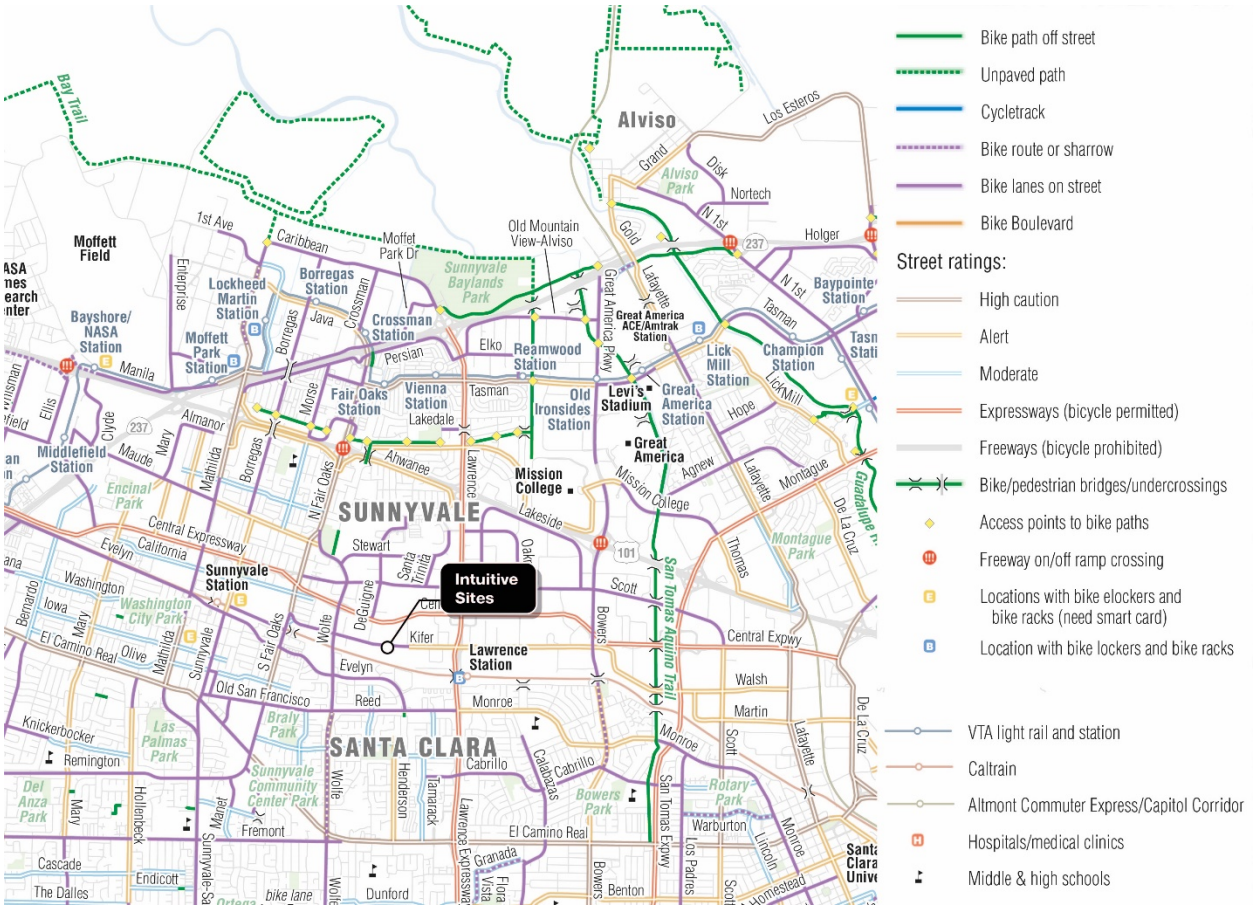
Figure 9: VTA Bus Route 32 (source: VTA)



3.2 Bicycle and Pedestrian Access

Figure 10 shows the existing bicycle paths within the vicinity of the site. Sidewalks also exist on either side of Kifer Road and crosswalks are provided at signalized intersections. The site includes a network of pedestrian and bicycle pathways to connect external facilities with internal bike parking and access. A pedestrian bridge is proposed over Kifer Road to facilitate pedestrian movement between the buildings on the north and south sites.

Figure 10: Sunnyvale Bikeways (source: Santa Clara Valley Transportation Authority)



3.3 Parking Management

The supply of parking can directly affect the behavior of commuters. As such, managing the supply and use of parking should enhance and encourage the TDM measures.

In line with City standards, to facilitate compliance with the City's TDM requirements and to encourage the use of alternative modes of travel, this project proposes to reduce required parking by 3%. Therefore 2,550 parking spaces will be provided – 822 on the north site and 1,728 on the south site.

For the north site, parking will be provided in a two-level basement underneath the office building with 31 surface parking spaces also provided in the southwest corner of the site. For the south site, parking will be provided in a five-level parking structure with 57 surface parking spaces also provided in the northwest corner of the site. Of the 2,550 parking spaces, 50 will be ADA accessible, including 11 van ADA accessible spaces, 128 for carpool and 78 for electric vehicles. Preferential parking will be made available for alternative commute modes, including carpools and electric vehicles.

Access to all of the parking will be via Kifer Road. A signalized intersection at Commercial Avenue will provide access to the south site parking. The surface parking on the north site will be accessed via a side street stop controlled intersection to the east of Commercial Avenue. Access to the main parking at the north site will be from a signalized intersection, approximately 1,200ft east of the Kifer Road / Commercial Avenue intersection.

3.4 Passenger Loading

Some employees and visitors to Intuitive Campus are expected to be dropped off at the campus or use shared ride services such as Lyft and Uber. Although convenience is important for maintaining a high-quality user experience, the campus prioritizes active mobility and safety over vehicle mobility, so dedicated drop-off areas will be provided on both the north and south site. On the north site, the drop off area will be located at the turn around in front of the building which is accessible from the side street stop controlled intersection on Kifer Road. On the south site, passenger loading will take place to the east of the building, also accessible from a side street stop controlled intersection. The drop-off areas are located adjacent to the buildings, in a location that avoids the need for passengers to cross the roadway after drop-off.

3.5 Project Amenities

The on-site amenities and services provided at Intuitive Campus reduce the number of trips that employees need to take during the day and increase the feasibility of using an alternative to driving alone. The project has plans for many on-site amenities, which include:

- Onsite showers and changing facilities
- Bicycle storage
- Onsite towel service
- Onsite dry-cleaning
- Onsite yoga
- Cafés

- Public plazas with greenery and seating
- Pedestrian and bike pathways throughout and around the site

4 Implementation Mechanism

Intuitive will be responsible for implementing the TDM programs. TDM programs shall be complete, active, and in place upon 75% building occupancy.

Upon implementation of the program, as per requirements outlined in the TDM Program Guidelines, Intuitive shall contact the City in writing to identify the designated TDM Coordinator, their contact information, occupancy date, and implementation date of the TDM plan. Such notification shall be sent to the City TDM Program.

5 Monitoring and Evaluation

Intuitive will be responsible for annual monitoring and evaluating the TDM programs. Intuitive's TDM Coordinator(s) shall produce annual reports to the City.

5.1 Preliminary Schedule

First day of business of Intuitive Campus is expected to be in the third quarter of 2022.

5.2 Acknowledgment of Annual Monitoring

Intuitive acknowledges that the City will administer monitoring beginning at 75% occupancy and agrees to pay all costs for monitoring. Monitoring could include driveway counts, intercept counts and/or employee surveys. Intuitive will agree an appropriate means of monitoring with the City before annual monitoring begins. Intuitive acknowledges that non-compliance fees will apply and recognizes that the fees are subject to change.

5.3 City TDM Program Contact Information

Mailing Address: City of Sunnyvale

Transportation Demand Program Manager

456 W. Olive Avenue

Sunnyvale, CA 94086

Phone Number: (408) 730-7415

5.4 TDM Coordinator Contact Information

The TDM Coordinator for Intuitive Campus is as follows:

Name: Cynthia Arteaga

Firm: Intuitive

Mailing Address: 1020 Kifer Road

Sunnyvale, CA 94086-5304

Email: cynthia.arteaga@intusurg.com

Phone Number: +1 408 523 2100

Appendix A

City of Sunnyvale TDM Form

DOTAT File Number: _____

CITY OF SUNNYVALE
DIVISION OF TRANSPORTATION AND TRAFFIC

TRANSPORTATION DEMAND MANAGEMENT (TDM) FORM

A Transportation Demand Management (TDM) program is the incorporation of a variety of incentives, services, and actions that influence the reduction of automobile trips in order to provide additional relief from congestion, parking and air quality impacts. Projects within the City of Sunnyvale that require the implementation of a TDM program must have a TDM Form approved by the City prior to issuance of building permits. The site and TDM coordinator contact information must be kept up to date with the City at all times; this information can be updated at any time by submitting an updated TDM Form. One TDM Form must be submitted and approved per site. Parcels sharing driveway access are to be considered a single site and single parcels with two or more separate access points are also considered a single site.

Project Information

Project Number:		Project Name:	Intuitive Campus
Project Description:			
Site Address:	North Site: 945 and 955 Kifer Road / South Site: 932 and 950 Kifer Road, Sunnyvale, CA		
Floor Area (s.f.):	North Site: 364,000 GSF / South Site: 847,000 GSF	Expected 75% Occupancy Date:	12/31/2022
Required Trip Reduction:	30 % AM, 30 % PM		

Project Applicant or Representative

Name:	Blake Reinhardt	Firm:	Intuitive
Mailing Address:	1020 Kifer Road, Sunnyvale, CA 94086-5304		
Email:	blake.reinhardt@intusurg.com	Phone Number:	(408) 523-0732

Owner

Name:	Blake Reinhardt	Firm:	Intuitive
Mailing Address:	1020 Kifer Road, Sunnyvale, CA 94086-5304		
Email:	Blake.Reinhardt@intusurg.com	Phone Number:	(408) 523-0732

TDM Coordinator Contact

Name:	Cynthia Arteaga	Firm:	Intuitive
Mailing Address:	1020 Kifer Road, Sunnyvale, CA 94086-5304		
Email:	Cynthia.Arteaga@intusurg.com	Phone Number:	(408) 523-2100

Trip Information

	Code[1]	Land Use Description[1]	Units	Unit Type[2]	AM Trips	PM Trips
Project use – 1	710	General Office Building	364	KSF	422	419
Project use – 2[3]	760	Research & Development	847	KSF	356	415
Project use – 3[3]						
Site Baseline Total					778	834
Trip Reduction Requirement					30%	30%
Maximum Allowable Average Trips					545	584

Notes:
1. All trip generation calculations shall be done per the latest version of the ITE Trip Generation Manual at the time of project approval. The edition applicable to this project is 10th Edition.
2. Unit type per ITE Trip Generation Manual (e.g. dwellings, occupied rooms, KSF)
3. Only applicable for multi-use projects.

Attachments

The following documents must be attached to this form:

❑ Site Map (Letter-size)

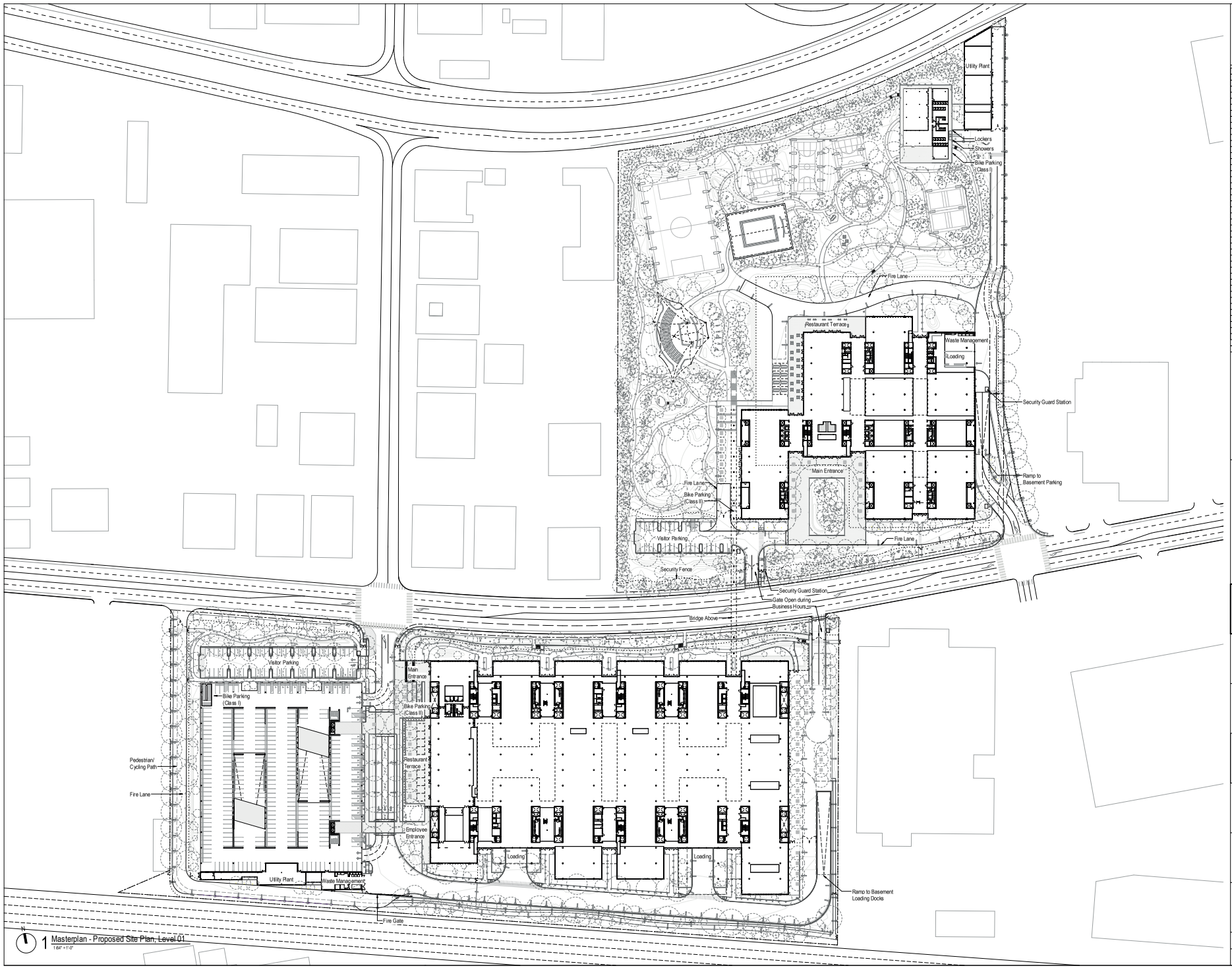
❑ Copy of Project Conditions of Approval pertaining to TDM requirements

-Because the project is still in the design stage, the Conditions of Approval are not yet available. Updated Conditions of Approval will be provided once available.

DOTAT USE ONLY

Received Date: _____ Completed Sections:
Received By: _____
Approval: ❑ Approved (Date:_____)
❑ Incomplete – Notes:

❑ Project Information
❑ Project Applicant/Representative
❑ Owner
❑ Trip Information
❑ Site Map
❑ COA's



1 Masterplan - Proposed Site Plan, Level 01
1/64" = 1'-0"

General Notes
1. Do not scale drawings. Dimensions govern.
2. All dimensions are in feet and inches unless noted otherwise.
3. All levels are in feet and inches unless noted otherwise.
4. All dimensions shall be verified on site before proceeding with the work.
5. Foster + Partners shall be notified in writing of any discrepancies.
6. Any areas indicated on this sheet are approximate and indicative only.

Rev.	Date	Reason For Issue	Chk
02	20 DEC 2019	100% Design Development	F+P
01	13 SEP 2019	50% Design Development	F+P
00	15 FEB 2019	Schematic Design	F+P

100% Design Development

Key Plan

Stamp

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BrightView
PLANNING
LANDSCAPE ARCHITECTURE
URBAN DESIGN
1715 16TH STREET
SANTA MONICA, CA 90404
(310) 828-4757

Client
Intuitive

Project
Intuitive

Title
Masterplan
Proposed Site Plan, L1
Level 01

Project No.	Date	Scale at Arch E1
2768	20 DEC 2019	1/64" = 1'-0"
Number		Revision
A-sl-011-ma-01		02

Appendix B

Parking Calculations

Site	North site			South site		
Land use	Corporate office			Manufacturing and R&D		
GSF	364,000			847,000		
Restaurant	13,000			16,000		
Adjusted GSF	351,000			831,000		
	Required parking ratio	Required number of parking spaces with 3% Reduction	Provided number of parking spaces	Required parking ratio	Required number of parking spaces with 3% Reduction	Provided number of parking spaces
Total vehicle parking (LSAP requirement)	2.75	937	822	2	1613	1728
Accessible parking spaces (includes Van-accessible parking and electric vehicle spaces)	Garage 2% of total parking	17	17	Garage 20 plus 1 for each	27	27
	Surface 1 2 per 26-50 spaces	2	2	Surface 1 3 per 51-75 spaces	3	3
	Surface 2 1 per 1-25 spaces	1	1			
Van-accessible parking spaces	Garage	3	3	Garage	5	5
	Surface 1 1 out of every 6 accessible spaces	1	1	Surface 1 1 out of every 6 accessible spaces	1	1
	Surface 2	1	1			
Carpool spaces	5% of total parking	47	47	5% of total parking	81	81
Electric vehicle spaces	3% of total parking spaces	29	29	3% of total parking spaces	49	49
	Standard ADA 1 per 26-50 EV spaces	1	1	Standard ADA 1 per 26-50 EV spaces	1	1
	Van ADA 1 per 26-50 EV spaces	1	1	Van ADA 1 per 26-50 EV spaces	1	1
Class I bicycle parking	1 per 75% of 6,000 SF	44		1 per 75% of 6,000 SF	104	
Class II bicycle parking	1 per 25% of 6,000 SF	15		1 per 25% of 6,000 SF	35	
Total bicycle parking (Class I and Class II)		59	59		139	139

Lawrence Station Area Plan Update
Transportation Impact Analysis

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Lawrence Station Area Plan Update

Transportation Impact Analysis

Prepared for:

City of Sunnyvale

August 31, 2020

Hexagon Transportation Consultants, Inc.
Hexagon Office: 4 North Second Street, Suite 400
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Hexagon Job Number: 17OZ12
Phone: 408.971.6100
Client Name: Ms. Lillian Tsang

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Executive Summary

This report presents the results of the transportation impact analysis conducted for the proposed Lawrence Station Area Plan (LSAP) Update in Sunnyvale, California. The LSAP was adopted by the Sunnyvale City Council on December 6, 2016. The City of Sunnyvale now proposes to increase housing in the LSAP area. As selected by City Council in June 2018, the preferred land use alternative would allow for a housing increase of 3,612 dwelling units within the LSAP area, increasing the total allowable housing units within the LSAP area to 5,935 units. In addition, the LSAP boundary is proposed to be expanded to include adjacent parcels owned by Intuitive Surgical (932 Kifer, 950 Kifer, 945-955 Kifer). These parcels are proposed to allow for a total of 1,280,000 gross square feet (s.f.) of commercial development (including 23,245 s.f. of amenity space and 62,000 s.f. of unoccupied storage area), resulting in 1,194,755 net s.f. of office/R&D area. The proposed gross floor area represents an increase of 1,089,444 s.f. over existing occupied conditions and 700,708 s.f. of office/R&D area over the maximum allowed office/R&D square footage under the current land use regulations for the Intuitive Surgical sites. It should be noted that the LSAP inclusion of the increased commercial development on these Intuitive Surgical parcels would not increase the overall LSAP development capacity.

This study was conducted for the purpose of determining whether the traffic impacts of the proposed LSAP-Update would create any new or substantially more adverse traffic impacts than disclosed in the certified 2016 LSAP EIR on the key intersections and freeway segments in the study area during the weekday AM (7-10 AM) and PM (4-7 PM) peak commute hours. The potential impacts of the proposed LSAP-Update were evaluated in accordance with the standards set forth by the California Environmental Quality Act (CEQA), City of Sunnyvale, and the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP). The traffic analysis is based on the AM and PM peak hour levels of service for two unsignalized intersections and 61 signalized intersections. Two of the study intersections are within the City of Cupertino, one is within the City of San Jose, and 23 are within the City of Santa Clara. 25 of the study intersections are CMP intersections. The study intersections were selected to include locations where the proposed LSAP-Update is expected to generate 10 or more peak-hour trips per lane.

Intersection Levels of Service under Year 2035 Cumulative Conditions

To determine potential impacts generated by the LSAP-Update, a separate model run was conducted assuming no growth in the LSAP area beyond the current general plan and the adopted LSAP, named the cumulative no LSAP-Update scenario. The cumulative scenario was compared to the cumulative no LSAP-update scenario to disclose impacts. Therefore, all impacted intersections identified in the cumulative scenario are generated by the update portion of the LSAP. If an impacted intersection was also identified with an impact in the original LSAP traffic analysis, the LSAP-Update is said to generate

a greater adverse impact at this intersection. The Sunnyvale Travel Demand Forecasting Model (STFM) for year 2035 was used to forecast the year 2035 cumulative traffic volumes.

The intersection levels of service results for the year 2035 cumulative conditions were compared to the Cumulative no LSAP-Update conditions to determine potential adverse intersection impacts (see Table ES-1). Some of the adversely impacted intersections were previously identified with a significant impact in the certified 2016 LSAP EIR. The LSAP-Update generated adverse impacts at these intersections would be considered substantially more severe than identified in the certified 2016 LSAP EIR.

County of Santa Clara Intersections:

- Lawrence Expressway & Cabrillo Avenue
- Lawrence Expressway & Benton Street
- Lawrence Expressway & Pruneridge Avenue

The certified 2016 LSAP EIR did not identify any significant impact at the intersections listed below, however, the LSAP-Update identifies adverse impacts at these locations. The LSAP-Update generated adverse impacts at these intersections would be considered new impacts.

City of Sunnyvale Intersections:

- Wolfe Road & Arques Avenue
- Wolfe Road & Central Expressway Ramps
- Wolfe Road & Kifer Road

Caltrans Intersections:

- Wolfe Road & El Camino Real
- San Tomas Expressway & El Camino Real

County of Santa Clara Intersections:

- Lawrence Expressway & Oakmead Parkway
- Lawrence Expressway & Arques Avenue
- Lawrence Expressway & Kifer Road
- Lawrence Expressway & Monroe Street
- Oakmead Parkway & Central Expressway
- Bowers Avenue & Central Expressway
- San Tomas Expressway & Scott Boulevard
- San Tomas Expressway & Walsh Avenue
- San Tomas Expressway & Monroe Street

City of Santa Clara Intersections:

- Bowers Avenue & Scott Boulevard
- Bowers Avenue & Kifer Road

Table ES- 1
Intersection Levels of Service Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-	**101.5**	**F**	**94.5**	**F**	**-12.6**	**-0.010**
		PM	12/13/18		60.1	E	**101.4**	**F**	**101.5**	**F**	**1.4**	**0.008**
2	Sunnyvale Avenue & Evelyn Avenue	AM	11/15/17	D	27.6	C	40.4	D	40.5	D	0.0	0.002
		PM	11/15/17		35.0	C-	39.3	D	39.3	D	0.1	0.000
3	Fair Oaks Avenue & Tasman Drive	AM	05/08/18	D	27.2	C	35.6	D+	36.2	D+	0.2	0.010
		PM	05/08/18		28.7	C	47.7	D	47.6	D	-0.1	0.000
4	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+	31.8	C	38.4	D+	14.6	0.059
		PM	05/08/18		22.8	C+	53.8	D-	54.9	D-	2.0	0.006
5	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+	23.5	C	23.4	C	-0.4	-0.006
		PM	05/08/18		13.8	B	16.6	B	16.8	B	0.0	0.005
6	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-	36.4	D+	40.5	D	7.8	0.054
		PM	05/08/18		30.2	C	38.1	D+	38.4	D+	0.5	0.003
7	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+	23.7	C	23.5	C	0.5	0.020
		PM	05/08/18		19.8	B-	18.4	B-	18.3	B-	-0.2	0.028
8	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-	**98.2**	**F**	**97.1**	**F**	**-0.9**	**-0.002**
		PM	05/08/18		44.5	D	**114.3**	**F**	**109.7**	**F**	**-13.9**	**-0.033**
9	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+	22.6	C+	23.2	C	0.1	-0.003
		PM	12/06/17		15.7	B	24.7	C	22.8	C+	-3.5	-0.029
10	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B	38.9	D+	43.2	D	6.4	0.025
		PM	05/08/18		25.9	C	32.9	C-	32.8	C-	0.6	0.006
11	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+	41.7	D	41.4	D	-0.5	-0.007
		PM	05/08/18		29.8	C	37.6	D+	36.7	D+	-1.3	-0.011
12	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-	39.8	D	40.4	D	-0.1	-0.001
		PM	05/08/18		33.7	C-	50.3	D	49.8	D	-1.3	-0.014
13	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D	58.4	E+	60.9	E	2.3	0.013
		PM	10/30/18		41.8	D	**>120**	**F**	**>120**	**F**	**1.1**	**0.002**
14	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D	65.3	E	71.0	E	11.5	0.040
		PM	10/30/18		43.6	D	**104.6**	**F**	**106.0**	**F**	**2.0**	**0.005**
15	Wolfe Road & Maude Avenue	AM	12/06/17	D	Unsignalized		33.8	C-	33.6	C-	-0.4	0.007
		PM	12/06/17		Intersection		28.9	C	29.8	C	0.7	0.031
16	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+	36.9	D+	35.2	D+	-1.2	-0.013
		PM	11/15/17		30.8	C	37.7	D+	37.7	D+	0.3	0.033
17	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+	**75.4**	**E-**	**90.6**	**F**	**31.0**	**0.077**
		PM	11/14/17		40.8	D	**68.3**	**E**	**72.6**	**E**	**6.4**	**0.029**
18	Wolfe Rd. & Central Expwy. Ramps	AM	12/06/17	D	37.2	D+	**89.8**	**F**	**116.1**	**F**	**18.8**	**0.042**
		PM	12/06/17		**71.0**	**E**	**>120**	**F**	**>120**	**F**	**26.9**	**0.060**
19	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C	**>120**	**F**	**>120**	**F**	**102.8**	**0.226**
		PM	11/14/17		43.1	D	**>120**	**F**	**>120**	**F**	**8.5**	**0.019**
20	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+	**75.8**	**E-**	**69.7**	**E**	**-8.2**	**-0.022**
		PM	11/15/17		36.5	D+	**67.7**	**E**	**67.1**	**E**	**-1.0**	**-0.002**
21	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+	**69.7**	**E**	**66.3**	**E**	**-5.1**	**-0.017**
		PM	11/14/17		38.9	D+	**55.7**	**E+**	**56.2**	**E+**	**1.5**	**0.008**

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service
BOLD and boxed indicates an adverse cumulative impact

Table ES-1 (continued)
Intersection Levels of Service Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
22	Wolfe Road & El Camino Real (*)	AM	11/14/17	E	53.5	D-	66.1	E	65.6	E	-0.5	0.008
		PM	10/30/18		46.4	D	**82.3**	**F**	**85.5**	**F**	**5.5**	**0.014**
23	Wolfe Road & Fremont Avenue	AM	11/14/17	D	43.7	D	**55.9**	**E+**	**56.0**	**E+**	**0.3**	**0.004**
		PM	11/14/17		47.5	D	**60.7**	**E**	**60.7**	**E**	**-0.6**	**-0.007**
24	Wolfe Road & Homestead Road	AM	11/14/17	D	35.4	D+	39.6	D	40.5	D	2.3	0.038
		PM	11/14/17		35.1	D+	45.4	D	45.9	D	1.1	0.006
25	Wolfe Road & I-280 NB Ramps (CU*)	AM	03/28/18	E	8.3	A	8.9	A	8.8	A	-0.1	-0.004
		PM	10/30/18		13.3	B	15.1	B	15.2	B	0.0	0.001
26	Wolfe Road & I-280 SB Ramps (CU*)	AM	03/28/18	E	13.9	B	13.9	B	13.9	B	0.0	0.000
		PM	10/30/18		7.9	A	8.8	A	8.8	A	0.1	0.000
27	Commercial Street & Kifer Road	AM	12/06/17	D	Unsignalized		10.1	B+	22.5	C+	10.2	0.232
		PM	12/06/17		Intersection		25.6	C	43.5	D	18.5	0.134
28	Evelyn Avenue & Reed Avenue	AM	11/15/17	D	10.1	B+	10.6	B+	10.6	B+	0.0	0.000
		PM	11/15/17		12.3	B	13.2	B	13.2	B	0.0	0.001
29	Lawrence Expressway & Tasman Drive (County*)	AM	05/17/18	E	45.6	D	**>120**	**F**	**>120**	**F**	**2.1**	**0.010**
		PM	11/01/18		57.0	E+	**>120**	**F**	**>120**	**F**	**-1.1**	**0.001**
30	Lawrence Expressway & Lakehaven Drive (County)	AM	05/17/18	E	**84.6**	**F**	**>120**	**F**	**>120**	**F**	**8.2**	**0.007**
		PM	05/17/18		**81.0**	**F**	**>120**	**F**	**>120**	**F**	**2.8**	**-0.001**
31	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	11.9	B+	26.8	C	29.5	C	4.2	0.014
		PM	05/23/19		14.0	B	24.4	C	23.4	C	-1.9	-0.003
32	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	7.9	A	16.0	B	13.1	B	-2.1	0.062
		PM	05/23/19		22.3	C+	79.4	E-	78.4	E-	-1.4	-0.002
33	Lawrence Expressway & Oakmead Parkway (County)**	AM	05/23/19	E	40.4	D	**>120**	**F**	**>120**	**F**	**9.3**	**0.030**
		PM	05/23/19		52.3	D-	**>120**	**F**	**>120**	**F**	**2.7**	**0.004**
34	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	48.2	D	**>120**	**F**	**>120**	**F**	**35.9**	**0.083**
		PM	11/13/18		71.6	E	**>120**	**F**	**>120**	**F**	**2.7**	**0.009**
35	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-	**>120**	**F**	**>120**	**F**	**80.8**	**0.240**
		PM	03/07/18		**101.6**	**F**	**>120**	**F**	**>120**	**F**	**18.5**	**0.033**
36	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**	**>120**	**F**	**>120**	**F**	**-75.6**	**-0.014**
		PM	11/13/18		61.8	E	**>120**	**F**	**>120**	**F**	**10.5**	**0.031**
37	Lawrence Expressway & Cabrillo Avenue (County)	AM	03/07/18	E	52.1	D-	**>120**	**F**	**>120**	**F**	**10.4**	**0.044**
		PM	03/07/18		48.6	D	**>120**	**F**	**>120**	**F**	**-2.6**	**-0.007**
38	Lawrence Expressway Ramps & El Camino Real (SC*)	AM	11/14/17	E	34.5	C-	38.7	D+	40.4	D	1.5	0.031
		PM	11/15/18		28.8	C	35.1	D+	34.1	C-	-2.4	-0.017
39	Lawrence Expressway & Benton Street (County)	AM	11/14/17	E	53.7	D-	**>120**	**F**	**>120**	**F**	**2.3**	**0.009**
		PM	11/14/17		40.5	D	**>120**	**F**	**>120**	**F**	**-1.5**	**0.033**
40	Lawrence Expressway & Homestead Road (County*)	AM	11/14/17	E	56.8	E+	**>120**	**F**	**>120**	**F**	**-11.3**	**-0.018**
		PM	11/15/18		65.9	E	**>120**	**F**	**>120**	**F**	**1.2**	**0.011**
41	Lawrence Expressway & Pruneridge Avenue (County)	AM	11/14/17	E	61.2	E	**>120**	**F**	**>120**	**F**	**8.5**	**0.035**
		PM	11/14/17		43.8	D	**>120**	**F**	**>120**	**F**	**1.0**	**-0.003**
42	I-280 SB Off-Ramp & Stevens Creek Boulevard (SC*)	AM	11/15/17	E	27.0	C	36.6	D+	37.3	D+	1.2	0.014
		PM	11/15/18		35.0	C-	43.2	D	44.3	D	1.7	0.006

Notes:
** = CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service
BOLD and boxed indicates an adverse cumulative impact

Table ES-1 (continued)
Intersection Levels of Service Summary

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
43	Lawrence Expressway SB Ramps & Stevens Creek Boulevard (SC*)	AM	05/10/18	E	25.9	C	29.2	C	29.5	C	0.3	0.003
		PM	11/15/18		26.1	C	32.0	C	31.7	C	-0.4	-0.009
44	Lawrence Expressway NB Ramps & Stevens Creek Boulevard (SC*)	AM	11/15/17	E	32.7	C-	44.5	D	43.1	D	-1.9	-0.014
		PM	11/15/18		28.0	C	31.6	C	31.6	C	-0.2	-0.003
45	Lawrence Expressway & I-280 SB On-Ramp (SJ*)	AM	11/15/17	E	53.0	D-	**119.6**	**F**	**>120**	**F**	**3.5**	**0.003**
		PM	11/15/18		42.1	D	76.3	E-	80.0	E-	6.6	0.012
46	Oakmead Parkway & Scott Boulevard	AM	11/15/17	D	22.7	C+	23.5	C	24.6	C	2.7	0.061
		PM	11/15/17		31.0	C	29.5	C	29.5	C	-0.7	-0.012
47	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	46.1	D	48.8	D	55.4	E+	12.1	0.042
		PM	11/13/18		49.7	D	66.9	E	**87.4**	**F**	**39.7**	**0.102**
48	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A	11.1	B+	17.0	B	7.9	0.235
		PM	11/15/17		9.0	A	9.6	A	13.5	B	4.8	0.155
49	Calabazas Boulevard & Monroe Street (SC)	AM	12/14/17	D	10.3	B+	8.9	A	8.9	A	0.1	0.027
		PM	11/15/17		3.2	A	2.7	A	2.7	A	0.0	0.001
50	Great America Parkway & Tasman Drive (SC*)	AM	03/07/18	E	42.7	D	**91.9**	**F**	**89.3**	**F**	**-5.8**	**-0.014**
		PM	11/15/18		28.4	C	**>120**	**F**	**>120**	**F**	**-17.6**	**-0.028**
51	Great America Parkway & US 101 NB Ramps (SC*)	AM	11/15/17	E	8.9	A	14.3	B	14.2	B	-0.6	-0.007
		PM	11/15/18		10.0	A	15.3	B	15.2	B	-0.1	0.000
52	Bowers Avenue & US 101 SB Ramps (SC*)	AM	11/15/17	E	15.2	B	21.9	C+	22.5	C+	1.9	0.038
		PM	11/15/18		7.6	A	12.0	B	12.9	B	1.0	0.014
53	Bowers Avenue & Scott Boulevard (SC*)	AM	11/15/17	E	39.5	D	**>120**	**F**	**>120**	**F**	**-4.6**	**0.000**
		PM	11/15/18		36.1	D+	**>120**	**F**	**>120**	**F**	**7.8**	**0.018**
54	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D	**>120**	**F**	**>120**	**F**	**42.4**	**0.078**
		PM	11/13/18		53.8	D-	**>120**	**F**	**>120**	**F**	**7.1**	**0.020**
55	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C	48.4	D	**64.3**	**E**	**29.9**	**0.086**
		PM	03/07/18		28.6	C	50.1	D	53.1	D-	-1.7	-0.001
56	Bowers Avenue & Monroe Street (SC)	AM	11/15/17	D	32.6	C-	33.6	C-	33.3	C-	0.2	-0.005
		PM	11/15/17		34.1	C-	**55.7**	**E+**	53.3	D-	-2.5	-0.004
57	Kiely Boulevard & El Camino Real (SC*)	AM	11/15/17	E	29.9	C	35.4	D+	39.0	D	5.6	0.037
		PM	11/15/18		30.4	C	55.7	E+	58.8	E+	4.6	0.013
58	San Tomas Expressway & Scott Boulevard (County*)	AM	11/15/17	E	39.7	D	**>120**	**F**	**>120**	**F**	**-47.6**	**0.010**
		PM	11/13/18		50.7	D	**108.5**	**F**	**109.5**	**F**	**4.2**	**0.008**
59	San Tomas Expressway & Walsh Avenue (County)	AM	11/15/17	E	49.0	D	**>120**	**F**	**>120**	**F**	**44.8**	**0.114**
		PM	03/07/18		77.9	E-	**>120**	**F**	**>120**	**F**	**-0.1**	**-0.027**
60	San Tomas Expressway & Monroe Street (County*)	AM	11/15/17	E	49.6	D	**>120**	**F**	**>120**	**F**	**-7.9**	**0.022**
		PM	11/08/18		38.5	D+	70.3	E	72.2	E	4.3	0.016
61	San Tomas Expressway & El Camino Real (County*)	AM	11/28/17	E	58.9	E+	**>120**	**F**	**>120**	**F**	**7.5**	**0.041**
		PM	11/08/18		71.3	E	**107.1**	**F**	**99.2**	**F**	**-0.4**	**0.061**
62	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B	19.9	B-	19.2	B-	-1.2	0.002
		PM	09/11/18		9.4	A	18.8	B-	19.5	B-	0.9	0.053
63	1020 Kifer Rd Driveway & Kifer Road	AM	01/00/00	D	Future Signal		20.0	B-	20.2	C+	0.3	0.020
		PM	01/00/00				28.9	C	34.9	C-	7.4	0.112

Notes:
** = CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service
BOLD and boxed indicates an adverse cumulative impact

Potential Improvement Strategies for Intersection Impacts

Improvement options were studied for each intersection experiencing impacts under the year 2035 cumulative conditions when compared to cumulative no LSAP-Update conditions. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to Cumulative no LSAP-Update conditions. Potential improvement strategies are shown in Table ES-2.

Table ES- 2
Potential Improvement Strategies for Intersection Impacts

#	Intersection	Potential Improvement	Notes
17	Wolfe Road & Arques Avenue	Restripe the northbound approach to include 2 left-turn lanes, 2 through lanes and 1 dedicated right-turn lane. Restripe the westbound approach to include 2 left-turn lanes, 1 shared left-through lane and 1 shared through-right lane. Operate eastbound and westbound approaches with split phasing.	Improvement would require moving the northbound bike lane to the west side of the proposed right-turn lane. This improvement conflicts with the Sunnyvale Active Transportation Plan and therefore is not feasible.
18	Wolfe Road & Central Expressway Ramps	Widen both eastbound and westbound Central Expressway off-ramps to include one left-turn lane, one shared through-left lane and one right-turn lane.	Improvement would require lengthening the respective crosswalks by up to 12 feet. The off-ramps are in County's jurisdiction, so the City cannot ensure the implementation of the potential improvement.
19	Wolfe Road & Kifer Road	The improvement at this intersection is to widen all approaches up to 12 feet to include a second left-turn lane.	Right-of-way acquisition would be required. The LSAP shall require projects within the plan area to contribute a fair share contribution towards the identified improvements.
22	Wolfe Road & El Camino Real	The Sunnyvale City Council approved a concept on June 21, 2016 for a project to improve the Wolfe Road intersections with El Camino Real and with Fremont Avenue, as well as signalizing the intersection at Fremont Avenue and El Camino Real. Bicycle improvements include the extension of bike lanes and installation of bike boxes, and they are detailed in the *Wolfe Road Corridor Traffic Improvement Study* , prepared by Kimley-Horn dated February 2016.	Right-of-way acquisition would be required. This improvement (Triangle – Refined Alternative 3) would require signal coordination between the two Wolfe Road intersections and the new signalized Fremont Avenue and El Camino Real intersection. Modification to this intersection will trigger modifications at the Wolfe Road and Fremont Avenue intersection and the Fremont Avenue and El Camino Real intersection as well. Therefore, the LSAP shall require projects within the plan area to contribute a fair share contribution towards the identified improvements at all three intersections.
33	Lawrence Expressway & Oakmead Parkway	The County of Santa Clara has identified a future project to provide a grade separation at this intersection.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of this grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.
34, 35, 36	Lawrence Expressway at Arques Avenue, at Kifer Road, and at Monroe Street	The County of Santa Clara has identified a future project to provide a grade separation at this intersection.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of this grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.
37, 39, 41	Lawrence Expressway at Cabrillo Avenue, at Benton Street, and at Pruneridge Avenue	The County of Santa Clara has identified a future project to provide a grade separation at all these intersections.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of these grade separations. These intersections are under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

Table ES-2 (continued)
Potential Improvement Strategies for Intersection Impacts

#	Intersection	Potential Improvement	Notes
47	Oakmead Parkway & Central Expressway	Widen westbound Central Expressway to include two left-turn lanes.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.
53	Bowers Avenue & Scott Boulevard	Widen southbound Bowers Avenue to include a second southbound left-turn lane.	This intersection is in City of Santa Clara's jurisdiction, so the City cannot ensure the implementation of the potential improvement.
54	Bowers Avenue & Central Expressway	The County of Santa Clara has identified a future project to provide a grade separation at this intersection.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.
55	Bowers Avenue & Kifer Road	Widen eastbound Kifer Road to include a second eastbound left-turn lane.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the identified improvement. However, the intersection is in City of Santa Clara's jurisdiction, so the City cannot ensure the implementation of the potential improvement.
58, 60, 61	San Tomas Expressway at Scott Boulevard, at Monroe Street and at El Camino Real	The County of Santa Clara has identified a future project to provide a grade separation at all these intersections.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of these grade separations. These intersections are under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.
59	San Tomas Expressway at Walsh Avenue	A grade separation would be required at this intersection.	The LSAP shall require projects within the plan area to contribute their fair share towards the cost of this grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection.

LSAP-Update Freeway Impact Analysis

VTA CMP guidelines define that a project would cause a freeway impact if the project deteriorates freeway levels of service from an acceptable level to an unacceptable level, or if the freeway already operates at an unacceptable level under existing conditions, the project would add traffic exceeding 1% of the freeway capacity. The LSAP-Update would have an adverse impact on the following freeway segments.

Mixed Flow Lanes – AM Peak Hour

- US 101, northbound from Lawrence Expressway to Embarcadero Road
- US 101, southbound from Oregon Expressway to San Antonio Road
- US 101, southbound from Moffett Boulevard to Ellis Street
- SR 237, eastbound from Great America Parkway to North First Street
- SR 237, westbound from I-880 to Lawrence Expressway
- I-880, northbound from SR 237 to Dixon Landing Road

- I-880, southbound from Dixon Landing Road to SR 237
- I-880, southbound from Tasman Drive to Montague Expressway

HOV Lanes – AM Peak Hour

- US 101, northbound from Lawrence Expressway to Mathilda Avenue
- US 101, northbound from Ellis Street to SR 85

Mixed-Flow Lanes – PM Peak Hour

- US 101, southbound from San Antonio Road to Lawrence Expressway

HOV Lanes – PM Peak Hour

- US 101, southbound from SR 85 to Lawrence Expressway
- US 101, southbound from Montague Expressway to SR 87
- SR 237, westbound from North First Street to Lawrence Expressway

The VTA's Valley Transportation Plan (VTP) 2040 identifies freeway express lane projects along US 101 between Cochrane Road and Whipple Avenue, along SR 237 between N. First Street and SR 85, and along I-880 between the Alameda County Line and US 101. On all identified freeway segments, the existing HOV lanes are proposed to be converted to express lanes. On US 101 along the identified segments, a second express lane is proposed to be implemented for a total of two express lanes in each direction.

On SR 237 and I-880, the existing HOV lanes would be operating over capacity under the year 2035 cumulative conditions. Converting the HOV lanes to express lanes would not mitigate LSAP-Update's impact. On US 101, converting the existing HOV lane to an express lane and adding an express lane in each direction would increase the capacity of the freeway and would adequately address the freeway impacts. The LSAP shall require future projects within the proposed plan area to participate in VTA's Volunteer Freeway Contribution Program and contribute their fair share towards the US 101 Express Lane Project to fund improvements along US 101.

However, capacity improvements on freeways are beyond the capabilities of the City of Sunnyvale. Furthermore, freeways are under Caltrans jurisdiction. It should be noted that both US 101 and SR 237 were identified with impacts under the *Lawrence Station Area-Wide Transportation Plan and Near-Term Final TIA,* dated December 2015, while I-880 was not studied in that report. Therefore, freeway impacts generated by the LSAP-Update on US 101 and SR 237 constitute a substantially more severe freeway impact compared to the original LSAP plan.

Freeway Ramp Capacity Analysis

For the purpose of this study, the LSAP-Update is said to create an adverse impact on a freeway ramp if its implementation:

- Would cause the volume-to-capacity (V/C) ratio of the freeway ramp to exceed 1.0; or
- Would increase the amount of traffic on a freeway ramp that is already exceeding its capacity by more than one percent (1%) of the ramp's capacity.

The freeway ramp volumes under year 2035 cumulative conditions were estimated using the Sunnyvale Travel Demand Forecast Model. All study freeway ramps would continue to operate below capacity.

LSAP Impacts to Transit Facilities

It is expected that the LSAP-Update would increase the number of Caltrain riders. Several trains currently operate at or near capacity. The Caltrain electrification project would enable Caltrain to provide more frequent train service at the Lawrence Caltrain station. Caltrain predicts an initial capacity increase of over 30%. It is expected that the Caltrain electrification project would accommodate the potential increase in transit ridership generated by the LSAP-Update. It is assumed that if the free shuttle service becomes full, employers would increase their funding for the service as required by their TDM requirements or as a part of their commuter benefits and additional shuttles would be provided to meet the demand.

The adopted LSAP plan established five policies to support public transit within the plan area. The implementation of these policies would enhance the travel experience for transit riders within the LSAP plan area, and potentially enhance and/or increase transit services to the plan area.

Transit Travel Times

The results show that all studied transit routes under year 2035 cumulative conditions are expected to experience increased route travel times ranging from 1 minute to 3 minutes compared to existing conditions. The City of Sunnyvale and the VTA do not have adopted standards related to transit corridor performance associated with congestion resulting from new development projects. Per the VTA TIA Guidelines (dated October 2014), *if increased transit vehicle delay is found, the Lead Agency [City of Sunnyvale] should work with VTA to identify feasible transit priority measures near the affected facility and include contributions to any applicable projects that improve transit speed and reliability in the TIA.* Projects within the LSAP study area would be required to pay a fair share contribution to any feasible priority measures near the affected facility.

LSAP Impacts to Pedestrian Facilities

The adopted LSAP plan established 12 policies to provide safe, inviting, and attractive pedestrian connections to Lawrence Station and other key destinations in the Plan area. Along with the implementation of all 12 pedestrian policies, the LSAP would close existing sidewalk gaps, build new pedestrian connections, enhance pedestrian intersection crossings, enhance pedestrian comfort-level on sidewalks, improve pedestrian connections to the Lawrence Caltrain Station, and enhance pedestrian facilities to be functional for all types of users. The conceptual LSAP Sense of Place Plan shows implementation of these policies, which will require new development in the area to implement improvements to the existing pedestrian facilities, and build a new loop road and Class I multi-use trail with direct pedestrian access to the Lawrence Caltrain Station.

LSAP Impacts to Bicycle Facilities

The adopted LSAP plan identifies various bicycle facility improvements to close the gaps in the existing and planned bicycle network. The conceptual LSAP Sense of Place Plan shows implementation of these improvements and will require new development in the area to implement improvements to existing bicycle facilities and construct new facilities as described below. The LSAP-Update also includes additional bicycle facility improvements. The entire list of proposed bicycle improvements is provided in the Sense of Place Plan.

- Calabazas Creek Trail: New Class I multi-use trail in the City of Santa Clara in alignment with Calabazas Creek.
- New Class I multi-use trail from Aster Avenue and extending across the railroad tracks to Sonora Court with a grade-separated pedestrian/bicycle track crossing.

- New Class II bicycle lanes on Kifer Road east of Lawrence Expressway.

In addition to the proposed bicycle facilities within the LSAP plan area, the adopted LSAP plan also identified seven bicycle policies to encourage the use of bicycles for local and inter-neighborhood access. Along with the implementation of all seven bicycle policies, the LSAP-Update plan would build new bicycle connections east-west across Lawrence Expressway and north-south across the rail tracks and improve bicycle connections to the Lawrence Caltrain Station. The LSAP-Update also proposes a new east-west Class I multi-use trail from either end of the LSAP boundaries, north of the tracks. The trail would be located on private property, as properties redevelop. The adopted LSAP includes a new loop road to connect Corvin Drive (east of Lawrence Expressway) and Semiconductor Drive (west of Lawrence Expressway) to the Caltrain station. The loop road would include Class II bike lanes and would be built on private property, as properties redevelop.

Projects within the LSAP study area would be required to pay their fair share contribution towards bicycle improvements or construct, as applicable.

1. Introduction

This report presents the results of the transportation impact analysis conducted for the proposed Lawrence Station Area Plan (LSAP)-Update in Sunnyvale, California (see Figure 1). The LSAP was adopted by the Sunnyvale City Council on December 6, 2016. The City of Sunnyvale now proposes to increase housing in the LSAP area. As selected by the City Council in June 2018, the preferred land use alternative would allow for a housing increase of 3,612 dwelling units within the LSAP area, increasing the total allowable housing units within the LSAP area to 5,935 units. In addition, the LSAP boundary is proposed to be expanded to include adjacent parcels owned by Intuitive Surgical (932 Kifer, 950 Kifer, 945-955 Kifer). These parcels are proposed to allow for a total of 1,280,000 gross square feet (s.f.) of commercial development (including 23,245 s.f. of amenity space and 62,000 s.f. of unoccupied storage area), resulting in 1,194,755 net s.f. of office/R&D area. The proposed gross floor area represents an increase of 1,089,444 s.f. over existing occupied conditions and 700,708 s.f. of office/R&D area over the maximum allowed office/R&D square footage under the current land use regulations for the Intuitive Surgical sites. It should be noted that the LSAP inclusion of the increased commercial development on these Intuitive Surgical parcels would not increase the overall LSAP development capacity.

Scope of Study

This study was conducted for the purpose of determining whether the traffic impacts of the proposed LSAP-Update would create any new or substantially more adverse traffic impacts than disclosed in the certified 2016 LSAP EIR on the key intersections and freeway segments in the study area during the weekday AM (7-10 AM) and PM (4-7 PM) peak commute hours. The potential impacts of the proposed LSAP-Update were evaluated in accordance with the standards set forth by the California Environmental Quality Act (CEQA), City of Sunnyvale, and the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP). The traffic analysis is based on the AM and PM peak hour levels of service for two unsignalized intersections and 61 signalized intersections. Two of the study intersections are within the City of Cupertino, one is within the City of San Jose, and 23 are within the City of Santa Clara. Twenty-five of the study intersections are CMP intersections. The study intersections were selected to include locations where the LSAP-Update is expected to generate 10 or more peak-hour trips per lane.

The Santa Clara County VTA CMP guidelines require that the CMP freeway segments be evaluated to determine the impact of added traffic for projects that generate trips equal to or greater than one percent of the freeway segment's capacity. The proposed LSAP-Update is expected to generate added traffic volume on multiple freeway segments along US 101, SR 237 and I-880. The traffic analysis also includes a capacity analysis for ten freeway ramps.

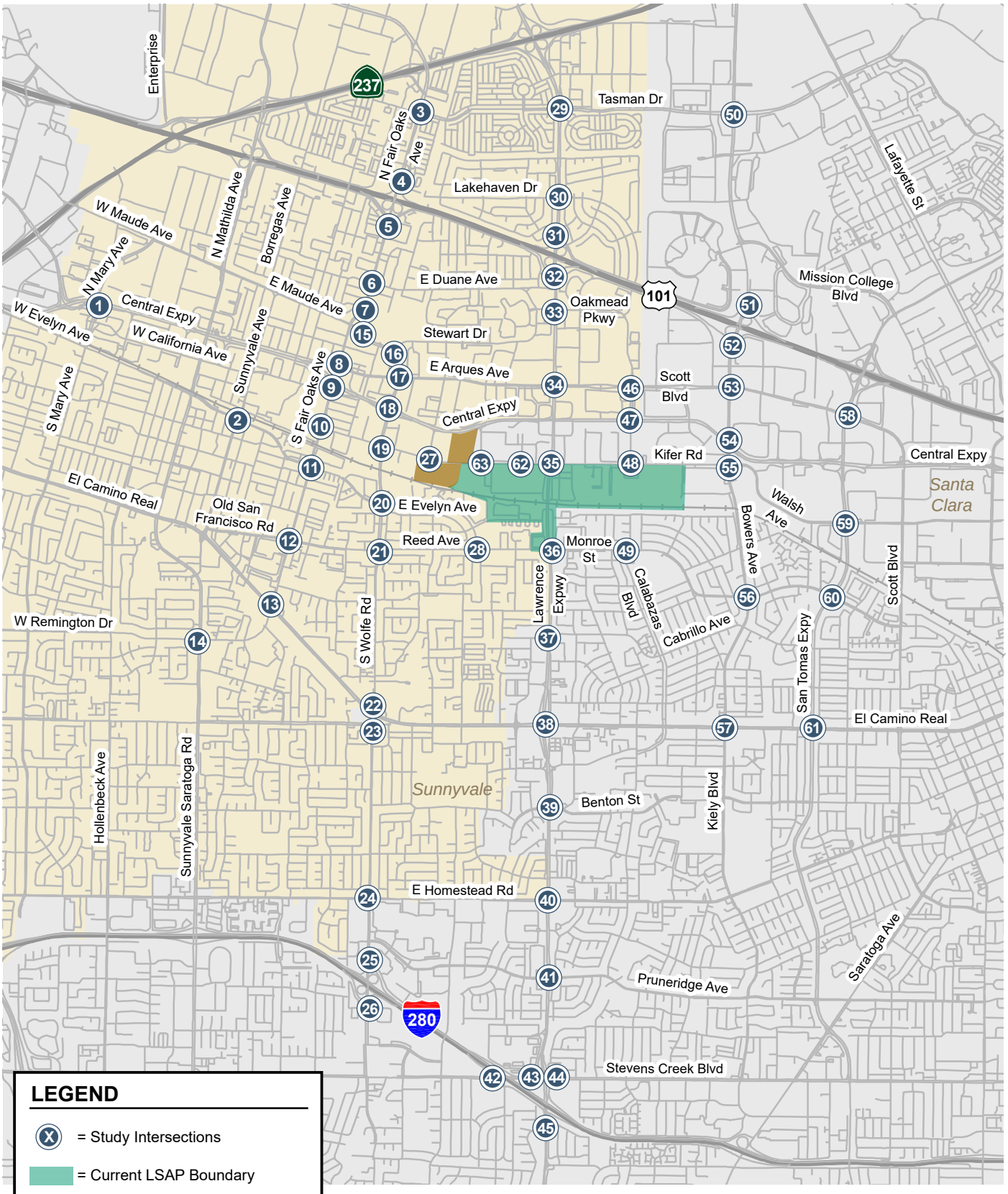


Figure 1
Plan Area and Study Intersections

Study Intersections

1. Mary Avenue & Central Expressway *
2. Sunnyvale Avenue & Evelyn Avenue
3. Fair Oaks Avenue & Tasman Drive
4. Fair Oaks Avenue & US 101 Northbound Ramps
5. Fair Oaks Avenue & Ahwanee Avenue
6. Fair Oaks Avenue & Duane Avenue
7. Fair Oaks Avenue & Wolfe Road
8. Fair Oaks Avenue & Arques Avenue
9. Fair Oaks Avenue & California Avenue
10. Fair Oaks Avenue & Kifer Road
11. Fair Oaks Avenue & Evelyn Avenue
12. Fair Oaks Avenue & Old San Francisco Road
13. Fair Oaks Avenue & El Camino Real *
14. Sunnyvale-Saratoga Road & Remington Drive *
15. Wolfe Road & Maude Avenue (unsignalized)
16. Wolfe Road & Stewart Drive
17. Wolfe Road & Arques Avenue
18. Wolfe Road & Central Expressway Ramps
19. Wolfe Road & Kifer Road
20. Wolfe Road & Evelyn Avenue
21. Wolfe Road & Reed Avenue
22. Wolfe Road & El Camino Real *
23. Wolfe Road & Fremont Avenue
24. Wolfe Road & Homestead Road
25. Wolfe Road & I-280 Northbound Ramps (Cupertino) *
26. Wolfe Road & I-280 Southbound Ramps (Cupertino) *
27. Commercial Street & Kifer Road (unsignalized)
28. Evelyn Avenue & Reed Avenue
29. Lawrence Expressway & Tasman Drive *
30. Lawrence Expressway & Lakehaven Drive
31. Lawrence Expressway & US 101 Northbound Ramps
32. Lawrence Expressway & US 101 Southbound Ramps
33. Lawrence Expressway & Oakmead Parkway
34. Lawrence Expressway & Arques Avenue *
35. Lawrence Expressway & Kifer Road
36. Lawrence Expressway & Reed Avenue/Monroe Street *
37. Lawrence Expressway & Cabrillo Avenue (Santa Clara)
38. Lawrence Expressway & El Camino Real Ramps (Santa Clara) *
39. Lawrence Expressway & Benton Street (Santa Clara)
40. Lawrence Expressway & Homestead Road (Santa Clara) *
41. Lawrence Expressway & Pruneridge Avenue (Santa Clara)
42. I-280 Southbound Off-Ramp & Stevens Creek Boulevard (Santa Clara) *
43. Lawrence Expressway Southbound Ramps & Stevens Creek Boulevard (Santa Clara) *
44. Lawrence Expressway Northbound Ramps & Stevens Creek Boulevard (Santa Clara) *
45. Lawrence Expressway & I-280 Southbound On-Ramp (San Jose) *
46. Oakmead Parkway & Arques Avenue
47. Oakmead Parkway & Central Expressway (Santa Clara) *
48. Corvin Drive & Kifer Road (Santa Clara)
49. Calabazas Boulevard & Monroe Street (Santa Clara)

50. Great America Parkway & Tasman Drive (Santa Clara) *
51. Great America Parkway & US 101 Northbound Ramps (Santa Clara) *
52. Bowers Avenue & US 101 Southbound Ramps (Santa Clara) *
53. Bowers Avenue & Scott Boulevard (Santa Clara) *
54. Bowers Avenue & Central Expressway (Santa Clara) *
55. Bowers Avenue & Kifer Road/Walsh Avenue (Santa Clara)
56. Bowers Avenue & Monroe Street (Santa Clara)
57. Bowers Avenue/Kiely Boulevard & El Camino Real (Santa Clara) *
58. San Tomas Expressway & Scott Boulevard (Santa Clara) *
59. San Tomas Expressway & Walsh Avenue (Santa Clara)
60. San Tomas Expressway & Monroe Street (Santa Clara) *
61. San Tomas Expressway & El Camino Real (Santa Clara) *
62. Semiconductor Drive/Santa Vittoria Terrace & Kifer Road
63. Planned West Driveway at 1020 Kifer Road & Kifer Road [Future Intersection]

* Denotes CMP intersections

Freeway Segments

1. US 101 between SR 87 and Embarcadero Road
2. SR 237 between Lawrence Expressway and I-880
3. I-880 between Montague Expressway and Dixon Landing Road

Study Freeway Ramps

US 101 and Fair Oaks Avenue Interchange

1. Southbound On-Ramp from Northbound Fair Oaks Avenue
2. Northbound Off-Ramp to Fair Oaks Avenue
3. Northbound On-Ramp from Fair Oaks Avenue
4. Southbound Off-Ramp to Southbound Fair Oaks Avenue

US 101 and Lawrence Expressway Interchange

5. Southbound On-Ramp from Northbound Lawrence Expressway
6. Northbound Off-Ramp to Lawrence Expressway
7. Northbound On-Ramp from Northbound Lawrence Expressway
8. Southbound Off-Ramp to Lawrence Expressway

SR 237 and Lawrence Expressway Interchange

9. Eastbound On-Ramp from Northbound Lawrence Expressway
10. Westbound Off-Ramp to Southbound Lawrence Expressway

Traffic conditions at the study intersections were analyzed for both the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour is expected to occur between 7:00 AM and 10:00 AM and the PM peak hour is expected to occur between 4:00 PM and 7:00 PM on a regular weekday. These are the peak commute hours during which most traffic congestion occurs on the roadways.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: ***Existing Conditions.*** Existing traffic volumes at study intersections were based on traffic counts conducted in 2017 through 2019, as well as the 2018 CMP TRAFFIX database. The study intersections were evaluated with a level of service analysis using TRAFFIX software in accordance with the *2000 Highway Capacity Manual* methodology. Study freeway segments were analyzed in accordance with the VTA CMP method, and study freeway ramps were analyzed using demand to capacity ratios.

Scenario 2: ***2035 Cumulative Conditions.*** The 2035 cumulative conditions traffic volumes were estimated using the Sunnyvale Traffic Demand Forecast Model for year 2035. In addition to land uses assumed under the current General Plan, the cumulative conditions include the proposed LSAP-Update, the proposed El Camino Real Specific Plan, the proposed Fortinet Master Plan, and the proposed Downtown Specific Plan Update. To determine potential impacts generated by the update portion of the LSAP, a separate model run was conducted assuming no growth in the LSAP study area beyond the current general plan and adopted LSAP. The cumulative scenario was compared to the cumulative no-LSAP-Update scenario to disclose impacts. If an impact was identified in the original LSAP traffic study, the LSAP-Update is said to generate a greater adverse impact.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from previous traffic counts, the City of Sunnyvale, the VTA CMP TRAFFIX database, and field observations. The following data were collected from these sources:

- existing traffic volumes,
- existing lane configurations, and
- signal timing and phasing.

Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

Signalized Study Intersections

All City of Sunnyvale, San Jose, Cupertino, and Santa Clara level of service analysis methodologies for signalized intersections are the *Highway Capacity Manual* (HCM) 2000 operations method. This method is applied using the TRAFFIX software. The HCM 2000 operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated traffic impact analysis tool, the City of Sunnyvale employs the CMP default values for the analysis parameters within the software.

The Cities of Sunnyvale, San Jose, Cupertino, and Santa Clara level of service standards for signalized intersections are all LOS D or better. Within the City of Sunnyvale, intersections on roadways considered to be "regionally significant" have a standard of LOS E. In the study area, signalized intersections within Sunnyvale along El Camino Real, Sunnyvale-Saratoga Road, Central Expressway and Lawrence Expressway are considered regionally significant. The correlation between average control delay and level of service is shown in Table 1.

CMP Intersections

The designated level of service analysis methodology for the CMP is also the HCM 2000 operations method for signalized intersections, using TRAFFIX. The CMP level of service standard for signalized intersections within the City of Sunnyvale, San Jose, Cupertino and Santa Clara is LOS E or better.

Table 1
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though many still pass through the	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major-contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *Highway Capacity Manual 2000* (Washington, D.C., 2000) p10-16.

Unsignalized Study Intersections

The level of service for the unsignalized intersections was evaluated using the 2000 HCM methodology. Level of service for unsignalized (stop-controlled and yield controlled) intersections is evaluated based on the delay experienced by vehicles on the controlled approaches. For two-way or T-intersections, operations are defined by the average control delay experienced by the worst approach. For all-way stop controlled intersections, the level of service is reported based on the average delay for all approaches. The City of Sunnyvale General Plan level of service standard for unsignalized intersections is LOS D or better.

The correlation between delay and level of service for unsignalized intersections is shown in Table 2.

Table 2
Unsignalized Intersection Level of Service Based on Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Little or no traffic delay	10.0 or less
B	Short Traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *Highway Capacity Manual 2000* (Washington, D.C., 2000) p17-2.

Traffic Signal Warrant Analysis

An assessment of the need for signalization was conducted for unsignalized study intersections. For this study, the need for signalization was assessed on the basis of the peak hour volume signal warrant (Warrant #3) described in the 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD). This method provides an indication of whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify the installation of a traffic signal. It should be noted that it is just one of the factors/warrants used to indicate whether installation of a traffic control signal is justified.

Freeway Segments

Within Santa Clara County, freeway segments are analyzed as prescribed in the Santa Clara County CMP technical guideline. The level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

Where:

D = density, in vehicles per mile per lane (vpmpl)
V = peak hour volume, in vehicle per hour (vph)
N = number of travel lanes
S = average travel speed, in miles per hour (mph)

The vehicle density on a segment is correlated to level of service as shown in Table 3. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from high-occupancy vehicle (HOV) lanes (otherwise known as carpool lanes). The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments three lanes or wider in one direction, and a capacity of 2,200 vphpl be used for segments two lanes wide in one direction. HOV lanes are specified as having a capacity of 1,650 vphpl.

Table 3
Freeway Segment Level of Service Definition

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	11.0 or less
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	11.0 to 18.0
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	18.0 to 26.0
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	26.0 to 46.0
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	46.0 to 58.0
F	Vehicular flow breakdowns occurs. Large queues form behind breakdown points.	greater than 58.0

Source: Santa Clara County Valley Transportation Authority, Transportation Impact Analysis Guidelines, Updated March 2009 (Based on the *Highway Capacity Manual (2000), Washington, D.C.)*

Freeway Ramps

A freeway ramp analysis was performed in order to verify that the freeway ramps would have sufficient capacity to serve the expected traffic volumes with and without the project. This analysis consisted of a volume-to-capacity ratio evaluation of the freeway ramps at the study interchanges. The ramp capacities were obtained from the *Highway Capacity Manual 2000*, and considered the free-flow speed, number of lanes on the ramp, and ramp metering.

Report Organization

The remainder of this report is divided into two chapters. Chapter 2 describes the existing roadway network, transit services, and pedestrian facilities. Chapter 3 presents the traffic conditions in the LSAP study area under the year 2035 cumulative conditions, the project impacts on the transportation system, and any recommended improvement measures.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the LSAP study area, including the roadway network, transit service, pedestrian and bicycle facilities.

Existing Roadway Network

The proposed Lawrence Station Area Plan (LSAP) study area comprises approximately 319 acres adjacent to the Lawrence Caltrain Station, with properties within ½ mile radius of the station generally included in the study area. Regional access to the study area is provided by US 101 to the north, I-280 to the south and SR 85 and SR 237 to the west. These facilities are described below.

US 101 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction) within the vicinity of Sunnyvale. LSAP study area access to and from US 101 is provided via its interchanges at Fair Oaks Avenue, Lawrence Expressway, and Bowers Avenue.

I-280 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction) within the vicinity of Sunnyvale. I-280 provides regional freeway access between the cities of San Francisco and San Jose. LSAP study area access to and from I-280 is provided via its interchanges at Wolfe Road, Stevens Creek Boulevard, and Lawrence Expressway.

SR 237 is a four-lane to six-lane freeway within the vicinity of Sunnyvale that extends west to El Camino Real and east to I-880 in Milpitas. East of Mathilda Avenue, SR 237 has two mixed-flow lanes and one HOV lane in each direction. West of Mathilda Avenue, SR 237 has two mixed-flow lanes in each direction. LSAP study area access to and from SR 237 is provided via its interchanges at Fair Oaks Avenue and Lawrence Expressway.

SR 85 is a six-lane freeway (two mixed-flow lanes and one HOV lane in each direction) that begins at the US 101 interchange east of Shoreline Boulevard, extends south towards San Jose and terminates at the US 101 interchange south of Silicon Valley Boulevard/Bernal Road. LSAP study area access to and from SR 85 is provided via interchanges with Fremont Avenue and El Camino Real.

Major roadways within or near the LSAP study area include El Camino Real, Lawrence Expressway, Central Expressway, San Tomas Expressway, Mary Avenue, Mathilda Avenue, Sunnyvale Avenue, Fair Oaks Avenue, Wolfe Road, Bowers Avenue, Evelyn Avenue, Remington Drive, Fremont Avenue, Reed Avenue and Monroe Street, Kifer Road, Arques Avenue, and Tasman Drive.

El Camino Real is a six-lane divided arterial that extends from Mission Street in Colma to The Alameda in Santa Clara. Within the vicinity of Sunnyvale, El Camino Real has a posted speed limit of 40 miles per hour (mph). Sidewalks are present along both sides of the roadway, and all major signalized intersections have crosswalks and pedestrian push buttons and signal heads across all legs. Bike lanes are present between Fair Oaks Avenue and Sunnyvale Avenue. On-street parking is permitted along certain segments of the roadway. El Camino Real provides regional access to the LSAP study area via its interchange with Lawrence Expressway, as well as its intersections with Wolfe Road and Bowers Avenue.

Lawrence Expressway is a north-south, eight-lane expressway with a raised median and a posted speed limit of 50 mph. It begins at Saratoga Avenue in the south, crosses through Sunnyvale, and extends northward and transitions into Caribbean Drive. HOV lanes are present between Stevens Creek Boulevard and Oakmead Parkway. Lawrence Expressway connects with US 101 via full-access freeway interchanges. Lawrence Expressway includes sidewalks along both sides on most segments and crosswalks at signalized intersections. There are no bike lanes on Lawrence Expressway, but bikes are allowed to ride on the shoulders. On-street parking is not permitted on this roadway. Lawrence Expressway provides regional access to the LSAP study area via its interchanges with SR 237, US 101, Central Expressway and I-280.

Central Expressway is an east-west, four-lane to six-lane expressway. It begins at Trimble Road in the east, crosses Sunnyvale, extends westward and transitions into Alma Street. In the study area, Central Expressway has two eastbound lanes and two westbound lanes and a posted speed limit of 50 mph. Central Expressway is mostly grade-separated within Sunnyvale except at Mary Avenue. The Mary Avenue intersection has crosswalks with pedestrian push buttons and signal heads across all legs. There are no sidewalks or bike lanes along Central Expressway, but bikes are allowed to ride on the shoulders. On-street parking is not permitted on this roadway. Central Expressway has intersections at Mary Avenue, Oakmead Parkway, and Bowers Avenue, and interchanges at Mathilda Avenue, Fair Oaks Avenue, Wolfe Road and Lawrence Expressway.

San Tomas Expressway is a north-south, six-lane to eight-lane expressway with a raised median and a posted speed limit of 45 mph. It begins at Camden Avenue in the south, crosses through Santa Clara, and extends northward and transitions into Montague Expressway. HOV lanes are present between Winchester Boulevard and Central Expressway. San Tomas Expressway connects with US 101 via full-access freeway interchanges. There are sidewalks on both sides of the roadway along certain segments and crosswalks at signalized intersections. There are no bike lanes on San Tomas Expressway, but bikes are allowed to ride on the shoulders. The San Tomas Aquino Creek Trail is a shared bicycle and pedestrian trail located along the west side of San Tomas Expressway. It extends from Homestead Road to Monroe Street, where it diverts to follow the San Tomas Aquino Creek. On-street parking is not permitted on this roadway. San Tomas Expressway provides regional access to the LSAP study area via its interchanges with US 101 and Central Expressway.

Mary Avenue is a north-south, two-lane to six-lane roadway with a posted speed limit of 35 to 40 mph. It extends from Almanor Avenue south to Homestead Road. Mary Avenue has sidewalks and bike lanes along both sides throughout Sunnyvale. Intersections with major roadways have crosswalks, pedestrian push buttons, and signal heads. On-street parking is generally permitted along the roadway segments within the residential neighborhood. Mary Avenue provides regional access to the study area via its intersection with Central Expressway.

Mathilda Avenue/Sunnyvale-Saratoga Road is a north-south, six-lane roadway with a posted speed limit of 35 to 45 mph. It extends from E. Caribbean Drive (north of US 237) south past El Camino Real, transitions to Sunnyvale-Saratoga Road and extends south into Cupertino and Saratoga. There are sidewalks on both sides of the street for the whole length of the roadway with crosswalks, pedestrian push buttons, and signal heads at all major intersections. Bike lanes are generally present along Mathilda Avenue north of Iowa Avenue. Bike lanes are present along Mathilda Avenue/Sunnyvale-Saratoga Road south of El Camino Real. On-street parking is permitted along certain segments of the roadway. Mathilda Avenue provides regional access to the LSAP study area via its interchanges with US 101 and Central Expressway and its intersections with Remington Drive and El Camino Real.

Sunnyvale Avenue is a north-south, two-lane roadway with a posted speed limit of 30 mph. It extends from E. Maude Avenue south to El Camino Real. Sunnyvale Road has sidewalks on both sides of the roadway through all segments with crosswalks, pedestrian push buttons, and signal heads at all major intersections. Bike lanes are present along Sunnyvale Avenue south of Evelyn Avenue. On-street parking is permitted along certain segments of the roadway

Fair Oaks Avenue is a north-south, four-lane to six-lane roadway with a posted speed limit of 30 mph. It extends from SR 237 to El Camino Real and transitions into Remington Drive. Sidewalks exist on both sides for most of the segments along with crosswalks, pedestrian push buttons, and signal heads at all major intersections. Bike lanes are present along Fair Oaks Avenue between Evelyn Avenue and Kifer Road, as well as south of Old San Francisco Road. On-street parking is generally permitted north of Old San Francisco Road. Fair Oaks Avenue provides regional access to the LSAP study area via its interchanges with SR 237, US 101 and Central Expressway.

Wolfe Road is a four-lane to six-lane, north-south arterial that begins north at N. Fair Oaks Avenue, and extends south into the City of Cupertino, ending at Stevens Creek Boulevard (its transition point into Miller Avenue). Wolfe Road has a posted speed limit of 35 mph in the study area. Wolfe Road includes sidewalks along most segments on both directions of travel and crosswalks at signalized intersections. Bike routes or lanes are present along Wolfe Road for its entirety. On-street parking is permitted along only certain segments of the roadway. Wolfe Road provides regional access to the LSAP study area via its interchanges with Central Expressway and I-280.

Bowers Avenue is a four-lane to six-lane, north-south arterial with a posted speed limit of 35 to 40 mph. It begins as Kiely Boulevard south of El Camino Real and transitions into Great America Parkway at US 101. Bowers Avenue includes sidewalks along both directions of travel and crosswalks at signalized intersections. Bike routes or lanes are present along both directions of Bowers Avenue as well. On-street parking is permitted between Chromite Drive and Donovan Avenue. Bowers Avenue provides regional access to the LSAP study area via its interchange with US 101 and intersection with Central Expressway.

Tasman Drive is a two-lane to four-lane roadway with a posted speed limit of 40 mph in the project vicinity. Tasman Drive begins at Morse Avenue in the west and extends east past I-880 and transitions into Great Mall Parkway. The VTA Light Rail tracks are present in the middle of Tasman Drive east of Fair Oaks Avenue. Tasman Drive includes sidewalks along some segments on both directions of travel and crosswalks at signalized intersections. Bike routes or lanes are provided within the project vicinity. Tasman Drive provides regional access to the LSAP study area via its intersections with Fair Oaks Avenue and Lawrence Expressway.

Arques Avenue is a two-lane to four-lane roadway with a posted speed limit of 35 mph in the project vicinity. Arques Avenue begins at Stowell Avenue in the west and extends east past San Tomas Expressway and transitions into Scott Boulevard. Arques Avenue connects with Central Expressway via a westbound on-ramp and an eastbound off-ramp. Arques Avenue connects with Lawrence Expressway via a traffic signal. Sidewalks are present along both sides of the street between Wolfe Road and Lawrence Expressway and along the north side between Fair Oaks Avenue and Wolfe Road. Bike lanes are provided east of Fair Oaks Avenue.

Kifer Road is a four-lane roadway within the project vicinity with a posted speed limit of 40 miles per hour (mph). Kifer Road begins at Fair Oaks Avenue in the west and extends east towards Bowers Avenue, where it transitions into Walsh Avenue. Kifer Road has a center two-way left-turn median along the entirety of the roadway. On-street parking is prohibited on both sides of Kifer Road within the project vicinity. In the study area, Kifer Road includes sidewalks along some segments of the roadway and crosswalks at the nearby signalized intersections. Bike lanes are provided on both sides of Kifer Road between Fair Oaks Avenue and Lawrence Expressway and between Corvin Drive and Uranium Drive. Bike lanes are present on the south side of Kifer Road between the Costco Driveway and Corvin Drive, mainly due to construction on the north side. Kifer Road provides direct access to the project site.

Reed Avenue/Monroe Street is a two-lane to four-lane roadway with a posted speed limit of 35 mph in the project vicinity. Reed Avenue/Monroe Street begins west at Wolfe Road as Reed Avenue and extends southeast towards its terminus at Tisch Way in the City of San Jose. Reed Avenue is within the City of Sunnyvale, and transitions to Monroe Street in the City of Santa Clara at its intersection with Lawrence Expressway (Sunnyvale-Santa Clara city boundary). Reed Avenue/Monroe Street has a center two-way left-turn lane that runs along the entirety of the roadway. In the study area, on-street parking is permitted on the north side of Reed Avenue between Wolfe Road and Sitka Terrace, along portions of both sides between Evelyn Avenue and Timberpine Avenue, and along the south side between Timberpine Avenue and Willow Avenue. On Monroe Street, on-street parking is permitted on both sides east of Nobili Avenue. Sidewalks are present along both sides of the street. Bike lanes are provided on both sides of Reed Avenue between Sunnyvale Avenue and Lawrence Expressway and on the north side of Monroe Street between Lawrence Expressway and Nobili Avenue.

Evelyn Avenue is a two-lane to four-lane roadway that begins west at Castro Street in the City of Mountain View and extends east to its terminal at Reed Avenue in the City of Sunnyvale. Within Sunnyvale, Evelyn Avenue generally includes two travel lanes and a center two-way left-turn lane and has a posted speed limit of 30 mph in the study area. Evelyn Avenue includes sidewalks and bicycle lanes on both directions of travel and crosswalks at signalized intersections. On-street parking is permitted along most segments of this roadway.

Remington Drive is an east-west, two-lane to four-lane roadway with a posted speed limit of 35 mph that begins west at S Bernardo Avenue and ends at El Camino Real before transitioning into Fair Oaks Avenue. It has bike lanes and sidewalks along both directions of the roadway on all segments and has crosswalks, pedestrian push buttons, and signal heads at major intersections. On-street parking is permitted west of Sunnyvale-Saratoga Road.

Fremont Avenue is an east-west, two-lane to six-lane roadway with a posted speed limit of 30 mph that begins west along Foothill Expressway in Los Altos and ends as it joins El Camino Real. It has bike lanes along the full length of the roadway. There are sidewalks on both sides of the roadway along some segments and there are crosswalks, pedestrian push buttons, and signal heads at major intersections. On-street parking is not permitted on this roadway. Fremont Avenue provides regional access to the LSAP study area via its interchange with SR 85.

Existing Bicycle Facilities

Bicycle facilities in the vicinity of the LSAP study area include bike lanes and bike routes. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are streets that accommodate bicycles with pavement markings and signage but are not separate from the travel lanes.

The existing bicycle facilities in the study area are shown on Figure 2. The following bicycle facilities exist within the immediate vicinity of the LSAP study area:

Bike Lanes:

- Kifer Road between Fair Oaks Avenue and Lawrence Expressway, and between the Costco Driveway and Uranium Drive
- Fair Oaks Avenue between Evelyn Avenue and Kifer Road
- Evelyn Avenue
- Reed Avenue/Old San Francisco Road between Sunnyvale Avenue and Lawrence Expressway
- Wolfe Road between Reed Avenue and Fair Oaks Avenue
- Arques Avenue/Scott Boulevard between Central Expressway and Fair Oaks Avenue
- Oakmead Parkway between Lawrence Expressway and Central Expressway
- Stewart Drive between Duane Avenue and Wolfe Road
- Duane Avenue between Fair Oaks Boulevard and AMD Place
- DeGuigne Drive/Commercial Street between Duane Avenue and Central Expressway
- Bowers Avenue between Great America Parkway and Chromite Drive
- Aster Avenue between E. Evelyn Avenue and Willow Avenue

Bike routes are present along Wolfe Road between Fremont Avenue and Reed Avenue, on Fair Oaks Avenue between Tasman Drive and Weddell Drive, between Ahwanee Avenue to Kifer Road, and between Evelyn Avenue to Old San Francisco Road, and on Bowers Avenue between El Camino Real and Chromite Drive. According to the *City of Sunnyvale Bike Map, 2018 Edition*, there are three guided bike routes within the City. Each guided route is briefly described below and shown on Figure 2:

- Bike Route 352: This is a generally north-south bike route that extends north from the southern City limits into the Moffett Park area. North of El Camino Real, this route travels along Sunnyvale Avenue until Evelyn Avenue and transitions into Bike Route 353 (described below). South of El Camino Real, this bike route zigzags along local roadways west of Sunnyvale-Saratoga Road, providing access to Fremont High School and Nimitz Elementary School.

- Bike Route 353: This is a generally north-south bike route that extends north from the southern City limits into the Moffett Park area. South of Evelyn Avenue, this route transitions into Bike Route 352 (described above). North of Evelyn Avenue, this route travels mostly along Morse Avenue south of US 101 and along Borregas Avenue north of US 101. Bike Route 353 provides access to Bishop Elementary School and Columbia Middle School.

- Bike Route 600: This is a generally east-west bike route that extends east from the intersection at Bernardo Avenue and El Camino Real and ending east at Poinciana Drive. This route travels parallel and north of El Camino Real along residential roadways (mainly Olive Avenue, Gail Avenue, Iris Avenue and Lily Avenue). This route provides access to the Civic Center, Ellis Elementary School, Braly Elementary School and Ponderosa Elementary School.

Overall, the existing bicycle facilities in the LSAP study area provide adequate connections for bicycles. However, certain segments of Kifer Road east Lawrence Expressway are missing bicycle facilities. Additionally, San Zeno Way, Lawrence Station Road, and Willow Avenue do not provide bicycle facilities, which would otherwise connect the Lawrence Caltrain Station to the surrounding areas.

Existing Pedestrian Facilities

Within the immediate vicinity of the LSAP study area, sidewalks and crosswalks are present along most sections of roadways. As shown on Figure 3, sidewalks and crosswalks are missing along only selected sections of the roadways. Along Kifer Road, which is the roadway fronting the majority of the LSAP study area, sidewalk is mostly missing on both sides of the street west of the LSAP boundary and on the north side near Corvin Drive. Sidewalk is also missing along certain segments of Corvin Drive, Oakmead Parkway, Arques Avenue, north side on Aster Avenue, and fronting the Greystar (1120 Kifer Road) construction site, the Lawrence Station Development construction site, and the Nuevo construction site. Pedestrian crosswalks and signal heads are present at the nearby signalized intersections. Currently, sidewalks along Kifer Road are generally six feet wide. According to the City's current General Plan Land Use and Transportation Element, Kifer Road, which is a Commercial/Industrial Corridor, should have sidewalks with a width of 11 feet. The current sidewalk widths along Kifer Road do not comply with General Plan standards.

Existing Transit Service

Existing transit services in the vicinity of the Lawrence Station Area Plan (LSAP) study area are provided by Caltrain, VTA, and ACE. Bus routes that are serving the LSAP study area are described in Table 4 and shown on Figure 4.

Table 4
Existing Transit Services

Bus Route	Route Description	Nearest Bus Stops	Weekday Hours of Operation	Headway
Local Route 21	Sunnyvale Transit Center to Milpitas Transit Center	Lawrence Expressway & Reed Avenue	5:30 AM - 10:00 PM	30 min
Frequent Route 57	Old Ironsides Station to West Valley Community College	Bowers Avenue & Kifer Road	5:30 AM - 11:00 PM	15 min
ACE Gray Line	Kifer/Oakmead Village to Great America ACE Amtrak Station	Commercial Street & Kifer Road, 1050 Kifer Road, San Ysidro Way & Kifer Road, Copper Road & Kifer Road, 1450 Kifer Road	6:15 AM - 9:45 AM 3:20 PM - 6:40 PM	60 min
Mission College Shuttle	Lawrence Caltrain Station to Mission area office buildings	Lawrence Caltrain Station	6:20 AM - 9:45 AM 3:20 PM - 6:40 PM	30 - 75 min
Bowers/Walsh Shuttle	Lawrence Caltrain Station to Bowers area office buildings	Lawrence Caltrain Station	7:15 AM - 9:55 AM 3:15 PM - 6:45 PM	35 - 80 min

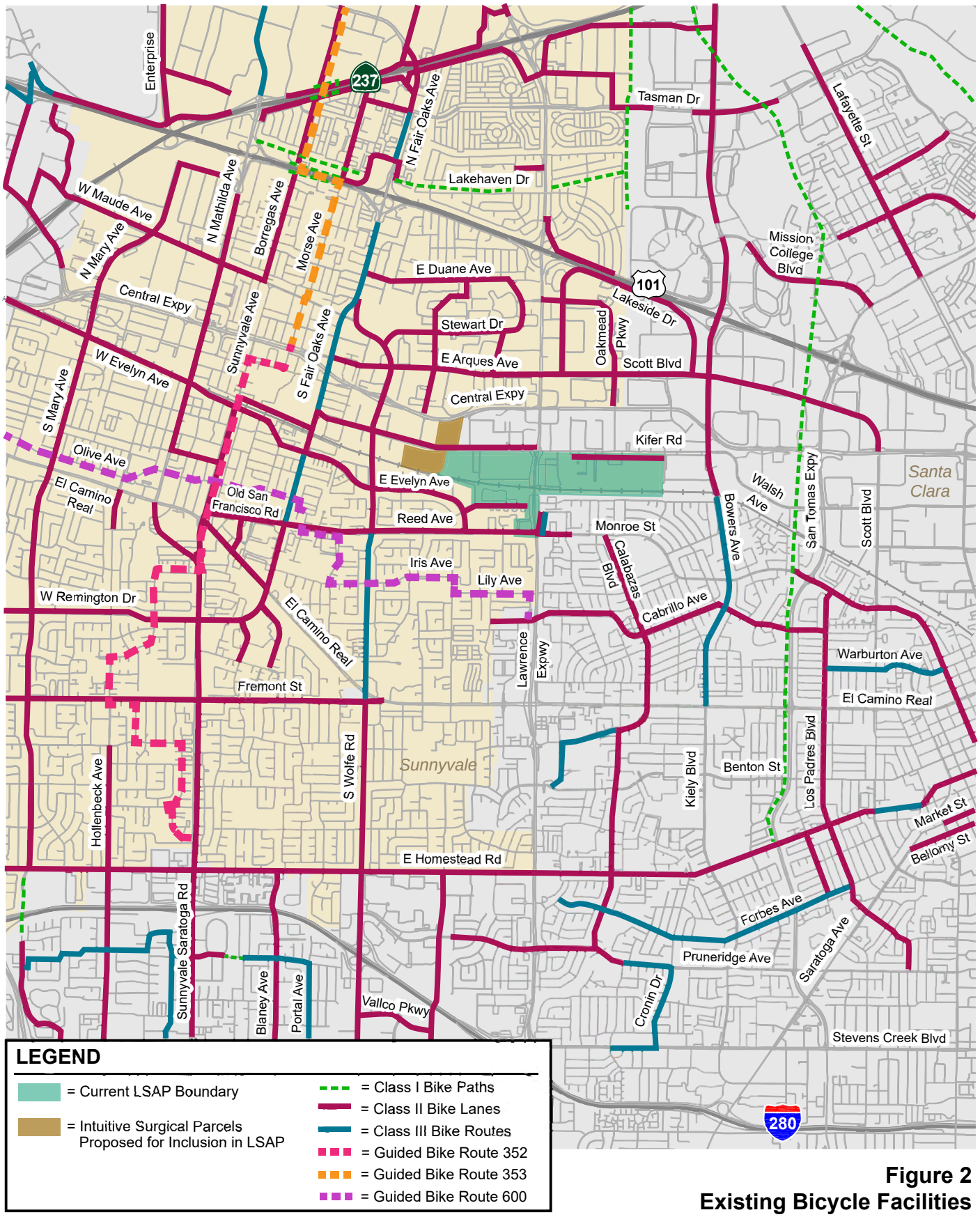


Figure 2
Existing Bicycle Facilities

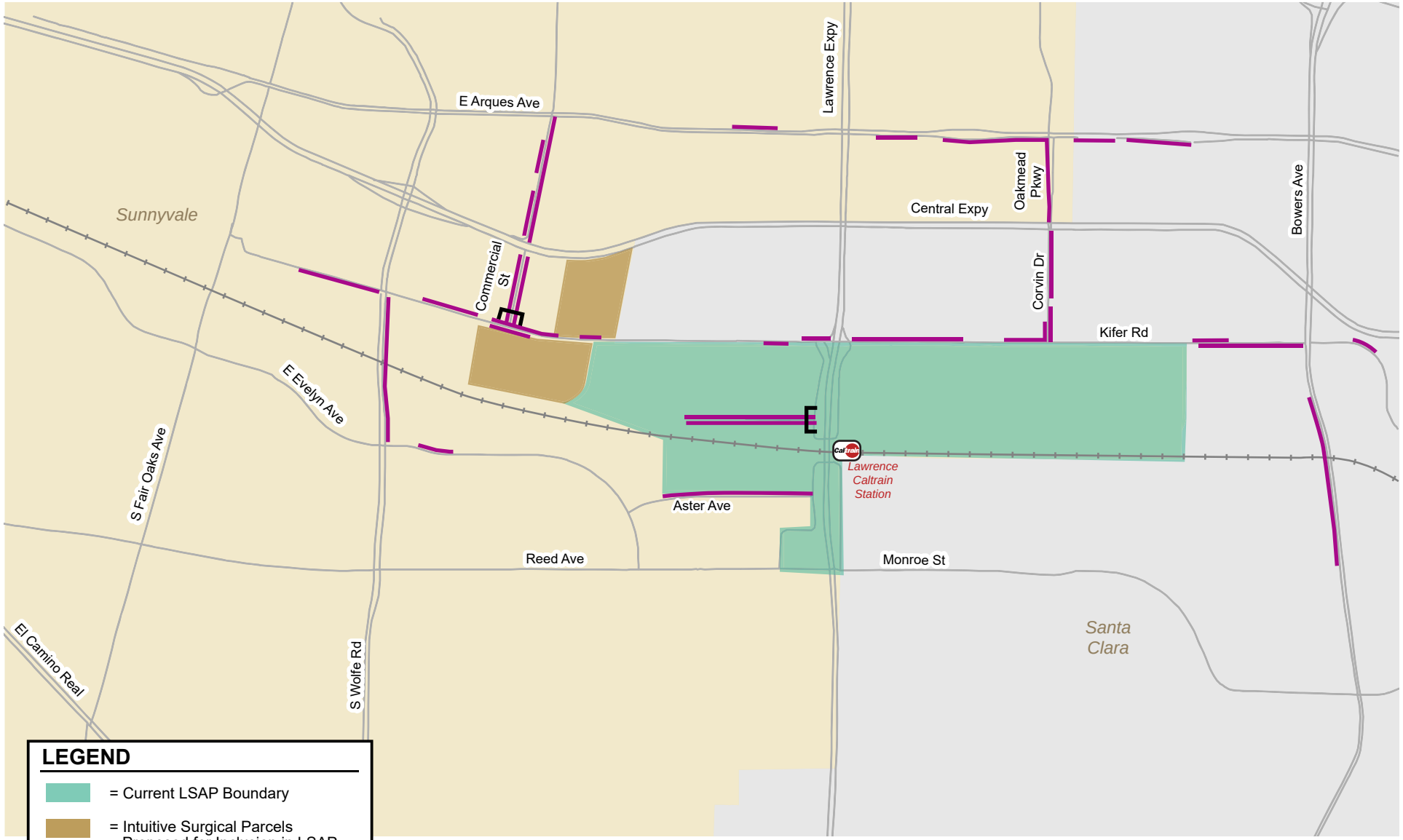


Figure 3
Existing Pedestrian Facilities



Figure 4
Existing Transit Services

NORTH
Not to Scale

Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. There are two Caltrain stations within the City of Sunnyvale: the Sunnyvale Caltrain Station and the Lawrence Caltrain Station.

Sunnyvale Caltrain Station

The Sunnyvale Caltrain Station, located near the intersection of Frances Street and Evelyn Avenue, provides Caltrain service with approximately 15- to 30-minute headways during the weekday AM and PM commute hours and 60-minute headways during weekday midday and night hours as well as on weekends. The Sunnyvale Caltrain Station provides service for all Local, Limited-Stop, and Baby-Bullet trains. VTA bus routes 20, 21, 53, 55, and 523 all stop at the Sunnyvale Transit Center, which is across the street from the Sunnyvale Caltrain Station. The Sunnyvale Caltrain Station is located approximately 1.6 miles from the project site (routed from the Commercial Street/Kifer Road intersection), which is approximately a 9-minute bike ride. There are continuous pedestrian facilities between the Sunnyvale Caltrain station and the project site. Bicycle lanes are present on Kifer Road, but the ends of Hendy Avenue between Kifer Road and the Sunnyvale Caltrain station do not provide bicycle facilities.

Lawrence Caltrain Station

The Lawrence Caltrain Station, located beneath the Lawrence Expressway overcrossing between Reed Avenue and Kifer Road, provides Caltrain service with approximately 20- to 30-minute headways during the weekday AM and PM commute hours and 60-minute headways during weekday midday and night hours as well as on weekends. The Lawrence Caltrain Station provides service for only Local and Limited-Stop trains. Services are provided between 4:30 AM and 1:45 AM (next day). The Baby-Bullet train does not stop at the Lawrence Caltrain Station. VTA bus route 21 stops at the intersection at Lawrence Expressway and Reed Avenue, approximately 0.3 mile from the station. The Lawrence Caltrain Station is located within the Lawrence Station Area Plan boundary.

Two free public Caltrain shuttles provide service at the Lawrence Caltrain Station: the Bowers/Walsh shuttle and the Mission shuttle. The shuttle routes are shown on Figure 4. These shuttles are funded jointly by the Bay Area Air Quality Management District, the Peninsula Corridor Joint Powers Board and private employers.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 5.

Existing Traffic Volumes

The existing traffic volumes were obtained from peak hour traffic counts collected in 2017 through 2019. The existing PM traffic counts for the CMP intersections were collected in 2018. The existing AM and PM peak hour traffic volumes are shown graphically on Figure 6. Traffic count data are included in Appendix A. Traffic volumes at the study intersections for all scenarios of the traffic study are included in Appendix B.

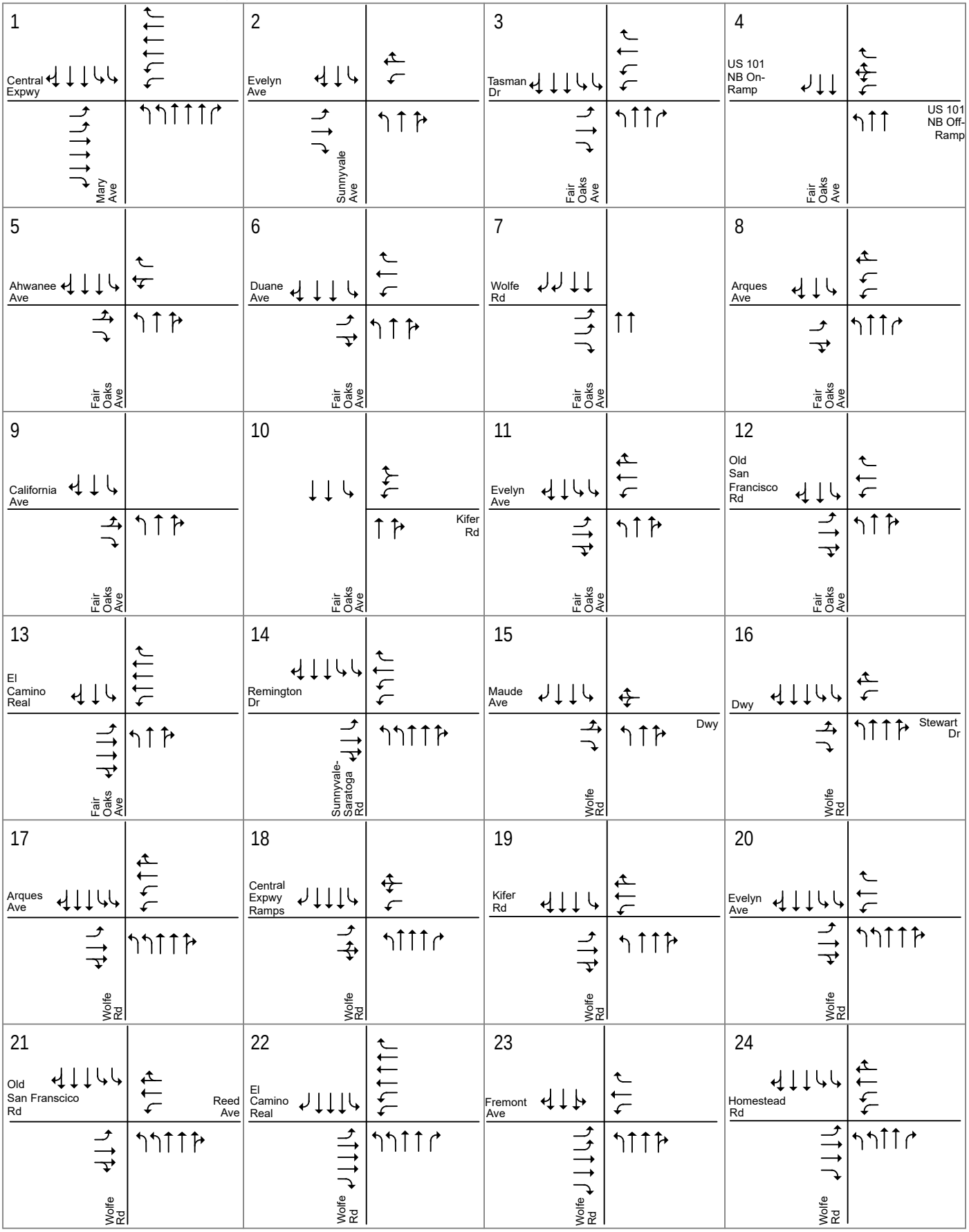
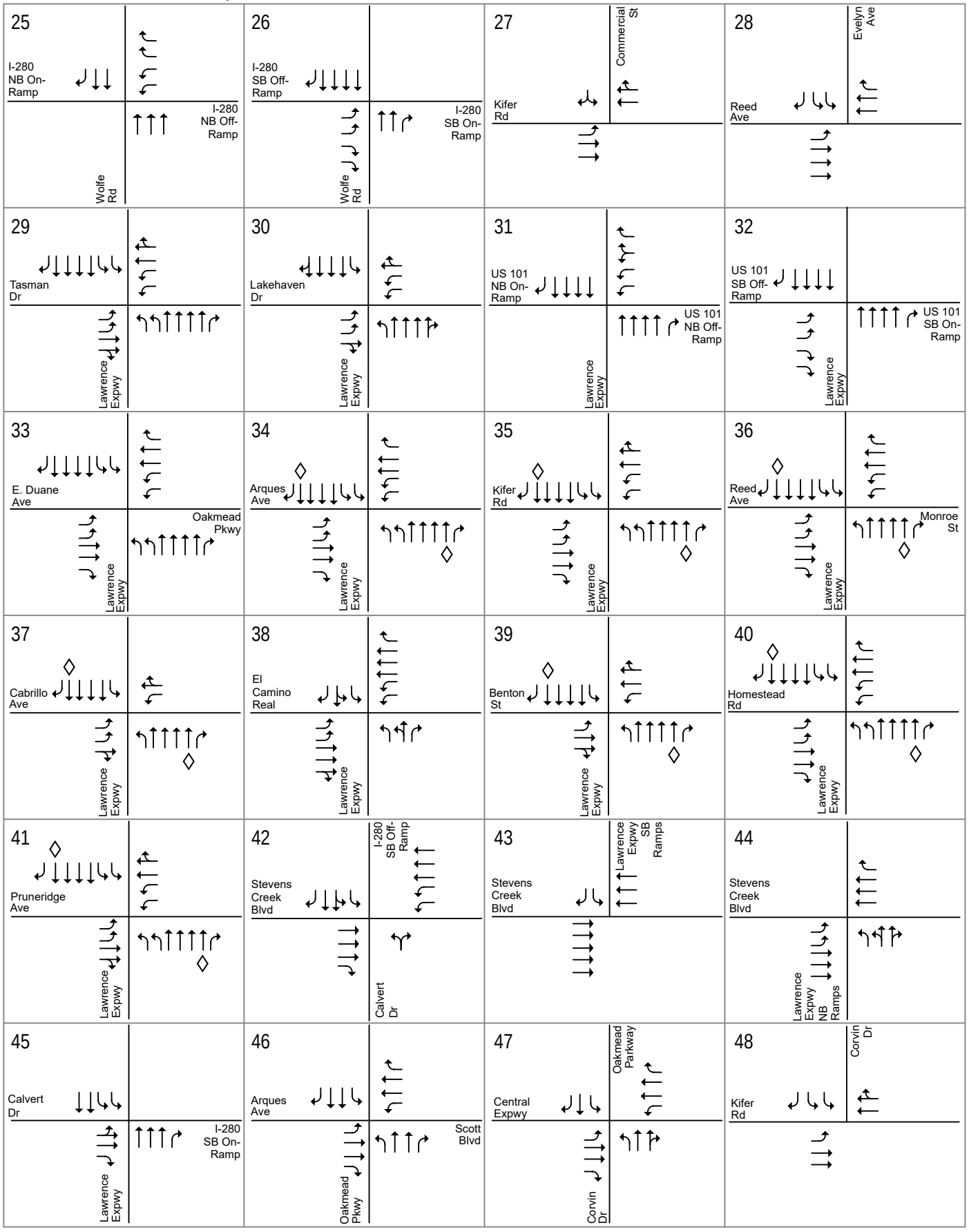


Figure 5
Existing Lane Configurations



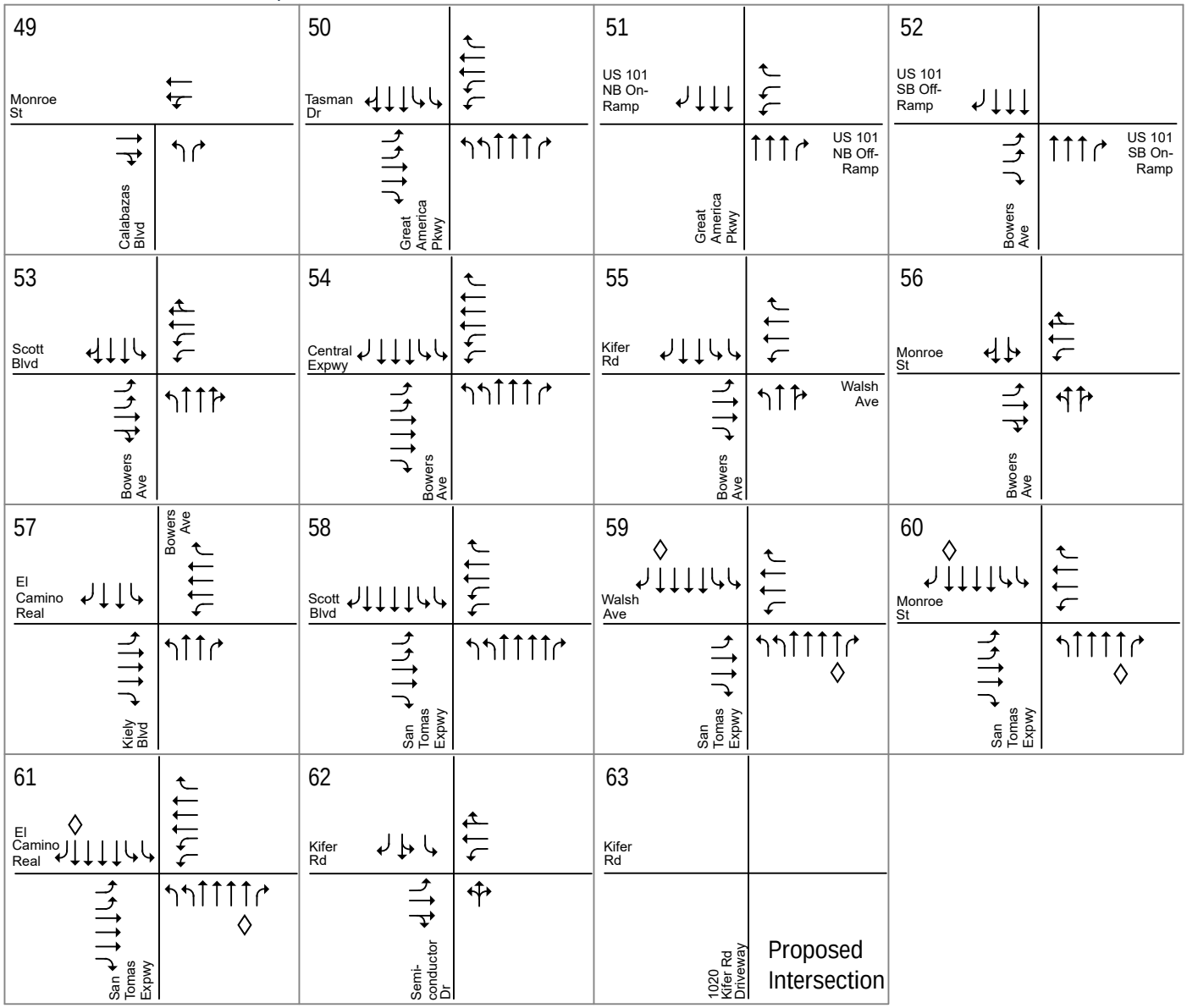
LEGEND

◊ = HOV Lane

Figure 5
Existing Lane Configurations

HEXAGON

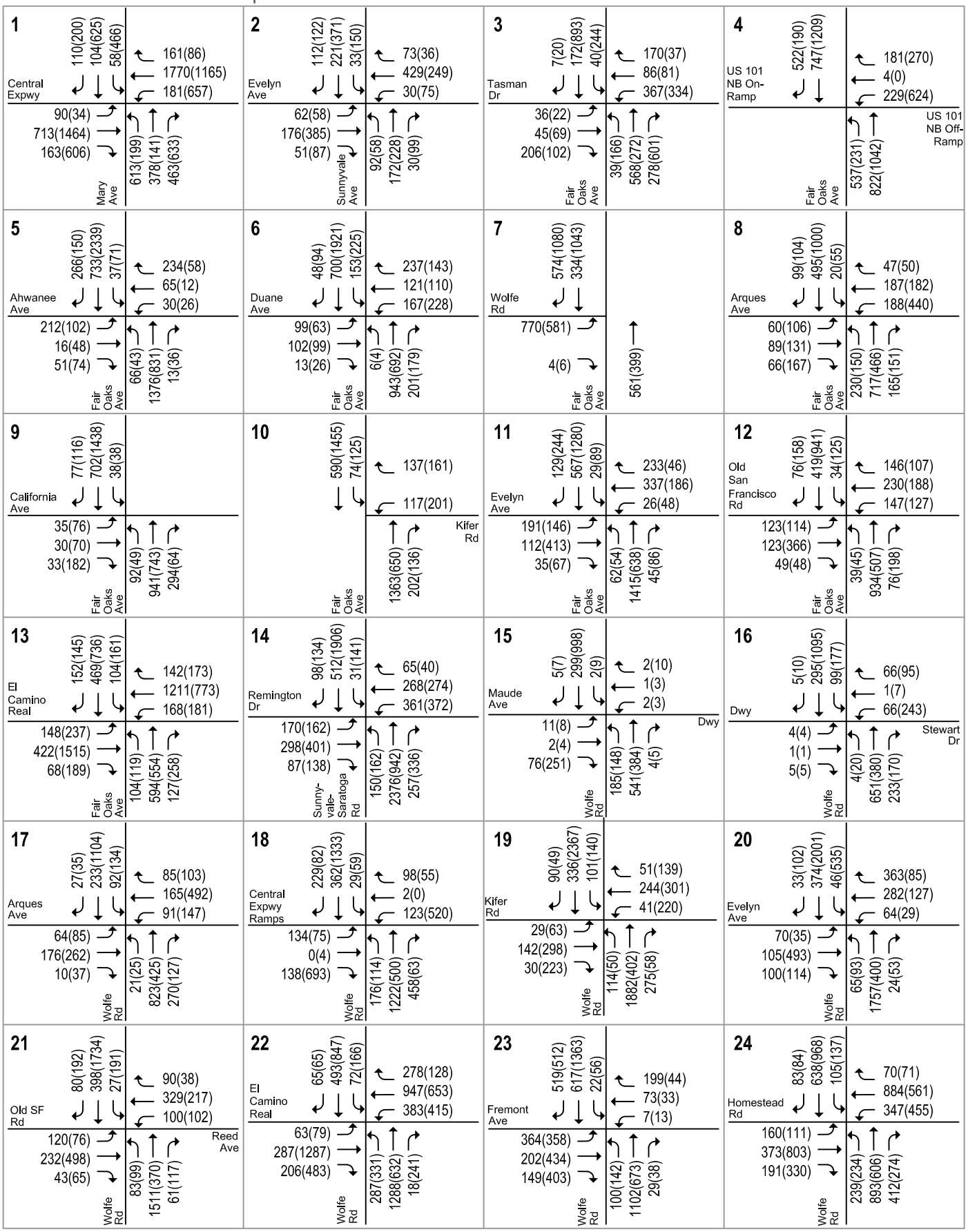
NORTH
Not to Scale



LEGEND

◊ = HOV Lane

Figure 5
Existing Lane Configurations



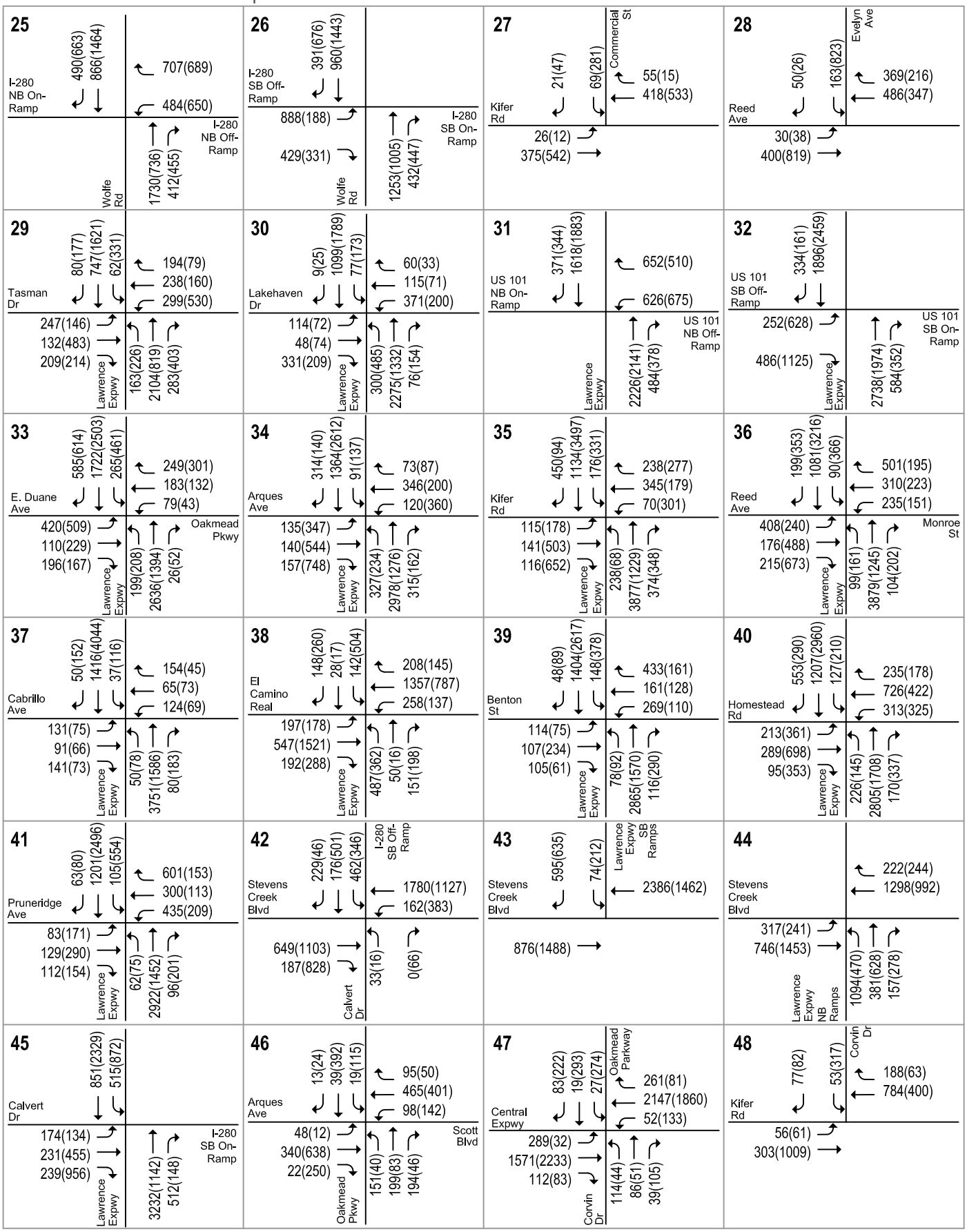
LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

HEXAGON

NORTH
Not to Scale



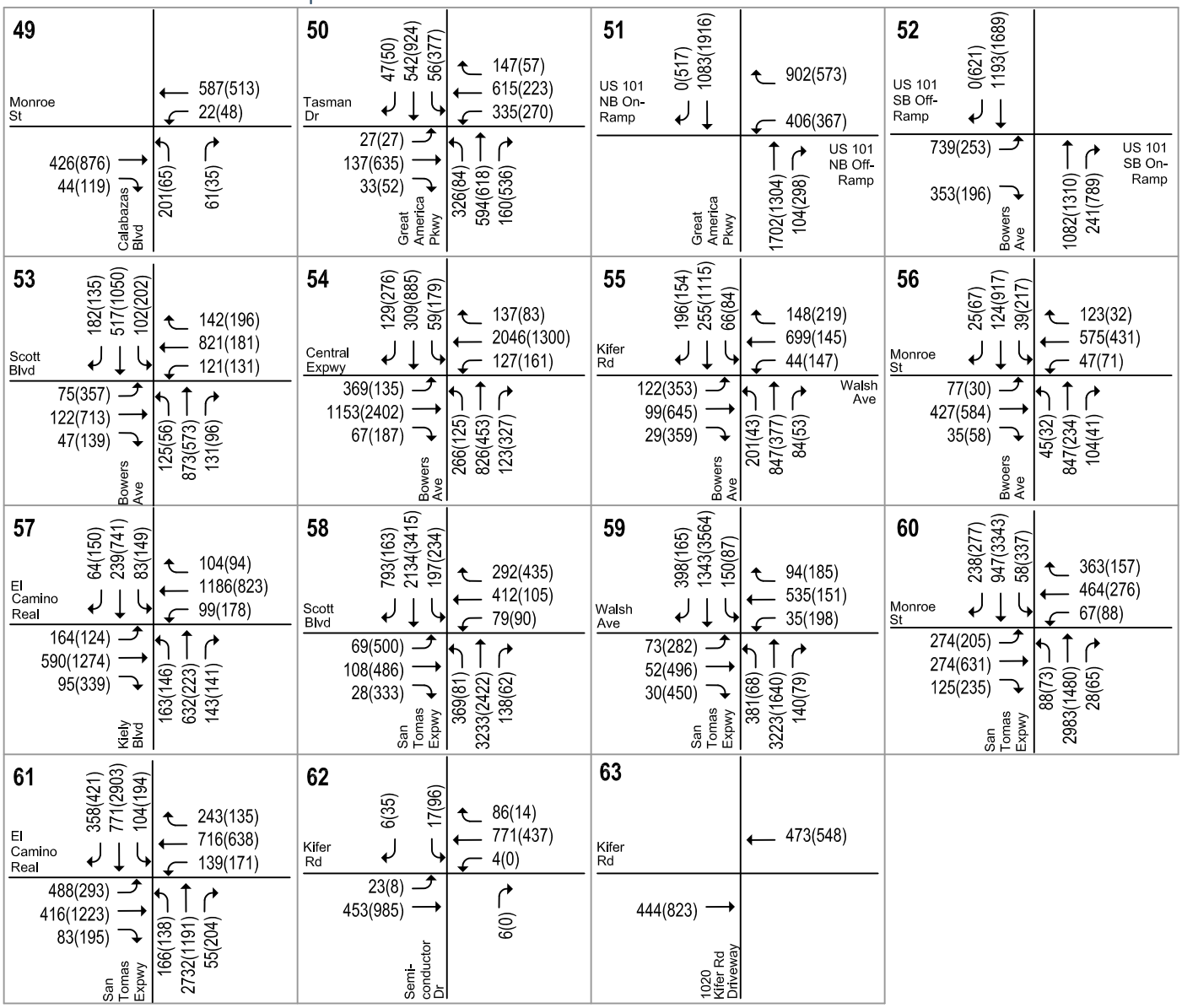
LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

HEXAGON

NORTH
Not to Scale

Existing Intersection Levels of Service

Intersection levels of service were evaluated against the respective city and CMP standards. The results of the intersection level of service analysis under existing conditions are summarized in Tables 5 and 6 and shown on Figure 7. The results of the analysis show that the following intersections currently operate at unacceptable levels:

City of Sunnyvale Intersections:

- Wolfe Road & Maude Avenue (#15) – PM Peak Hour (LOS F)
- Wolfe Road & Central Expressway Ramps (#18) – PM Peak Hour (LOS E)

County of Santa Clara Intersections:

- Lawrence Expressway & Lakehaven Drive (#30) – AM & PM Peak Hours (LOS F)
- Lawrence Expressway & Kifer Road (#35) – PM Peak Hour (LOS F)
- Lawrence Expressway & Monroe Street (#36) – AM Peak Hour (LOS F)

The intersection levels of service calculation sheets are included in Appendix B.

Existing Freeway Levels of Service

Existing weekday AM and PM peak-hour traffic volumes on the study freeway segments were obtained from the 2018 CMP Annual Monitoring Report. The existing freeway levels of service during the weekday peak hours of traffic are summarized in Figures 8 to 11 and shown on Table 7.

Table 5
Existing Intersection Levels of Service – Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS
1	Mary Avenue & Central Expressway (County*)	AM	11/14/17	E	51.5	D-
		PM	12/13/18		60.1	E
2	Sunnyvale Avenue & Evelyn Avenue	AM	11/15/17	D	27.6	C
		PM	11/15/17		35.0	C-
3	Fair Oaks Avenue & Tasman Drive	AM	05/08/18	D	27.2	C
		PM	05/08/18		28.7	C
4	Fair Oaks Avenue & US 101 NB Ramps	AM	05/08/18	D	21.3	C+
		PM	05/08/18		22.8	C+
5	Fair Oaks Avenue & Ahwanee Avenue	AM	05/08/18	D	20.8	C+
		PM	05/08/18		13.8	B
6	Fair Oaks Avenue & Duane Avenue	AM	05/08/18	D	32.1	C-
		PM	05/08/18		30.2	C
7	Fair Oaks Avenue & Wolfe Road	AM	05/08/18	D	22.8	C+
		PM	05/08/18		19.8	B-
8	Fair Oaks Avenue & Arques Avenue	AM	05/08/18	D	34.8	C-
		PM	05/08/18		44.5	D
9	Fair Oaks Avenue & California Avenue	AM	12/06/17	D	10.8	B+
		PM	12/06/17		15.7	B
10	Fair Oaks Avenue & Kifer Road	AM	05/08/18	D	15.6	B
		PM	05/08/18		25.9	C
11	Fair Oaks Avenue & Evelyn Avenue	AM	05/08/18	D	35.9	D+
		PM	05/08/18		29.8	C
12	Fair Oaks Avenue & Old SF Road	AM	05/08/18	D	33.3	C-
		PM	05/08/18		33.7	C-
13	Fair Oaks Avenue & El Camino Real (*)	AM	05/08/18	E	41.0	D
		PM	10/30/18		41.8	D
14	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	11/14/17	E	42.9	D
		PM	10/30/18		43.6	D
15	Wolfe Road & Maude Avenue	AM	12/06/17	D	Unsignalized Intersection	
		PM	12/06/17			
16	Wolfe Road & Stewart Drive	AM	11/15/17	D	22.4	C+
		PM	11/15/17		30.8	C
17	Wolfe Road & Arques Avenue	AM	11/14/17	D	35.6	D+
		PM	11/14/17		40.8	D
18	Wolfe Rd. & Central Expwy. Ramps	AM	12/06/17	D	37.2	D+
		PM	12/06/17		**71.0**	**E**
19	Wolfe Road & Kifer Road	AM	11/14/17	D	29.0	C
		PM	11/14/17		43.1	D
20	Wolfe Road & Evelyn Avenue	AM	11/15/17	D	38.6	D+
		PM	11/15/17		36.5	D+
21	Wolfe Road & Reed Avenue	AM	11/14/17	D	37.0	D+
		PM	11/14/17		38.9	D+

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
BOLD indicates unacceptable level of service

Table 5 (continued)
Existing Intersection Levels of Service – Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS
22	Wolfe Road & El Camino Real (*)	AM	11/14/17	E	53.5	D-
		PM	10/30/18		46.4	D
23	Wolfe Road & Fremont Avenue	AM	11/14/17	D	43.7	D
		PM	11/14/17		47.5	D
24	Wolfe Road & Homestead Road	AM	11/14/17	D	35.4	D+
		PM	11/14/17		35.1	D+
25	Wolfe Road & I-280 NB Ramps (CU*)	AM	03/28/18	E	8.3	A
		PM	10/30/18		13.3	B
26	Wolfe Road & I-280 SB Ramps (CU*)	AM	03/28/18	E	13.9	B
		PM	10/30/18		7.9	A
27	Commercial Street & Kifer Road	AM	12/06/17	D	Unsignalized	
		PM	12/06/17		Intersection	
28	Evelyn Avenue & Reed Avenue	AM	11/15/17	D	10.1	B+
		PM	11/15/17		12.3	B
29	Lawrence Expressway & Tasman Drive (County*)	AM	05/17/18	E	45.6	D
		PM	11/01/18		57.0	E+
30	Lawrence Expressway & Lakehaven Drive (County)	AM	05/17/18	E	**84.6**	**F**
		PM	05/17/18		**81.0**	**F**
31	Lawrence Expressway & US 101 NB Ramps (County)	AM	05/23/19	E	11.9	B+
		PM	05/23/19		14.0	B
32	Lawrence Expressway & US 101 SB Ramps (County)	AM	05/23/19	E	7.9	A
		PM	05/23/19		22.3	C+
33	Lawrence Expressway & Oakmead Parkway (County)	AM	05/23/19	E	40.4	D
		PM	05/23/19		52.3	D-
34	Lawrence Expressway & Arques Avenue (County*)	AM	04/04/17	E	48.2	D
		PM	11/13/18		71.6	E
35	Lawrence Expressway & Kifer Road (County)	AM	03/07/18	E	54.4	D-
		PM	03/07/18		**101.6**	**F**
36	Lawrence Expressway & Monroe Street (County*)	AM	03/07/18	E	**114.8**	**F**
		PM	11/13/18		61.8	E
37	Lawrence Expressway & Cabrillo Avenue (County)	AM	03/07/18	E	52.1	D-
		PM	03/07/18		48.6	D
38	Lawrence Expressway Ramps & El Camino Real (SC*)	AM	11/14/17	E	34.5	C-
		PM	11/15/18		28.8	C
39	Lawrence Expressway & Benton Street (County)	AM	11/14/17	E	53.7	D-
		PM	11/14/17		40.5	D
40	Lawrence Expressway & Homestead Road (County*)	AM	11/14/17	E	56.8	E+
		PM	11/15/18		65.9	E
41	Lawrence Expressway & Pruneridge Avenue (County)	AM	11/14/17	E	61.2	E
		PM	11/14/17		43.8	D
42	I-280 SB Off-Ramp & Stevens Creek Boulevard (SC*)	AM	11/15/17	E	27.0	C
		PM	11/15/18		35.0	C-

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
BOLD indicates unacceptable level of service

Table 5 (continued)
Existing Intersection Levels of Service – Signalized Intersections

#	Intersection	Peak Hour	Count Date	LOS Std.	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS
43	Lawrence Expressway SB Ramps & Stevens Creek Boulevard (SC*)	AM	05/10/18	E	25.9	C
		PM	11/15/18		26.1	C
44	Lawrence Expressway NB Ramps & Stevens Creek Boulevard (SC*)	AM	11/15/17	E	32.7	C-
		PM	11/15/18		28.0	C
45	Lawrence Expressway & I-280 SB On-Ramp (SJ*)	AM	11/15/17	E	53.0	D-
		PM	11/15/18		42.1	D
46	Oakmead Parkway & Scott Boulevard	AM	11/15/17	D	22.7	C+
		PM	11/15/17		31.0	C
47	Oakmead Parkway & Central Expressway (County*)	AM	11/15/17	E	46.1	D
		PM	11/13/18		49.7	D
48	Corvin Drive & Kifer Road (SC)	AM	11/15/17	D	8.1	A
		PM	11/15/17		9.0	A
49	Calabazas Boulevard & Monroe Street (SC)	AM	12/14/17	D	10.3	B+
		PM	11/15/17		3.2	A
50	Great America Parkway & Tasman Drive (SC*)	AM	03/07/18	E	42.7	D
		PM	11/15/18		28.4	C
51	Great America Parkway & US 101 NB Ramps (SC*)	AM	11/15/17	E	8.9	A
		PM	11/15/18		10.0	A
52	Bowers Avenue & US 101 SB Ramps (SC*)	AM	11/15/17	E	15.2	B
		PM	11/15/18		7.6	A
53	Bowers Avenue & Scott Boulevard (SC*)	AM	11/15/17	E	39.5	D
		PM	11/15/18		36.1	D+
54	Bowers Avenue & Central Expressway (County*)	AM	11/15/17	E	46.5	D
		PM	11/13/18		53.8	D-
55	Bowers Avenue & Kifer Road (SC)	AM	11/15/17	D	29.1	C
		PM	03/07/18		28.6	C
56	Bowers Avenue & Monroe Street (SC)	AM	11/15/17	D	32.6	C-
		PM	11/15/17		34.1	C-
57	Kiely Boulevard & El Camino Real (SC*)	AM	11/15/17	E	29.9	C
		PM	11/15/18		30.4	C
58	San Tomas Expressway & Scott Boulevard (County*)	AM	11/15/17	E	39.7	D
		PM	11/13/18		50.7	D
59	San Tomas Expressway & Walsh Avenue (County)	AM	11/15/17	E	49.0	D
		PM	03/07/18		77.9	E-
60	San Tomas Expressway & Monroe Street (County*)	AM	11/15/17	E	49.6	D
		PM	11/08/18		38.5	D+
61	San Tomas Expressway & El Camino Real (County*)	AM	11/28/17	E	58.9	E+
		PM	11/08/18		71.3	E
62	Semiconductor Drive & Kifer Road	AM	09/11/18	D	14.1	B
		PM	09/11/18		9.4	A
63	1020 Kifer Rd Driveway & Kifer Road	AM	01/00/00	D	Future Signal	
		PM	01/00/00			

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
BOLD indicates unacceptable level of service

Table 6
Existing Intersection Levels of Service – Unsignalized Intersections

#	Intersection	Control [1]	Peak Hour	Count Date	Existing		
					Delay (sec)	LOS	Signal Warrant Met
15	Wolfe Road & Maude Avenue	side-street stop	AM	12/06/17	25.7	D	No
			PM	12/06/17	**67.4**	**F**	**Yes**
27	Commercial Street & Kifer Road	side-street stop	AM	12/06/17	12.3	B	No
			PM	12/06/17	24.1	C	Yes

Notes:
(1) Delay, LOS and volume-to-capacity ratio reported for side-street stop-controlled intersections represent the movement with the worst delay.
BOLD indicates unacceptable level of service

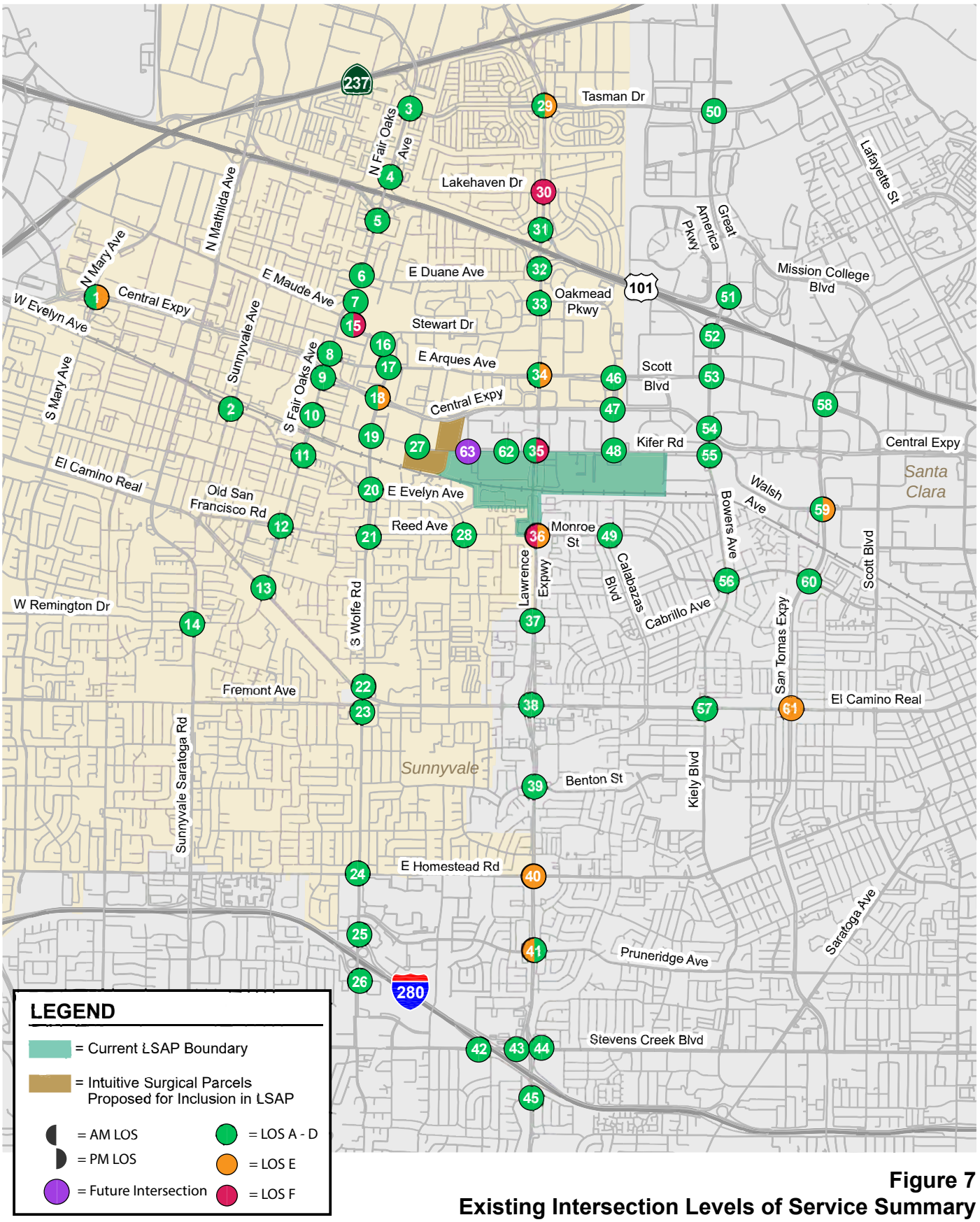


Figure 7
Existing Intersection Levels of Service Summary

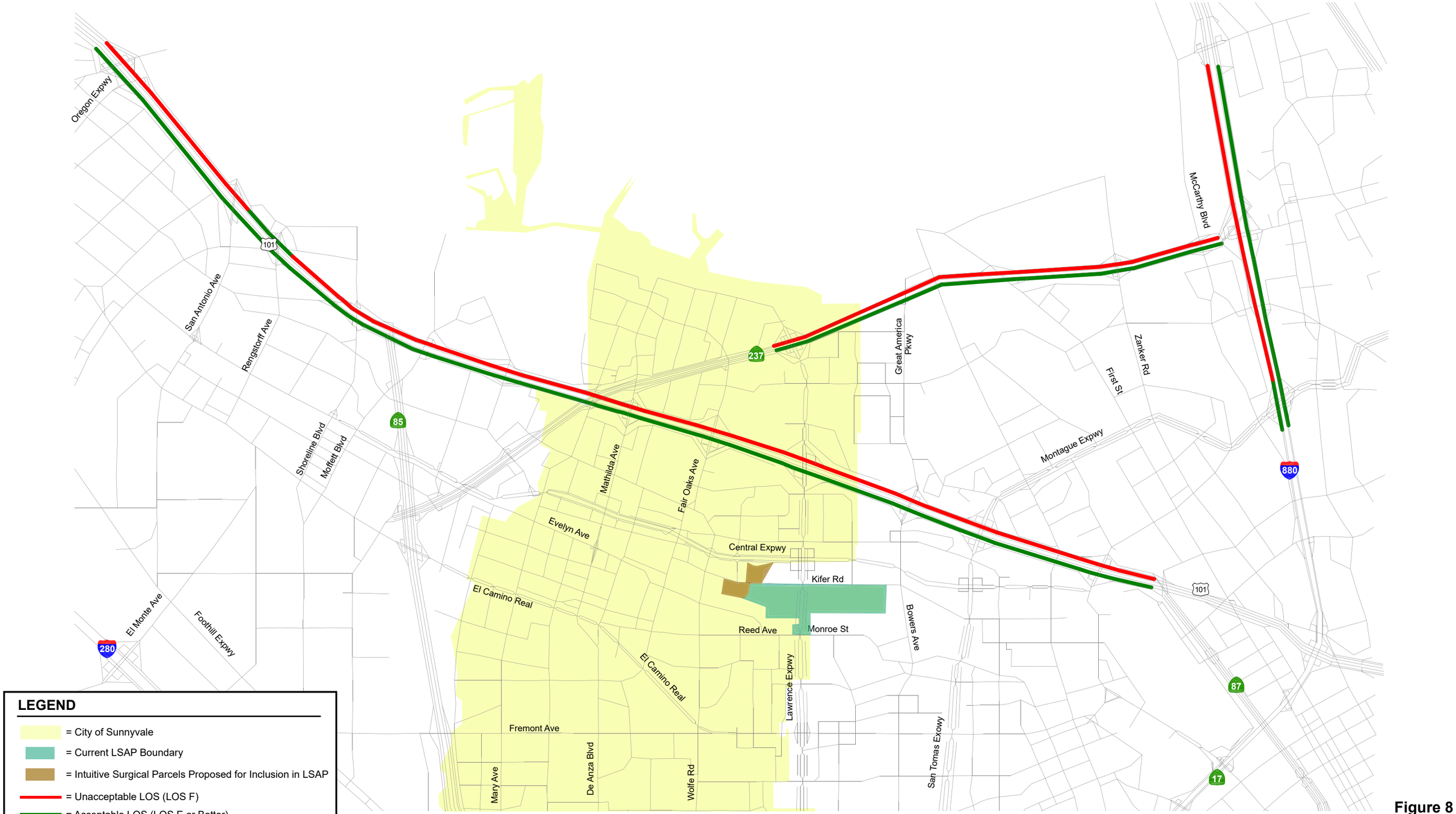


Figure 8
Existing Freeway Levels of Service Summary - AM Peak-Hour - Mixed-Flow Lanes

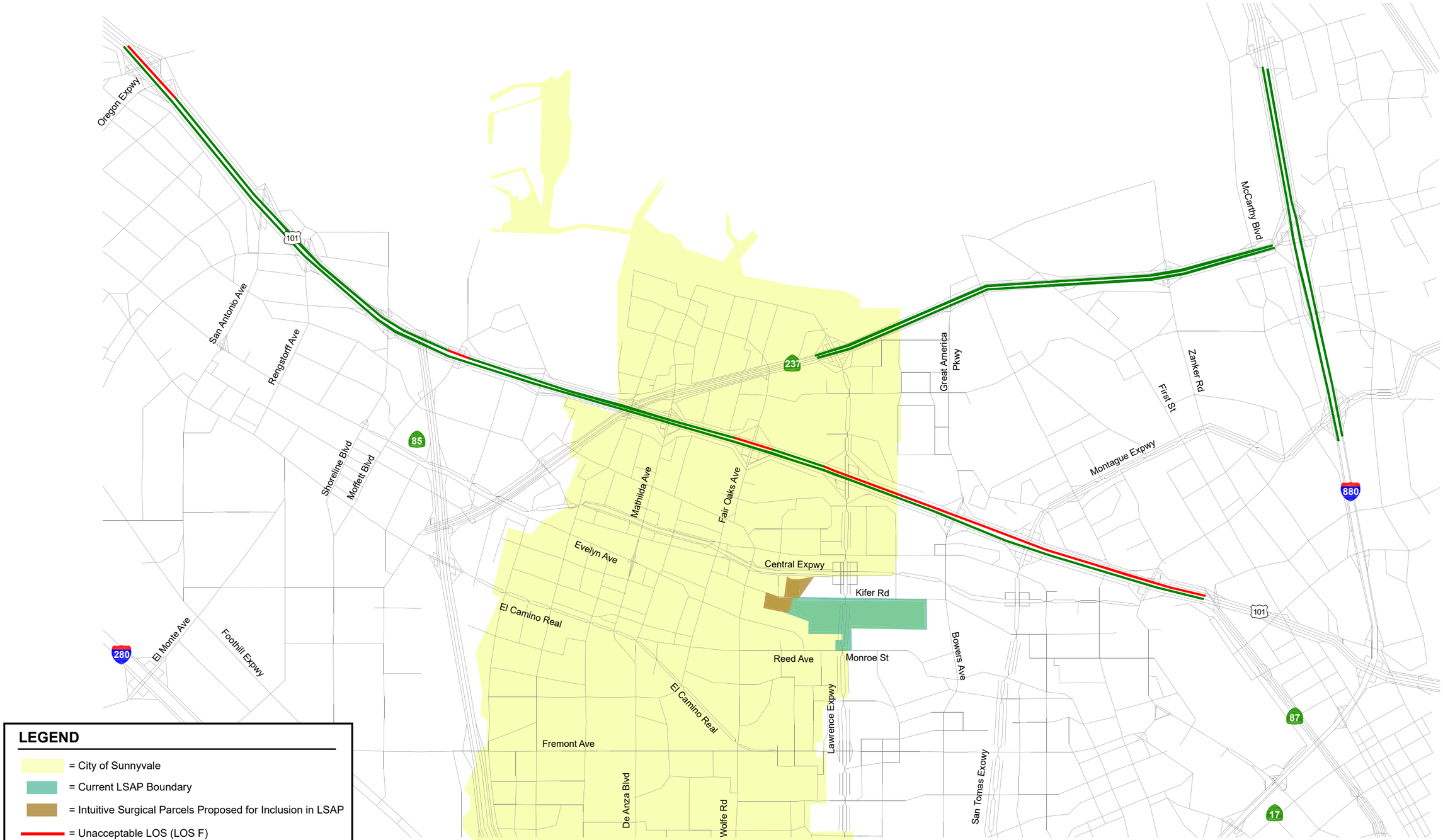


Figure 9
Existing Freeway Levels of Service Summary - AM Peak-Hour - HOV Lanes

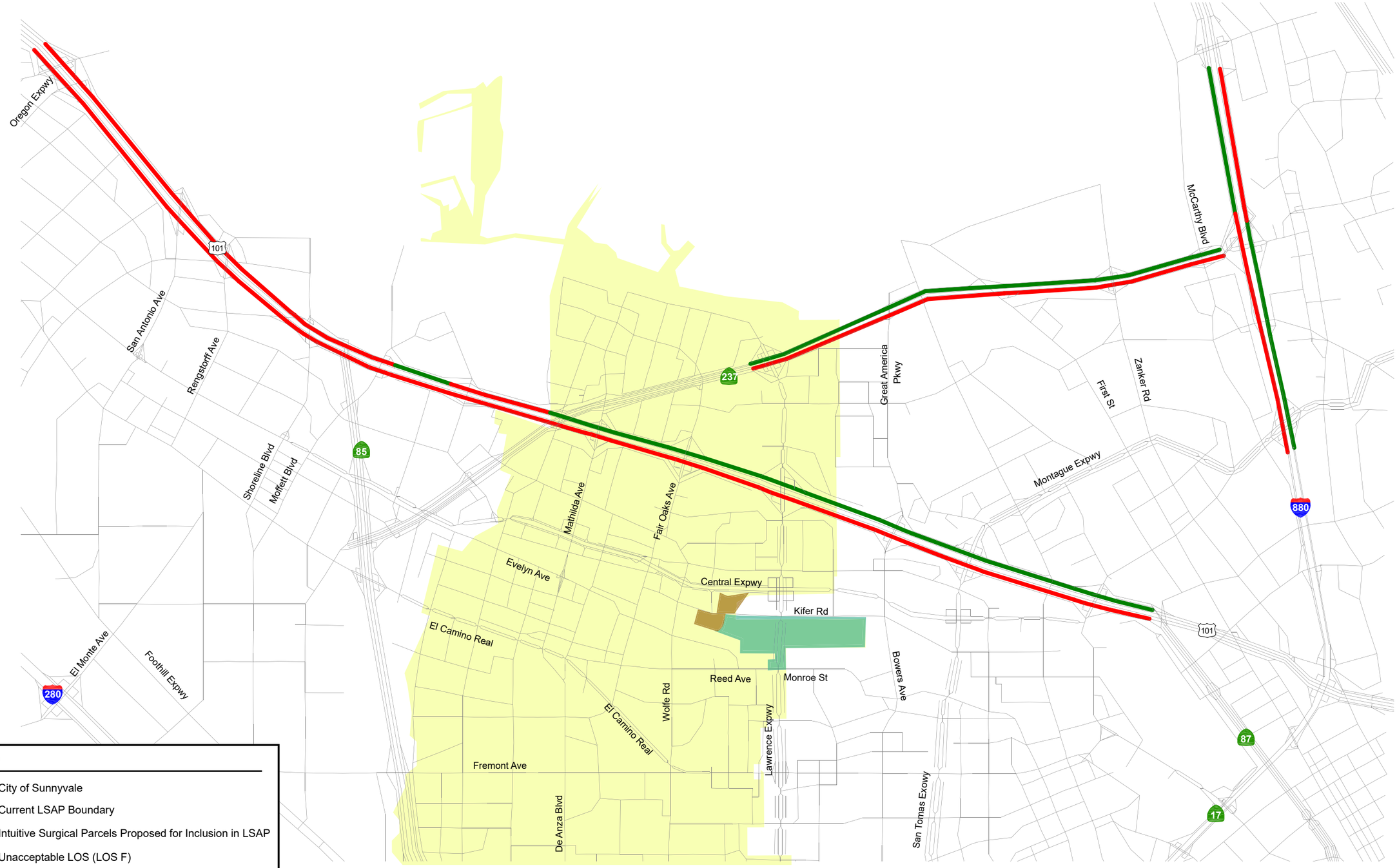


Figure 10
Existing Freeway Levels of Service Summary - PM Peak-Hour - Mixed-Flow Lanes

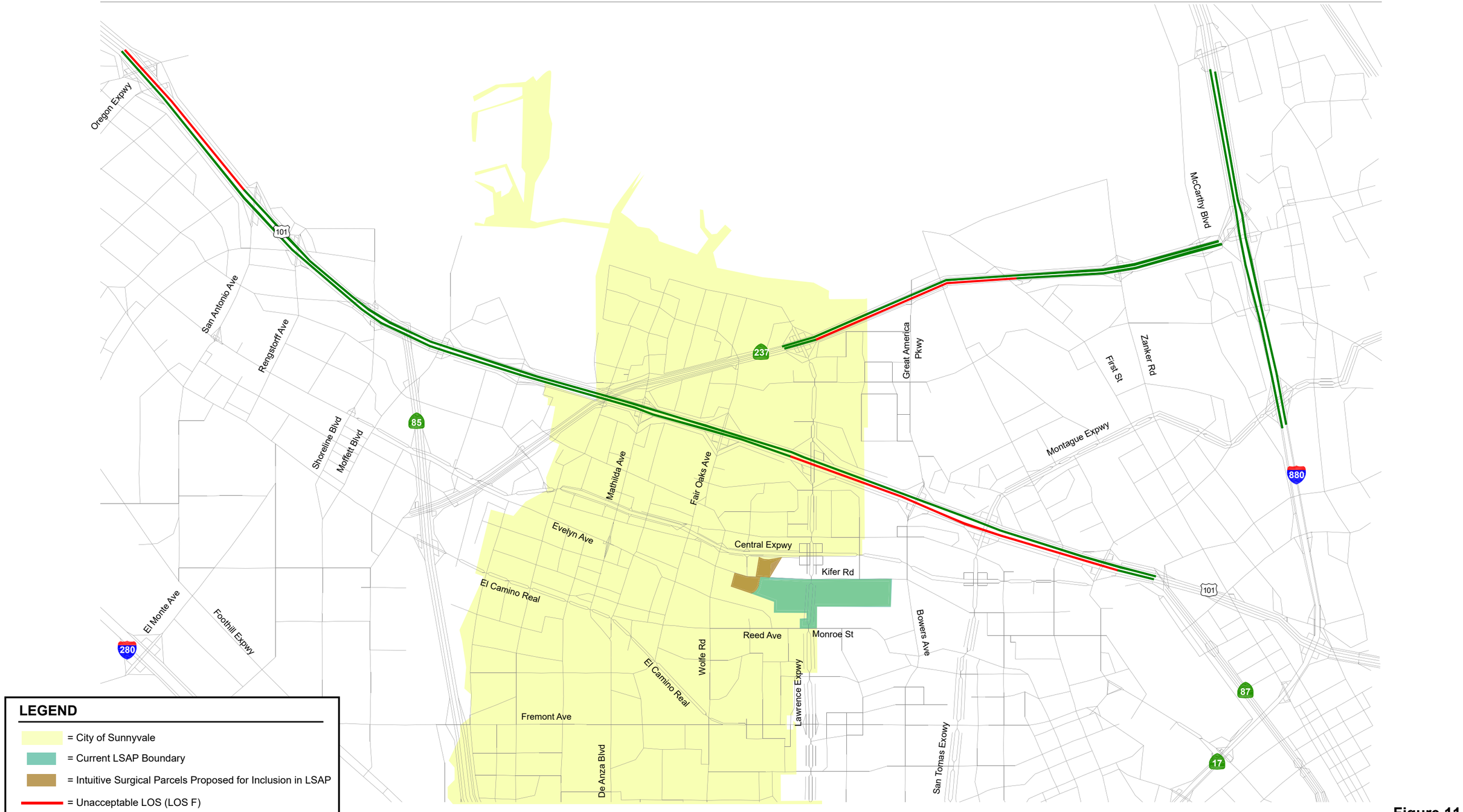


Figure 11
Existing Freeway Levels of Service Summary - PM Peak-Hour - HOV Lanes

Existing Freeway Ramp Capacity Analysis

This analysis consists of a volume-to-capacity ratio evaluation of the study freeway ramps. The ramp capacities were obtained from the *Highway Capacity Manual 2000* (Chapter 25), which considers both the free-flow speed and the number of lanes on the study ramps. As a conservative approach, on-ramps that currently have ramp meter equipment are analyzed with a capacity of 900 vehicles per hour for the mixed-flow lanes. The peak-hour freeway ramp volumes were obtained from recent traffic counts and Caltrans (see Table 7).

The ramp analysis shows that the freeway ramps currently have sufficient capacity to serve the existing traffic volumes. The study ramps have a volume-to-capacity (V/C) ratio that is well below 1.0, which means that the existing traffic demand is lower than the ramp capacity.

Table 7
Existing Freeway Ramp Capacity Analysis

Interchange	Ramp	Type	Peak Hour	Lanes				Existing Conditions	
				Mixed	HOV	Meter [1]	Capacity [2]	Volume [3]	V/C
US 101/Lawrence Expwy	SB On-Ramp fr. NB Lawrence Expwy	Diagonal	AM	2	1	Equipment Present	1,800	584	0.32
			PM					352	0.20
	NB On-Ramp fr. NB Lawrence Expwy	Loop	AM	1	1	Equipment Present	1,800	484	0.27
			PM					378	0.21
	NB Off-Ramp to Lawrence Expwy	Diagonal	AM	2	-	-	3,800	1278	0.34
			PM					1185	0.31
	SB Off-Ramp to Lawrence Expwy	Diagonal	AM	2	-	-	3,800	738	0.19
			PM					1753	0.46
US 101/Fair Oaks Ave	SB On-Ramp fr. NB Fair Oaks Ave	Diagonal	AM	1	1	Equipment Present	1,800	616	0.34
			PM					225	0.13
	NB Off-Ramp to Fair Oaks Ave	Diagonal	AM	1	-	-	2,000	414	0.21
			PM					894	0.45
	NB On-Ramp fr. Fair Oaks Ave	Diagonal	AM	1	1	Equipment Present	1,800	1057	0.59
			PM					416	0.23
	SB Off-Ramp to SB Fair Oaks Ave	Diagonal	AM	1	-	-	2,000	363	0.18
			PM					893	0.45
SR 237/Lawrence Expwy	EB On-Ramp fr. NB Lawrence Expwy	Diagonal	AM	1	1	Equipment Present	1,800	850	0.47
			PM					648	0.36
	WB Off-Ramp to SB Lawrence Expwy	Loop	AM	1	-	-	1,800	1228	0.68
			PM					1306	0.73

Notes:
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, fr. = from
1. As a conservative approach, if an on-ramp has meter equipment present , the ramp is analyzed assuming it is metered.
2. Ramp capacities were obtained from *Highway Capacity Manual, 2000* , and considered the free-flow speed, the number of lanes on the ramp, and
3. Existing peak hour volumes are obtained through intersection counts and Caltrans.

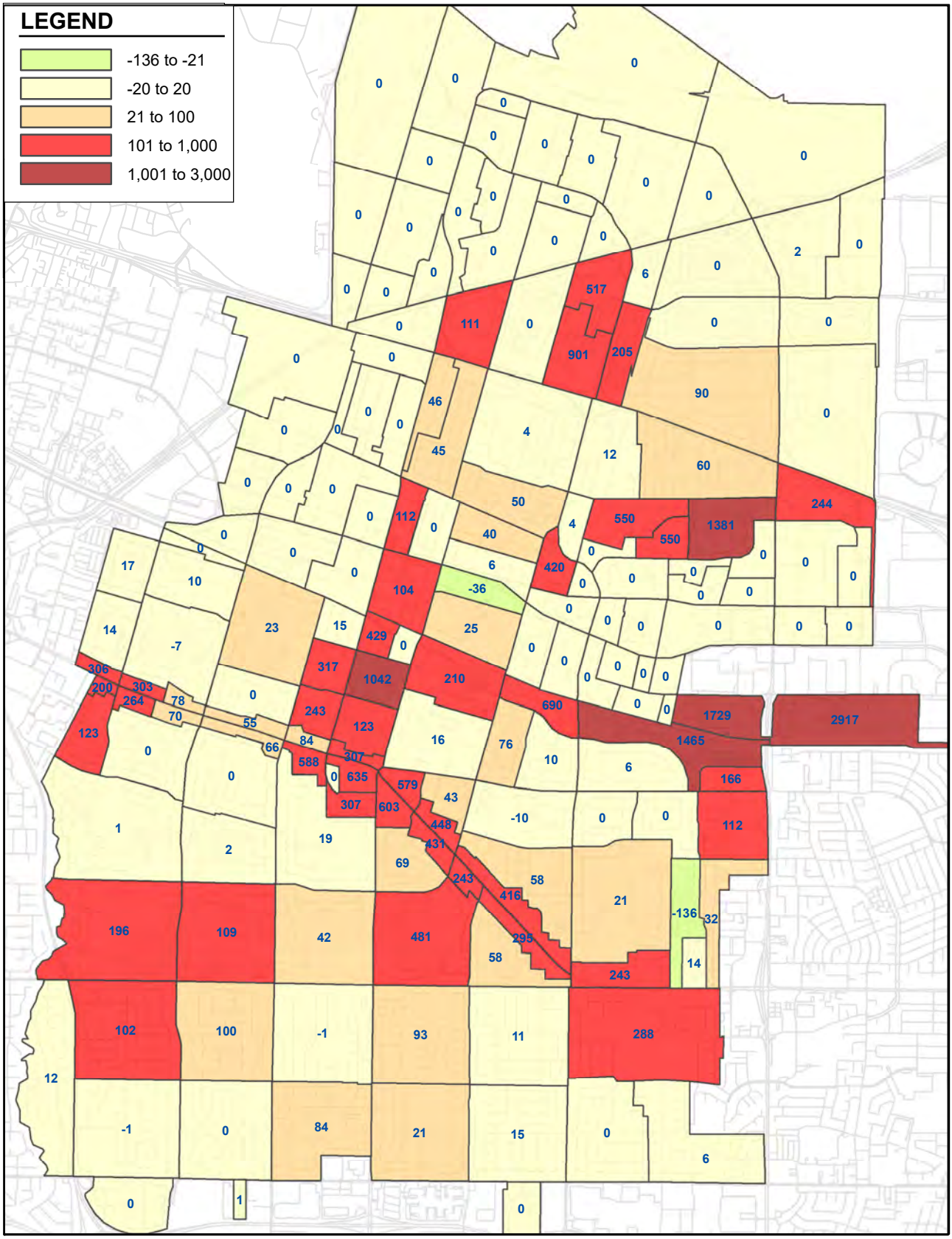
3.
Year 2035 Cumulative Conditions

This chapter presents a summary of the cumulative traffic conditions that would occur in year 2035 with the proposed Lawrence Station Area Plan (LSAP) update. The year 2035 cumulative scenario assumes buildout of the current general plan, the proposed LSAP-Update, the proposed El Camino Real Corridor Specific Plan, the proposed Fortinet Master Plan, the proposed update to the Downtown Specific Plan, as well as regional growth. To determine potential impacts generated by the LSAP-Update, a separate model run was conducted assuming no growth in the LSAP area beyond the current general plan and adopted LSAP. The cumulative scenario was compared to the cumulative no LSAP-Update scenario to disclose impacts generated by the update portion of the LSAP. The LSAP-Update is said to generate a greater adverse impact if the impact was previously identified under the original LSAP traffic study. The Sunnyvale Travel Demand Forecasting Model (STFM) for year 2035 was used to forecast the year 2035 cumulative traffic volumes. Model assumptions and inputs are described in this chapter as well.

Traffic Volumes and Roadway Network

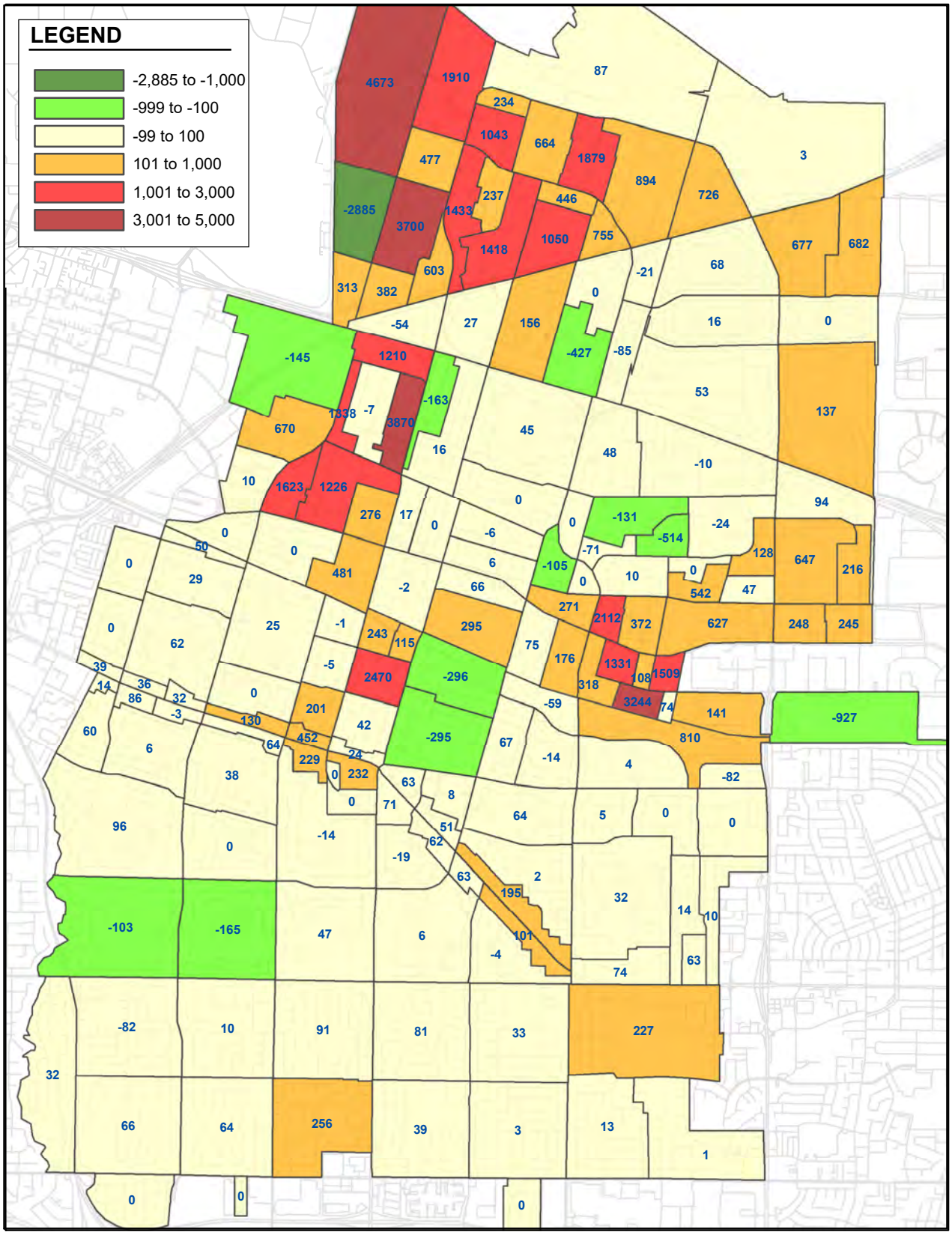
The year 2035 forecasts of intersection turning movements, freeway traffic, ramp volumes, and vehicle miles traveled were completed using the Sunnyvale Travel Demand Forecast Model (STFM). The STFM is a mathematical representation of travel within the nine counties in the San Francisco Bay Area and is calibrated to represent travel within the City of Sunnyvale. The model uses socioeconomic data, such as number of jobs and households, for different geographic areas (transportation analysis zones) to predict the travel from place to place in the future. There are 172 transportation analysis zones within the model to represent the City of Sunnyvale.

The year 2035 socioeconomic data are generated by the Association of Bay Area Governments and refined by VTA. For the year 2035 cumulative conditions model forecasts, socioeconomic data within the City of Sunnyvale were supplied by city staff. Socioeconomic data within the City of Sunnyvale assumed the buildout of the current general plan, the proposed LSAP-Update, the proposed El Camino Real Corridor Specific Plan, the proposed Fortinet Master Plan, and the proposed update to the Downtown Specific Plan (see Figures 12 and 13 for the housing and jobs growth by TAZ). The existing and year 2035 cumulative conditions jobs and housing data (by TAZ) are provided in the Appendix. Table 8 shows the model inputs for the entire bay area separated by counties.



NOTE:
Year 2035 land use includes the adopted LUTE, proposed ECRCSP, LSAP update, Fortinet Precise Plan, and Downtown Specific Plan.

Figure 12
Sunnyvale Land Use Growth - Households Year 2035 Compared to Year 2013



NOTE:
Year 2035 land use includes the adopted LUTE, proposed ECRCSP, LSAP update, Fortinet Precise Plan, and Downtown Specific Plan.

Figure 13
Sunnyvale Land Use Growth - Jobs
Year 2035 Compared to Year 2013

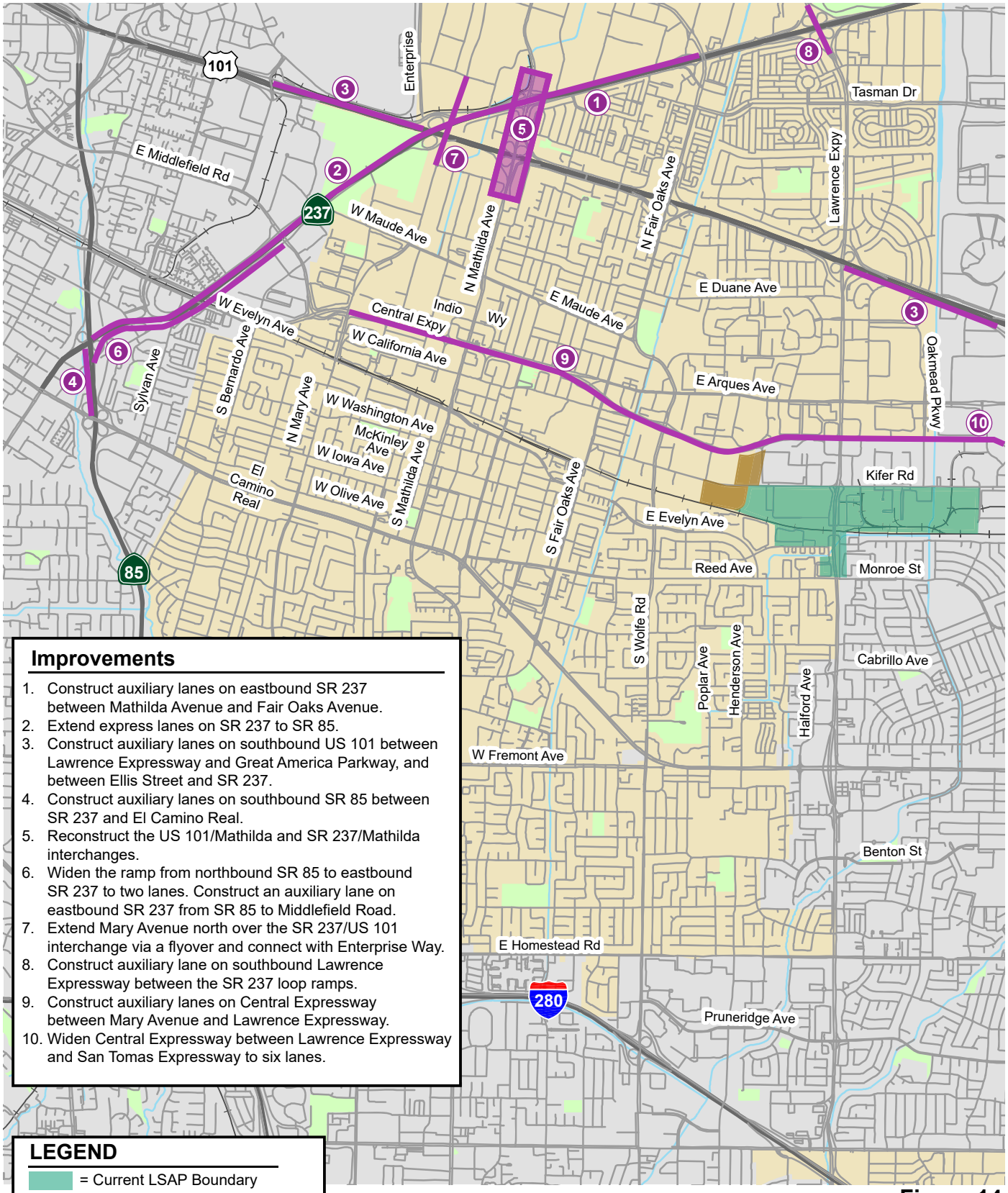
Table 8
Scoioeconomic Data Model Inputs – Bay Area Counties

County	Year 2035 Cumulative Conditions Socioeconomic Data [1]					
	Households		Population		Jobs	
	Yr 2035	Incr. Over Yr 2013	Yr 2035	Incr. Over Yr 2013	Yr 2035	Incr. Over Yr 2013
San Francisco	429,886	+ 91,185	1,023,992	+ 226,19	733,565	+ 164,69
San Mateo	305,826	+ 45,546	864,870	+ 142,670	433,295	+ 97,840
Santa Clara [2]	819,224	+ 192,678	2,356,670	+ 529,157	1,296,139	+ 321,970
Alameda	677,886	+ 135,346	1,877,079	+ 360,980	910,613	+ 163,95
Contra Costa	447,099	+ 78,329	1,269,299	+ 253,999	448,001	+ 75,0
Solano	164,049	+ 23,949	476,887	+ 57,507	172,676	+ 24,39
Napa	55,018	+ 6,728	153,791	+ 20,691	86,887	+ 15,740
Sonoma	214,729	+ 32,229	570,296	+ 93,596	248,147	+ 24,179
Marin	110,513	+ 7,263	268,668	+ 17,268	125,569	-10,038

Notes:
1. Year 2035 land uses referenced the ABAG Projections 2013.
2. Sunnyvale land uses included the adopted LUTE, propoesd ECRCSP, LUTE update, Fortinet Master Plan and Downtown Specific Plan.

The SFTM includes improvements to the roadway network as part of the 2040 Valley Transportation Plan (VTP) and the Sunnyvale Transportation Impact Fee (TIF). Significant roadway improvements that are funded or planned to be funded within or near Sunnyvale are shown on Figure 14.

A separate model run was conducted for the Cumulative no LSAP-Update scenario assuming no growth in the LSAP area beyond the current general plan levels. The same roadway improvements shown on Figure 14 were assumed in the Cumulative no LSAP-Update model run. The forecast intersection turning movement volumes were adjusted based on intersection counts to generate the year 2035 cumulative conditions and Cumulative no LSAP-Update traffic volumes (see Figures 15 and 16).



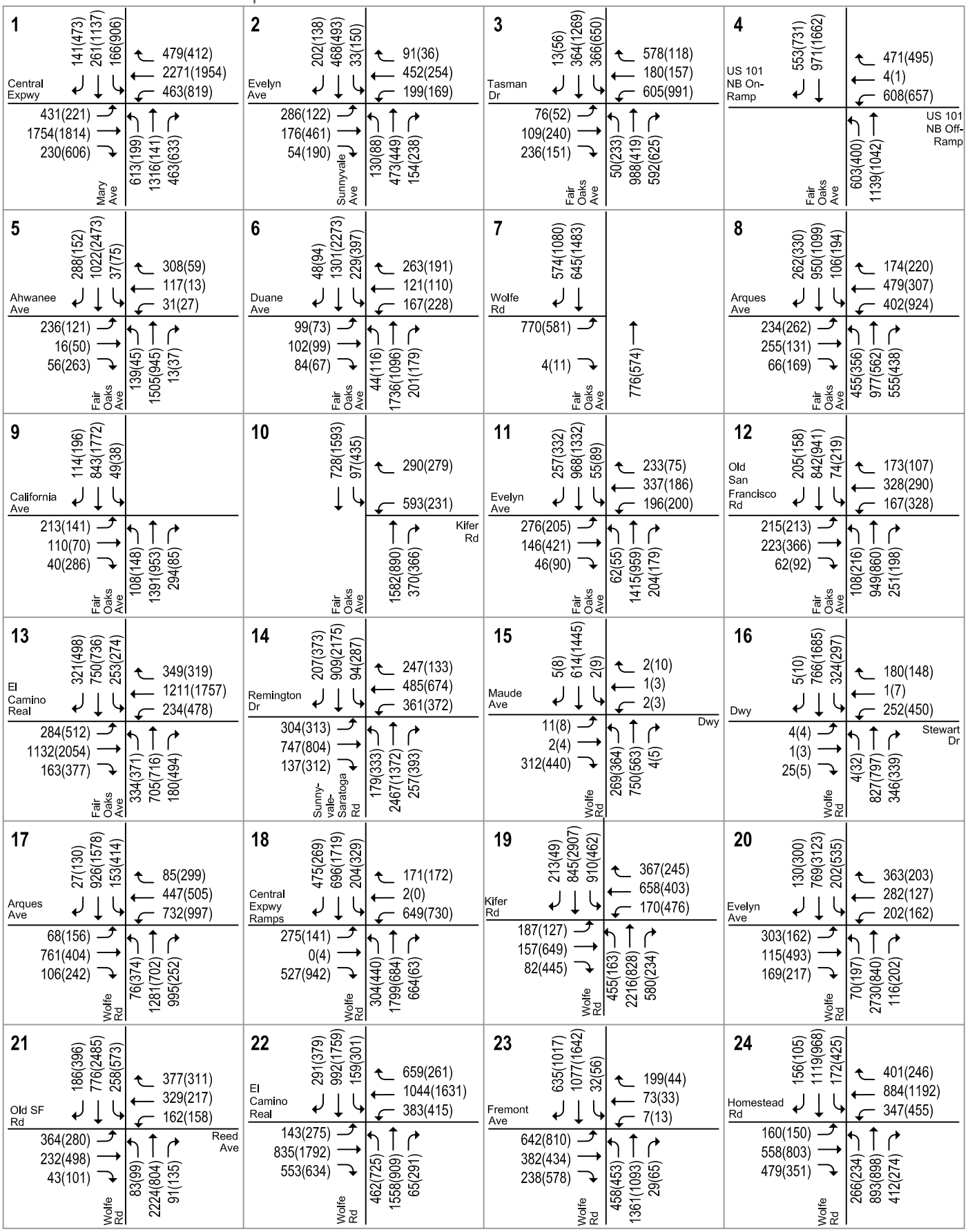
Improvements

1. Construct auxiliary lanes on eastbound SR 237 between Mathilda Avenue and Fair Oaks Avenue.
2. Extend express lanes on SR 237 to SR 85.
3. Construct auxiliary lanes on southbound US 101 between Lawrence Expressway and Great America Parkway, and between Ellis Street and SR 237.
4. Construct auxiliary lanes on southbound SR 85 between SR 237 and El Camino Real.
5. Reconstruct the US 101/Mathilda and SR 237/Mathilda interchanges.
6. Widen the ramp from northbound SR 85 to eastbound SR 237 to two lanes. Construct an auxiliary lane on eastbound SR 237 from SR 85 to Middlefield Road.
7. Extend Mary Avenue north over the SR 237/US 101 interchange via a flyover and connect with Enterprise Way.
8. Construct auxiliary lane on southbound Lawrence Expressway between the SR 237 loop ramps.
9. Construct auxiliary lanes on Central Expressway between Mary Avenue and Lawrence Expressway.
10. Widen Central Expressway between Lawrence Expressway and San Tomas Expressway to six lanes.

LEGEND

- = Current LSAP Boundary
- = Intuitive Surgical Parcels Proposed for Inclusion in LSAP
- = City of Sunnyvale

Figure 14
Roadway Improvements Within Close Proximity of Sunnyvale Assumed in the Model



LEGEND

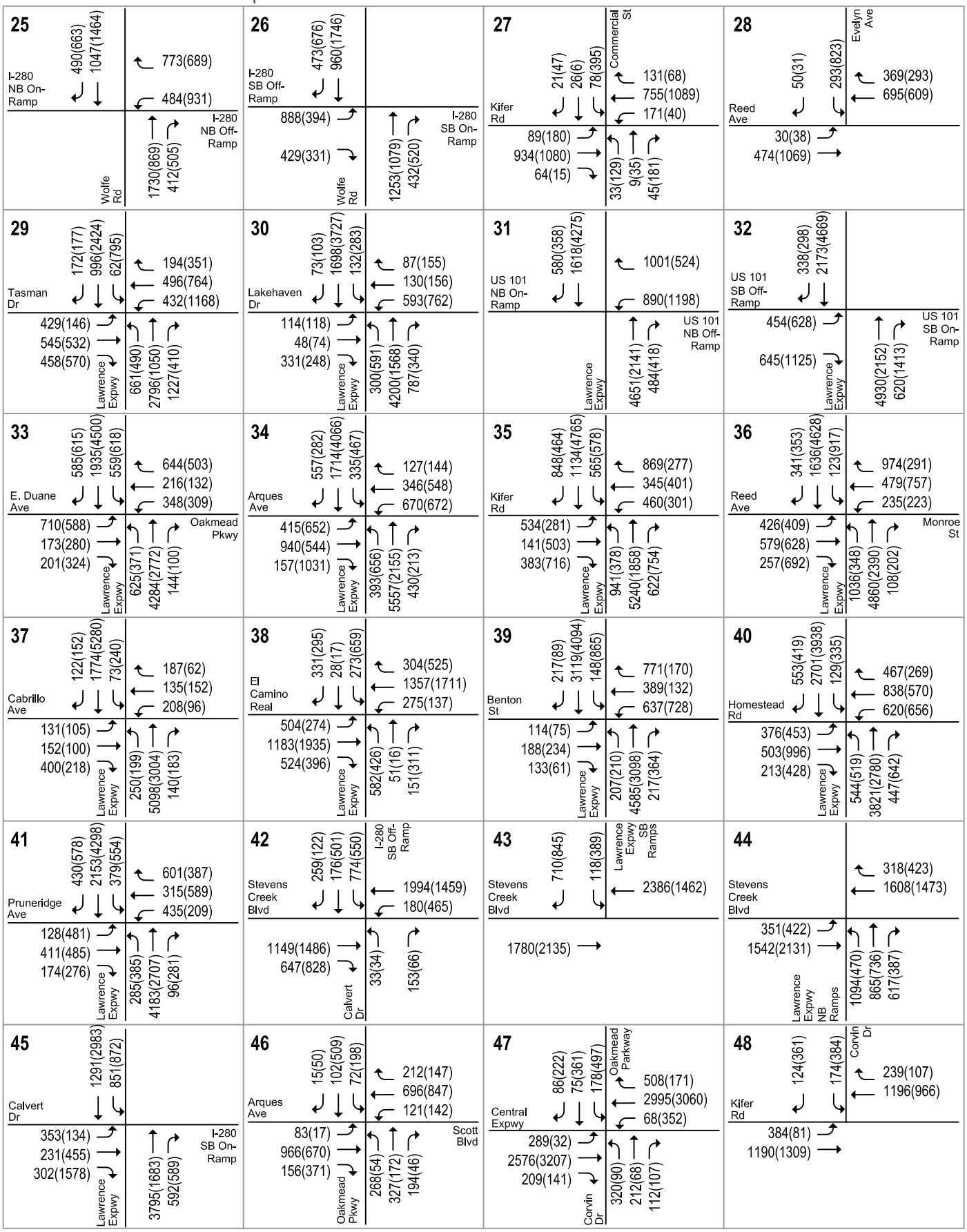
XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 15

Year 2035 Cumulative Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

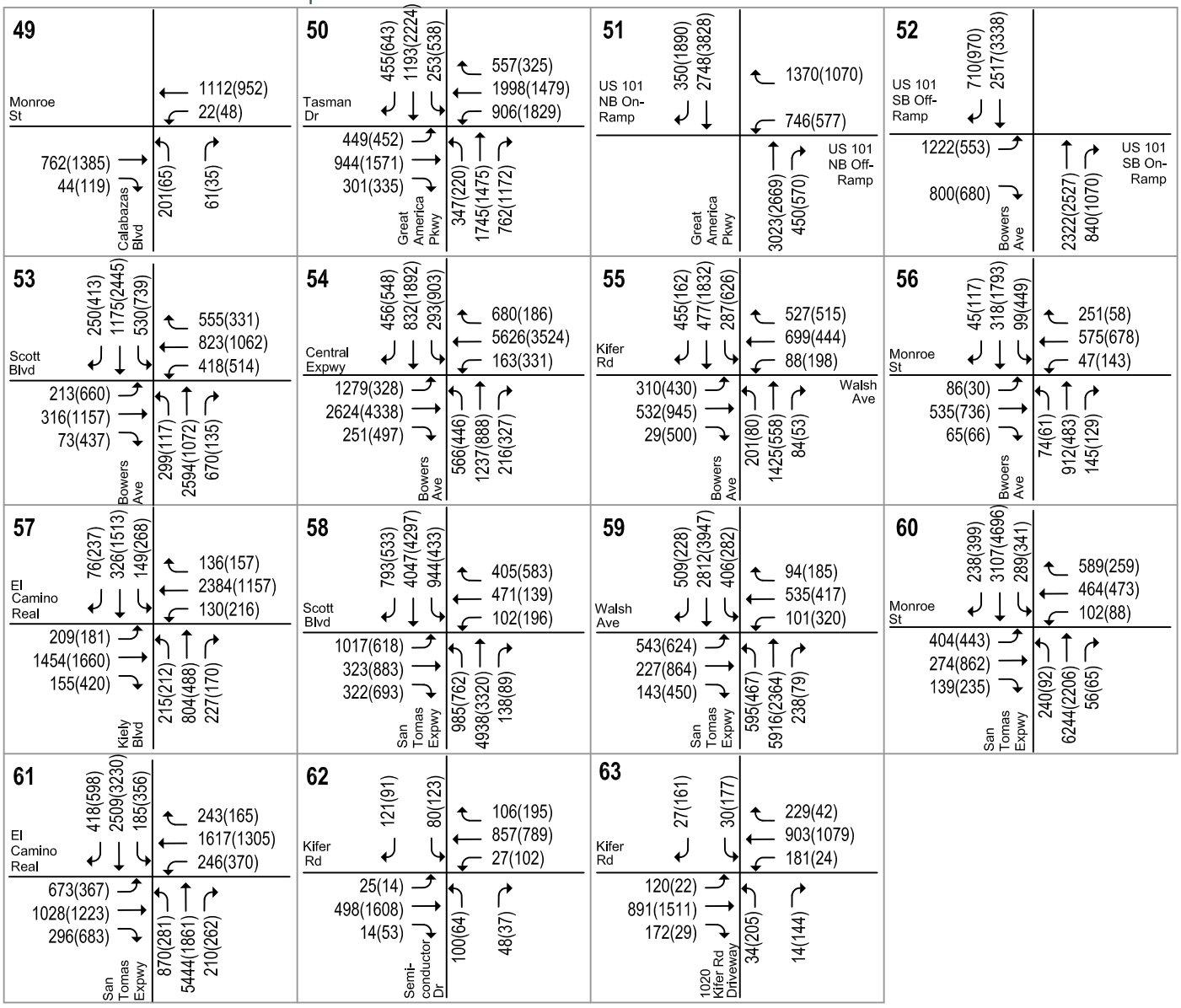
XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 15

Year 2035 Cumulative Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

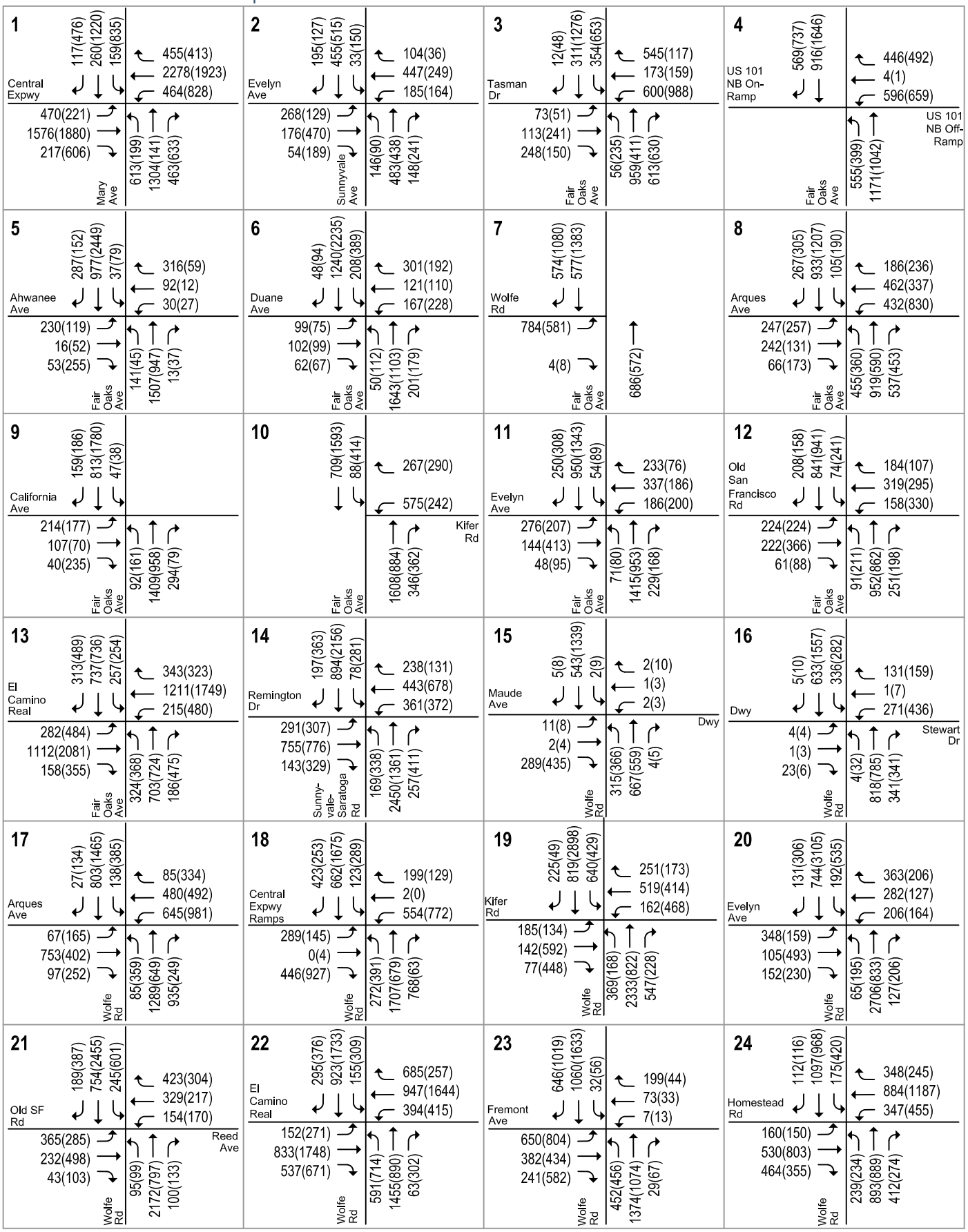
XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 15

Year 2035 Cumulative Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

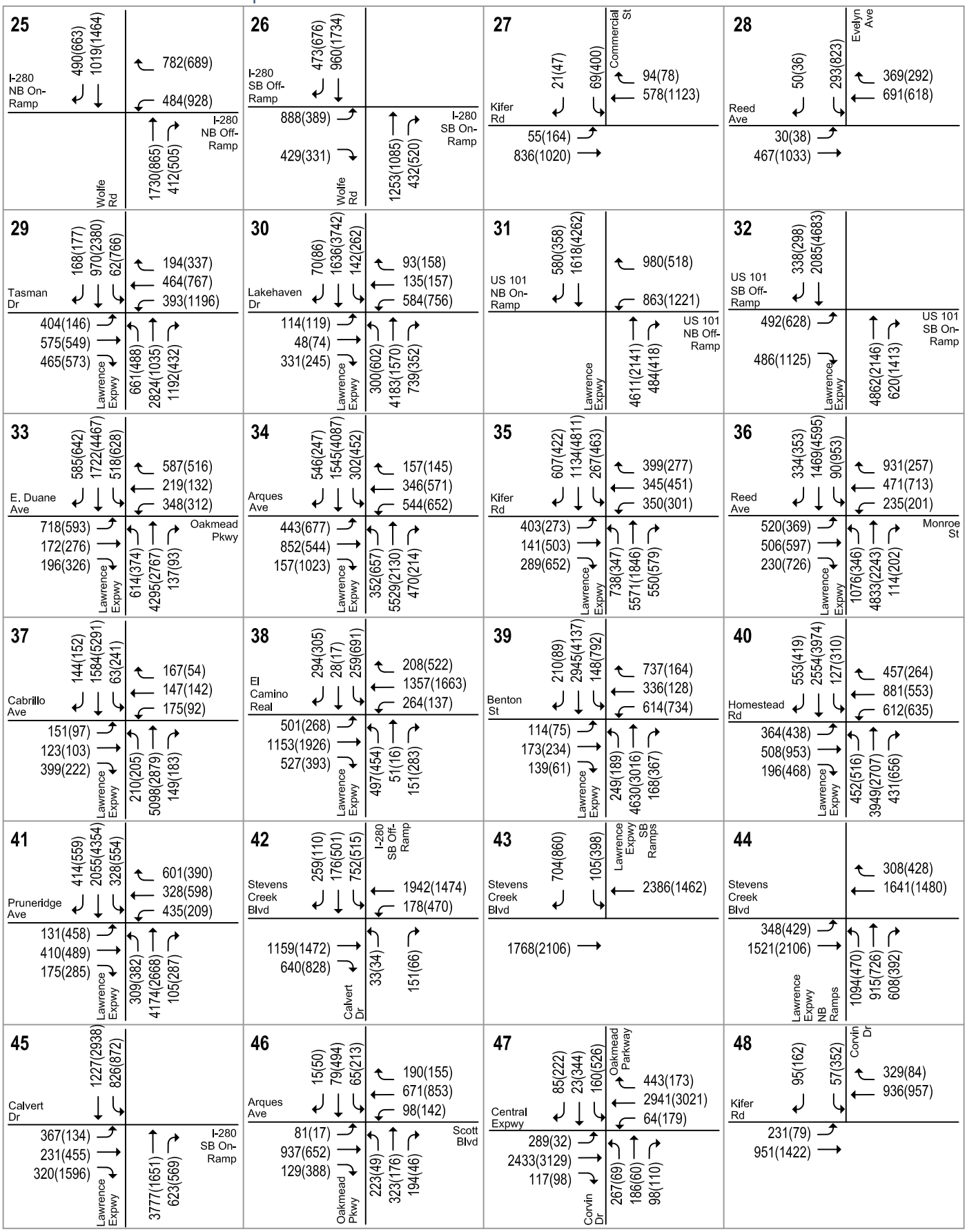
XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 16

Cumulative no LSAP Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

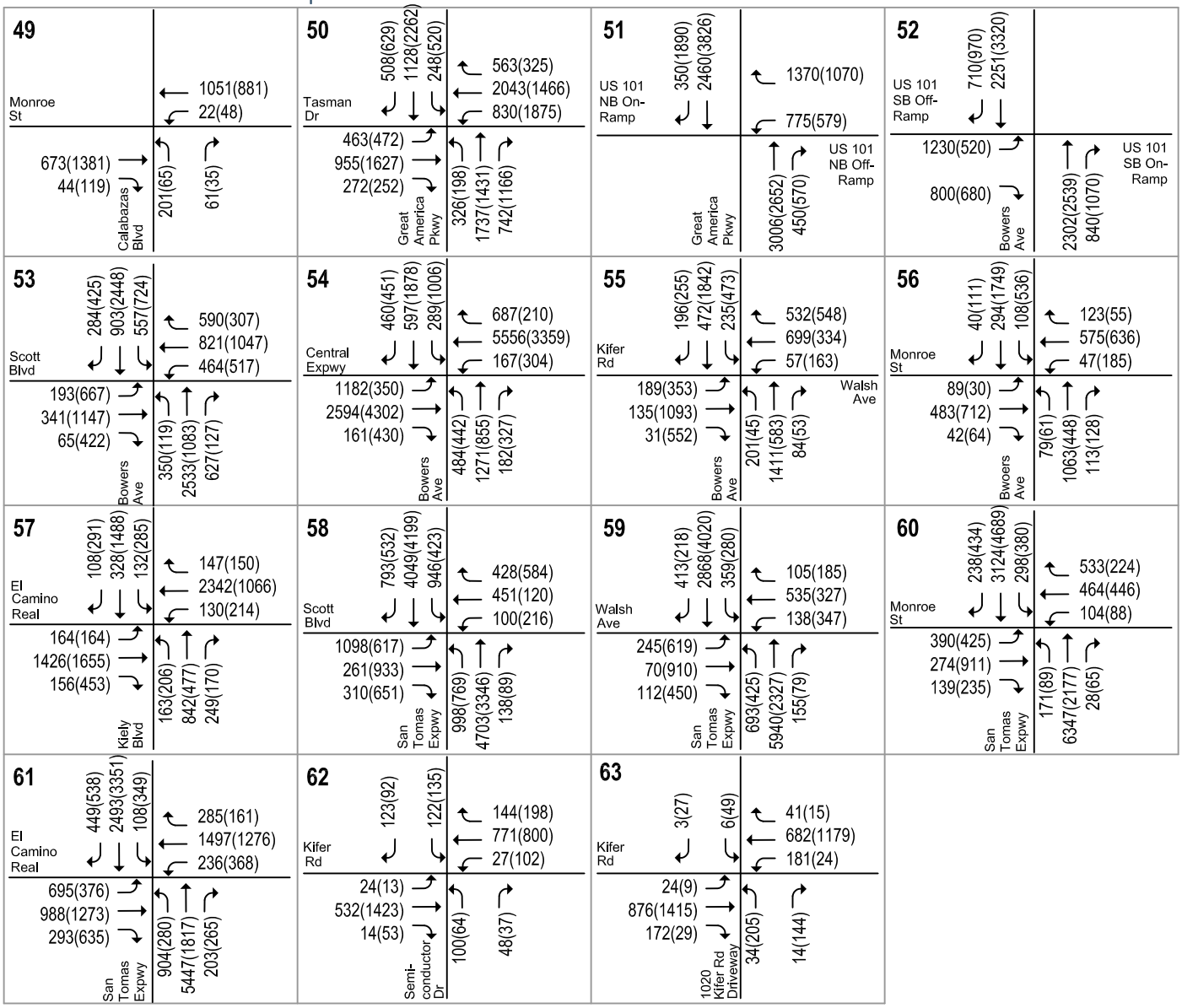
XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 16

Cumulative no LSAP Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 16
Cumulative no LSAP Conditions Traffic Volumes

HEXAGON

NORTH
Not to Scale

Intersection Lane Configurations

Intersection lane configurations under year 2035 cumulative conditions are shown on Figure 17. The following intersection improvements were assumed under the year 2035 cumulative conditions:

- As part of the approved Butcher's Corner project, the project will be providing the right-of-way necessary along the project frontage on Wolfe Road to allow south Wolfe Road to be widened to include a southbound right-turn lane at the intersection of Wolfe Road and Fremont Avenue.

- As documented in the *Valley Transportation Plan 2040,* Central Expressway is planned to be widened to six through lanes between Lawrence Expressway and San Tomas Expressway. At the intersection at Central Expressway and Oakmead Parkway, the eastbound and westbound approaches will be widened to include three through lanes in each direction.

- As documented in the City of Santa Clara *Multimodal Improvement Plan*, adopted by the City Council in September 2018, the City Place project will be fully responsible for implementing the following intersection improvements at the following study intersections within the City of Santa Clara:

    - Lawrence Expressway & Benton Street: Add a second southbound left-turn lane and a second eastbound left-turn lane.

    - Lawrence Expressway & Homestead Road: Add a third eastbound through lane and a third westbound through lane.

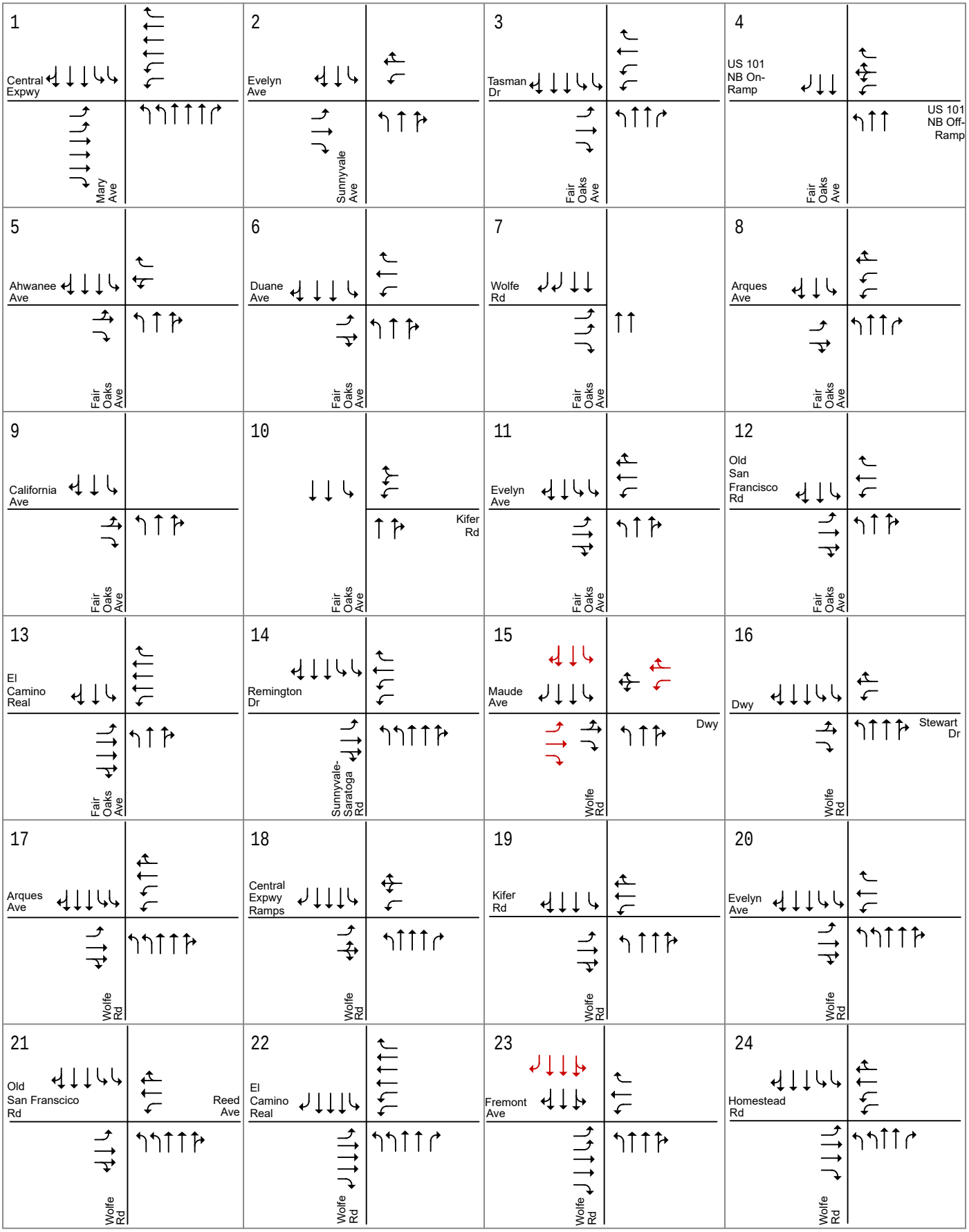
    - Great America Parkway & Tasman Drive: Add a southbound right-turn lane and a third westbound left-turn lane.

    - Bowers Avenue & Central Expressway: Add a third southbound left-turn lane and a third eastbound left-turn lane.

    - Bowers Avenue & Monroe Street: Add a northbound and a southbound left-turn lane. Change northbound and southbound to protected left-turn phasing.

    - San Tomas Expressway & Walsh Avenue: Add a second eastbound left-turn lane.

In addition, the currently unsignalized intersection at Wolfe Road and Maude Avenue is being signalized by Intuitive Surgical as a part of the 1050 Kifer Road project. The unsignalized intersection at Commercial Street and Kifer Road will be signalized by Intuitive Surgical as part of the 932 Kifer Road project and by Fortinet as part of the 901 Kifer Road project. Therefore, both unsignalized intersections are assumed to be signalized under future conditions.



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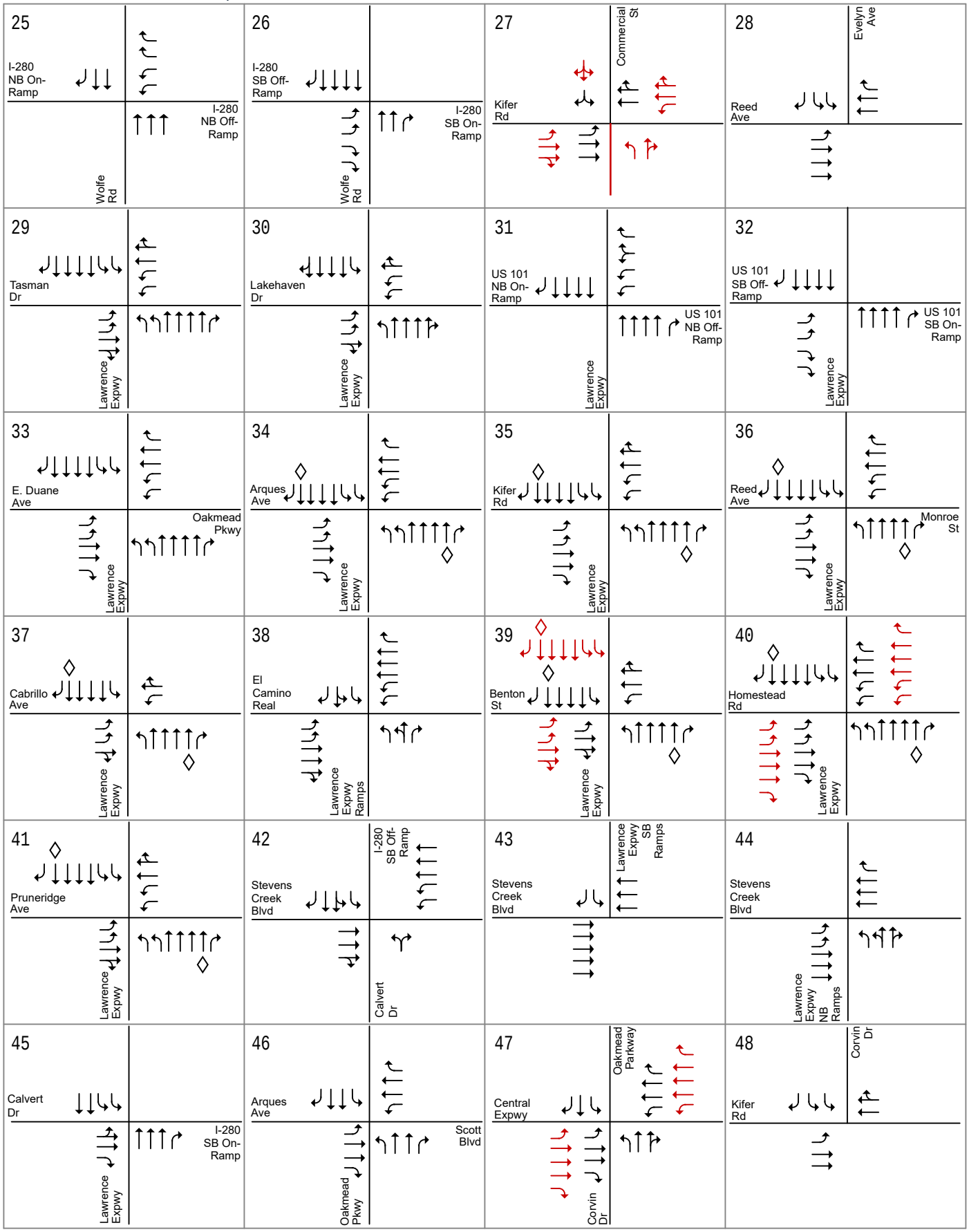
◊ = HOV Lane → = Improvement

Figure 17

Year 2035 Cumulative Conditions Lane Configurations

HEXAGON

NORTH
Not to Scale



LEGEND

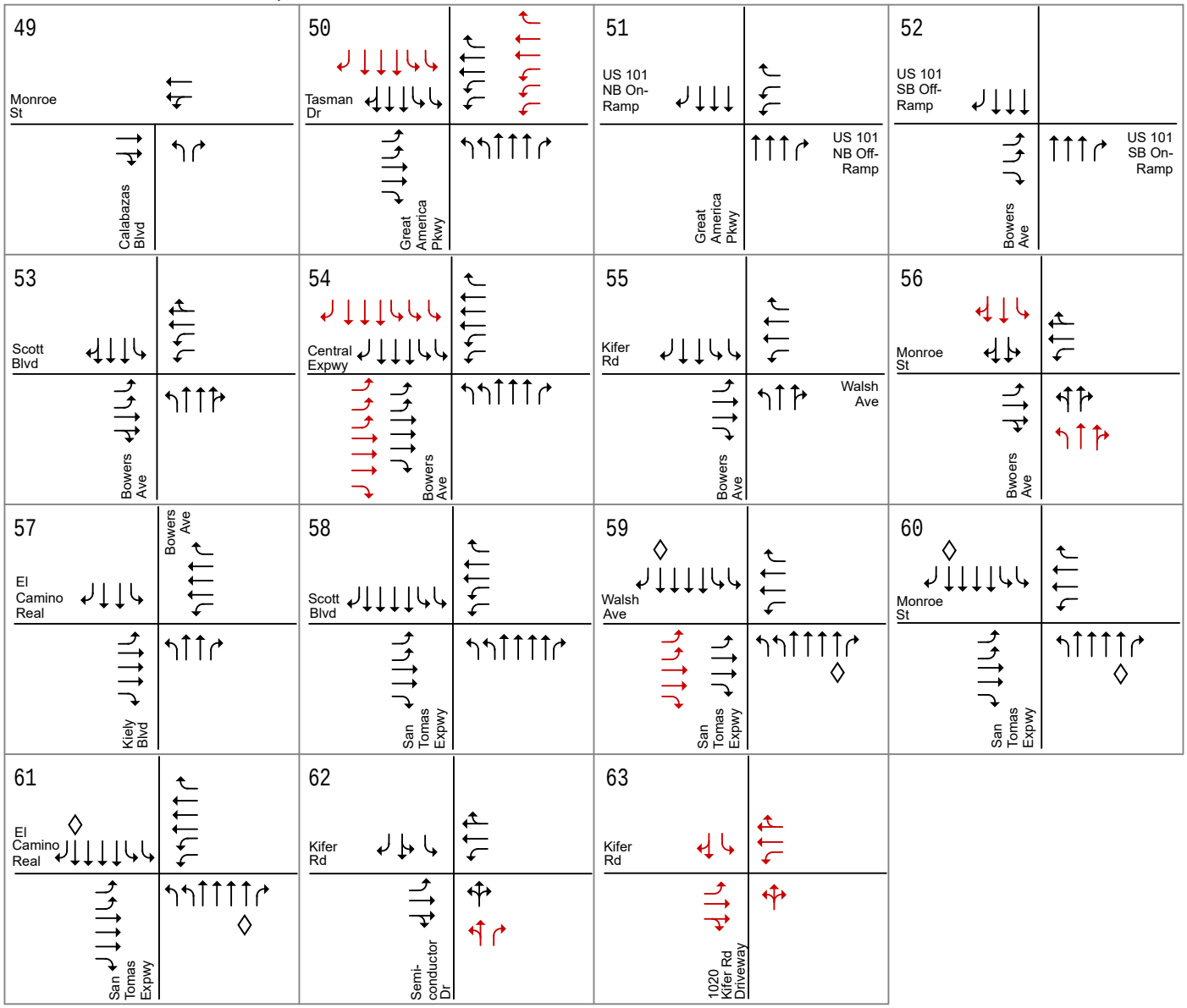
◇ = HOV Lane → = Improvement

Figure 17

Year 2035 Cumulative Conditions Lane Configurations

HEXAGON

NORTH
Not to Scale



LEGEND

◊ = HOV Lane → = Improvement

Figure 17
Year 2035 Cumulative Conditions Lane Configurations

Definition of Intersection Impacts at Signalized Intersections

The LSAP-Update is said to create an adverse impact on traffic conditions at a signalized intersection if for the study peak hour:

1. The level of service at the intersection drops below its respective level of service standard when project traffic is added; or
2. An intersection that operates below its level of service standard under no project conditions experiences an increase in critical-movement delay of four (4) or more seconds, *and* the critical volume-to-capacity ratio (v/c) is increased by 0.01 or more when project traffic is added.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the threshold is when the project increases the critical V/C value by 0.01 or more.

An impact by the City of Sunnyvale, City of Santa Clara and CMP standards is said to be satisfactorily addressed when measures are implemented that would restore intersection conditions to its LOS standard *or* to an average delay equal to without-project conditions or better.

Intersection Levels of Service Under Year 2035 Cumulative Conditions

The intersection levels of service results for the year 2035 cumulative conditions were compared to the Cumulative no LSAP-Update conditions to determine potential adverse intersection impacts (see Table 9 and Figure 18). Some of the adversely impacted intersections were previously identified with a significant impact in the certified 2016 LSAP EIR. The LSAP-Update generated adverse impacts at these intersections would be considered substantially more severe than identified in the certified 2016 LSAP EIR.

County of Santa Clara Intersections:

- Lawrence Expressway & Cabrillo Avenue
- Lawrence Expressway & Benton Street
- Lawrence Expressway & Pruneridge Avenue

The LSAP-Update identifies new adverse impacts not previously identified with a significant impact in the certified 2016 LSAP EIR at the intersections listed below. The LSAP-Update generated adverse impacts at these intersections would be considered new impacts from the certified 2016 LSAP EIR.

City of Sunnyvale Intersections:

- Wolfe Road & Arques Avenue
- Wolfe Road & Central Expressway Ramps
- Wolfe Road & Kifer Road

Caltrans Intersections:

- Wolfe Road & El Camino Real
- San Tomas Expressway & El Camino Real

County of Santa Clara Intersections:

- Lawrence Expressway & Oakmead Parkway
- Lawrence Expressway & Arques Avenue
- Lawrence Expressway & Kifer Road
- Lawrence Expressway & Monroe Street

- Oakmead Parkway & Central Expressway
- Bowers Avenue & Central Expressway
- San Tomas Expressway & Scott Boulevard
- San Tomas Expressway & Walsh Avenue
- San Tomas Expressway & Monroe Street

City of Santa Clara Intersections:

- Bowers Avenue & Scott Boulevard
- Bowers Avenue & Kifer Road

Table 9
Year 2035 Cumulative Conditions Levels of Service

#	Intersection	Peak Hour	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
1	Mary Avenue & Central Expressway (County*)	AM	**101.5**	**F**	**94.5**	**F**	**-12.6**	**-0.010**
		PM	**101.4**	**F**	**101.5**	**F**	**1.4**	**0.008**
2	Sunnyvale Avenue & Evelyn Avenue	AM	40.4	D	40.5	D	0.0	0.002
		PM	39.3	D	39.3	D	0.1	0.000
3	Fair Oaks Avenue & Tasman Drive	AM	35.6	D+	36.2	D+	0.2	0.010
		PM	47.7	D	47.6	D	-0.1	0.000
4	Fair Oaks Avenue & US 101 NB Ramps	AM	31.8	C	38.4	D+	14.6	0.059
		PM	53.8	D-	54.9	D-	2.0	0.006
5	Fair Oaks Avenue & Ahwanee Avenue	AM	23.5	C	23.4	C	-0.4	-0.006
		PM	16.6	B	16.8	B	0.0	0.005
6	Fair Oaks Avenue & Duane Avenue	AM	36.4	D+	40.5	D	7.8	0.054
		PM	38.1	D+	38.4	D+	0.5	0.003
7	Fair Oaks Avenue & Wolfe Road	AM	23.7	C	23.5	C	0.5	0.020
		PM	18.4	B-	18.3	B-	-0.2	0.028
8	Fair Oaks Avenue & Arques Avenue	AM	**98.2**	**F**	**97.1**	**F**	**-0.9**	**-0.002**
		PM	**114.3**	**F**	**109.7**	**F**	**-13.9**	**-0.033**
9	Fair Oaks Avenue & California Avenue	AM	22.6	C+	23.2	C	0.1	-0.003
		PM	24.7	C	22.8	C+	-3.5	-0.029
10	Fair Oaks Avenue & Kifer Road	AM	38.9	D+	43.2	D	6.4	0.025
		PM	32.9	C-	32.8	C-	0.6	0.006
11	Fair Oaks Avenue & Evelyn Avenue	AM	41.7	D	41.4	D	-0.5	-0.007
		PM	37.6	D+	36.7	D+	-1.3	-0.011
12	Fair Oaks Avenue & Old SF Road	AM	39.8	D	40.4	D	-0.1	-0.001
		PM	50.3	D	49.8	D	-1.3	-0.014
13	Fair Oaks Avenue & El Camino Real (*)	AM	58.4	E+	60.9	E	2.3	0.013
		PM	**>120**	**F**	**>120**	**F**	**1.1**	**0.002**
14	Sunnyvale-Saratoga Road & Remington Drive (*)	AM	65.3	E	71.0	E	11.5	0.040
		PM	**104.6**	**F**	**106.0**	**F**	**2.0**	**0.005**
15	Wolfe Road & Maude Avenue	AM	33.8	C-	33.6	C-	-0.4	0.007
		PM	28.9	C	29.8	C	0.7	0.031
16	Wolfe Road & Stewart Drive	AM	36.9	D+	35.2	D+	-1.2	-0.013
		PM	37.7	D+	37.7	D+	0.3	0.033
17	Wolfe Road & Arques Avenue	AM	**75.4**	**E-**	**90.6**	**F**	**31.0**	**0.077**
		PM	**68.3**	**E**	**72.6**	**E**	**6.4**	**0.029**
18	Wolfe Rd. & Central Expwy. Ramps	AM	**89.8**	**F**	**116.1**	**F**	**18.8**	**0.042**
		PM	**>120**	**F**	**>120**	**F**	**26.9**	**0.060**
19	Wolfe Road & Kifer Road	AM	**>120**	**F**	**>120**	**F**	**102.8**	**0.226**
		PM	**>120**	**F**	**>120**	**F**	**8.5**	**0.019**
20	Wolfe Road & Evelyn Avenue	AM	**75.8**	**E-**	**69.7**	**E**	**-8.2**	**-0.022**
		PM	**67.7**	**E**	**67.1**	**E**	**-1.0**	**-0.002**
21	Wolfe Road & Reed Avenue	AM	**69.7**	**E**	**66.3**	**E**	**-5.1**	**-0.017**
		PM	**55.7**	**E+**	**56.2**	**E+**	**1.5**	**0.008**

Notes:
** = CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service
BOLD and boxed indicates an adverse cumulative impact

Table 9 (continued)
Year 2035 Cumulative Conditions Levels of Service

#	Intersection	Peak Hour	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
22	Wolfe Road & El Camino Real (*)	AM	66.1	E	65.6	E	-0.5	0.008
		PM	**82.3**	**F**	**85.5**	**F**	**5.5**	**0.014**
23	Wolfe Road & Fremont Avenue	AM	**55.9**	**E+**	**56.0**	**E+**	**0.3**	**0.004**
		PM	**60.7**	**E**	**60.7**	**E**	**-0.6**	**-0.007**
24	Wolfe Road & Homestead Road	AM	39.6	D	40.5	D	2.3	0.038
		PM	45.4	D	45.9	D	1.1	0.006
25	Wolfe Road & I-280 NB Ramps (CU*)	AM	8.9	A	8.8	A	-0.1	-0.004
		PM	15.1	B	15.2	B	0.0	0.001
26	Wolfe Road & I-280 SB Ramps (CU*)	AM	13.9	B	13.9	B	0.0	0.000
		PM	8.8	A	8.8	A	0.1	0.000
27	Commercial Street & Kifer Road	AM	10.1	B+	22.5	C+	10.2	0.232
		PM	25.6	C	43.5	D	18.5	0.134
28	Evelyn Avenue & Reed Avenue	AM	10.6	B+	10.6	B+	0.0	0.000
		PM	13.2	B	13.2	B	0.0	0.001
29	Lawrence Expressway & Tasman Drive (County*)	AM	**>120**	**F**	**>120**	**F**	**2.1**	**0.010**
		PM	**>120**	**F**	**>120**	**F**	**-1.1**	**0.001**
30	Lawrence Expressway & Lakehaven Drive (County)	AM	**>120**	**F**	**>120**	**F**	**8.2**	**0.007**
		PM	**>120**	**F**	**>120**	**F**	**2.8**	**-0.001**
31	Lawrence Expressway & US 101 NB Ramps (County)	AM	26.8	C	29.5	C	4.2	0.014
		PM	24.4	C	23.4	C	-1.9	-0.003
32	Lawrence Expressway & US 101 SB Ramps (County)	AM	16.0	B	13.1	B	-2.1	0.062
		PM	79.4	E-	78.4	E-	-1.4	-0.002
33	Lawrence Expressway & Oakmead Parkway (County)	AM	**>120**	**F**	**>120**	**F**	**9.3**	**0.030**
		PM	**>120**	**F**	**>120**	**F**	**2.7**	**0.004**
34	Lawrence Expressway & Arques Avenue (County*)	AM	**>120**	**F**	**>120**	**F**	**35.9**	**0.083**
		PM	**>120**	**F**	**>120**	**F**	**2.7**	**0.009**
35	Lawrence Expressway & Kifer Road (County)	AM	**>120**	**F**	**>120**	**F**	**80.8**	**0.240**
		PM	**>120**	**F**	**>120**	**F**	**18.5**	**0.033**
36	Lawrence Expressway & Monroe Street (County*)	AM	**>120**	**F**	**>120**	**F**	**-75.6**	**-0.014**
		PM	**>120**	**F**	**>120**	**F**	**10.5**	**0.031**
37	Lawrence Expressway & Cabrillo Avenue (County)	AM	**>120**	**F**	**>120**	**F**	**10.4**	**0.044**
		PM	**>120**	**F**	**>120**	**F**	**-2.6**	**-0.007**
38	Lawrence Expressway Ramps & El Camino Real (SC*)	AM	38.7	D+	40.4	D	1.5	0.031
		PM	35.1	D+	34.1	C-	-2.4	-0.017
39	Lawrence Expressway & Benton Street (County)	AM	**>120**	**F**	**>120**	**F**	**2.3**	**0.009**
		PM	**>120**	**F**	**>120**	**F**	**-1.5**	**0.033**
40	Lawrence Expressway & Homestead Road (County*)	AM	**>120**	**F**	**>120**	**F**	**-11.3**	**-0.018**
		PM	**>120**	**F**	**>120**	**F**	**1.2**	**0.011**
41	Lawrence Expressway & Pruneridge Avenue (County)	AM	**>120**	**F**	**>120**	**F**	**8.5**	**0.035**
		PM	**>120**	**F**	**>120**	**F**	**1.0**	**-0.003**
42	I-280 SB Off-Ramp & Stevens Creek Boulevard (SC*)	AM	36.6	D+	37.3	D+	1.2	0.014
		PM	43.2	D	44.3	D	1.7	0.006

Notes:
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Table 9 (continued)
Year 2035 Cumulative Conditions Levels of Service

#	Intersection	Peak Hour	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C
43	Lawrence Expressway SB Ramps & Stevens Creek Boulevard (SC*)	AM	29.2	C	29.5	C	0.3	0.003
		PM	32.0	C	31.7	C	-0.4	-0.009
44	Lawrence Expressway NB Ramps & Stevens Creek Boulevard (SC*)	AM	44.5	D	43.1	D	-1.9	-0.014
		PM	31.6	C	31.6	C	-0.2	-0.003
45	Lawrence Expressway & I-280 SB On-Ramp (SJ*)	AM	**119.6**	**F**	**>120**	**F**	**3.5**	**0.003**
		PM	76.3	E-	80.0	E-	6.6	0.012
46	Oakmead Parkway & Scott Boulevard	AM	23.5	C	24.6	C	2.7	0.061
		PM	29.5	C	29.5	C	-0.7	-0.012
47	Oakmead Parkway & Central Expressway (County*)	AM	48.8	D	55.4	E+	12.1	0.042
		PM	66.9	E	**87.4**	**F**	**39.7**	**0.102**
48	Corvin Drive & Kifer Road (SC)	AM	11.1	B+	17.0	B	7.9	0.235
		PM	9.6	A	13.5	B	4.8	0.155
49	Calabazas Boulevard & Monroe Street (SC)	AM	8.9	A	8.9	A	0.1	0.027
		PM	2.7	A	2.7	A	0.0	0.001
50	Great America Parkway & Tasman Drive (SC*)	AM	**91.9**	**F**	**89.3**	**F**	**-5.8**	**-0.014**
		PM	**>120**	**F**	**>120**	**F**	**-17.6**	**-0.028**
51	Great America Parkway & US 101 NB Ramps (SC*)	AM	14.3	B	14.2	B	-0.6	-0.007
		PM	15.3	B	15.2	B	-0.1	0.000
52	Bowers Avenue & US 101 SB Ramps (SC*)	AM	21.9	C+	22.5	C+	1.9	0.038
		PM	12.0	B	12.9	B	1.0	0.014
53	Bowers Avenue & Scott Boulevard (SC*)	AM	**>120**	**F**	**>120**	**F**	**-4.6**	**0.000**
		PM	**>120**	**F**	**>120**	**F**	**7.8**	**0.018**
54	Bowers Avenue & Central Expressway (County*)	AM	**>120**	**F**	**>120**	**F**	**42.4**	**0.078**
		PM	**>120**	**F**	**>120**	**F**	**7.1**	**0.020**
55	Bowers Avenue & Kifer Road (SC)	AM	48.4	D	**64.3**	**E**	**29.9**	**0.086**
		PM	50.1	D	53.1	D-	-1.7	-0.001
56	Bowers Avenue & Monroe Street (SC)	AM	33.6	C-	33.3	C-	0.2	-0.005
		PM	**55.7**	**E+**	53.3	D-	-2.5	-0.004
57	Kiely Boulevard & El Camino Real (SC*)	AM	35.4	D+	39.0	D	5.6	0.037
		PM	55.7	E+	58.8	E+	4.6	0.013
58	San Tomas Expressway & Scott Boulevard (County*)	AM	**>120**	**F**	**>120**	**F**	**-47.6**	**0.010**
		PM	**108.5**	**F**	**109.5**	**F**	**4.2**	**0.008**
59	San Tomas Expressway & Walsh Avenue (County)	AM	**>120**	**F**	**>120**	**F**	**44.8**	**0.114**
		PM	**>120**	**F**	**>120**	**F**	**-0.1**	**-0.027**
60	San Tomas Expressway & Monroe Street (County*)	AM	**>120**	**F**	**>120**	**F**	**-7.9**	**0.022**
		PM	70.3	E	72.2	E	4.3	0.016
61	San Tomas Expressway & El Camino Real (County*)	AM	**>120**	**F**	**>120**	**F**	**7.5**	**0.041**
		PM	**107.1**	**F**	**99.2**	**F**	**-0.4**	**0.061**
62	Semiconductor Drive & Kifer Road	AM	19.9	B-	19.2	B-	-1.2	0.002
		PM	18.8	B-	19.5	B-	0.9	0.053
63	1020 Kifer Rd Driveway & Kifer Road	AM	20.0	B-	20.2	C+	0.3	0.020
		PM	28.9	C	34.9	C-	7.4	0.112

Notes:
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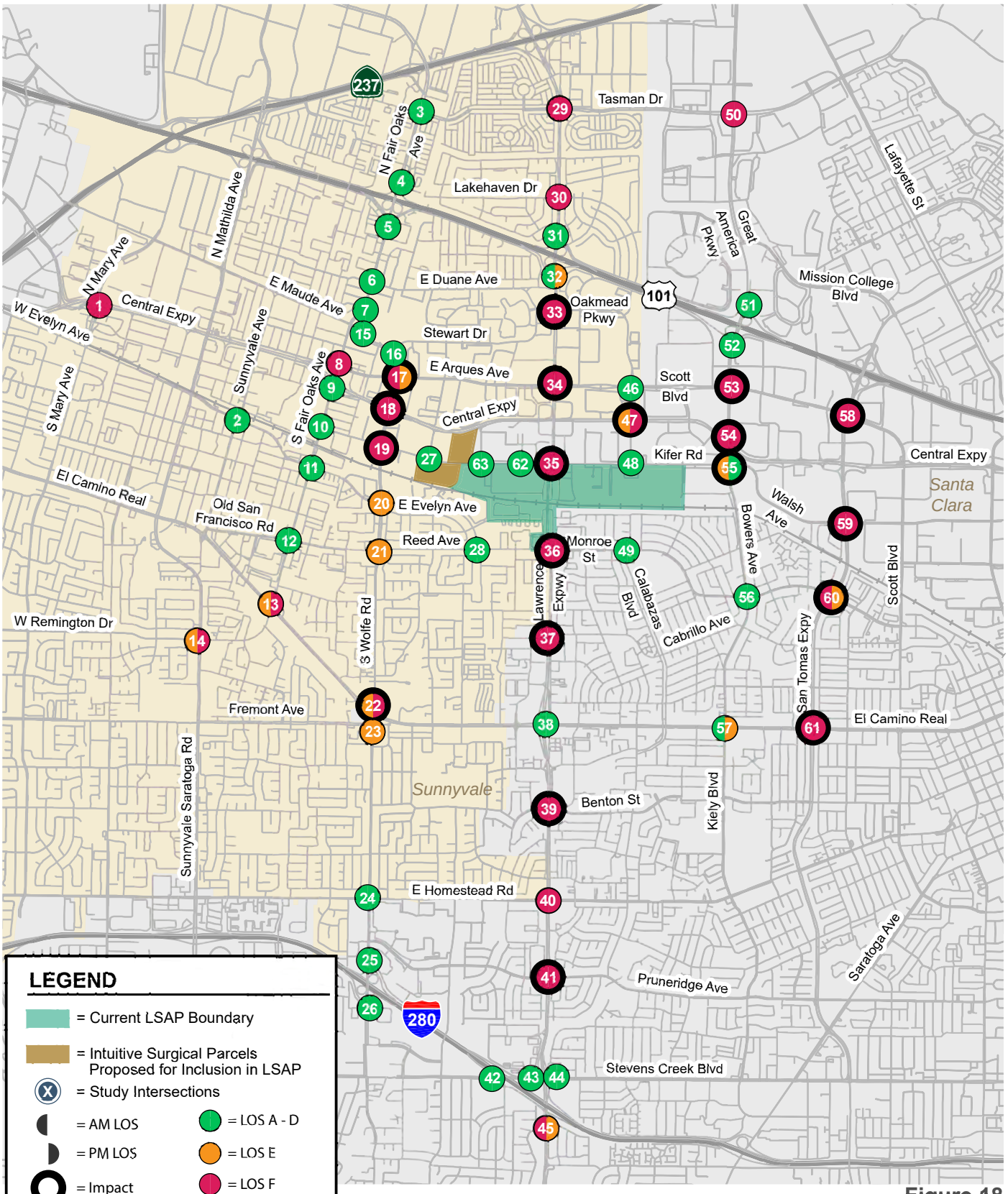


Figure 18
Year 2035 Cumulative Conditions Intersection Levels of Service Summary

The LSAP shall require projects within the plan area to make a fair share contribution toward the cost of the identified improvements.

The three intersections on Lawrence Expressway at Cabrillo Avenue, Benton Street, and at Pruneridge Avenue were impacted under the adopted LSAP. They continue to be impacted under the LSAP - Update. Other intersections impacted by the LSAP-Update were not identified with impacts under the adopted LSAP.

Potential improvement strategies are discussed below.

Potential Improvement Strategies for Intersection Impacts

Improvement options were studied for each intersection experiencing impacts under the year 2035 cumulative conditions when compared to cumulative no LSAP-Update conditions. An intersection impact can be satisfactorily addressed by implementing measures that would restore intersection conditions to Cumulative no LSAP-Update conditions. The LOS results under the improved year 2035 cumulative conditions are summarized in Table 10.

Table 10
Intersection Impact Improvement Summary

#	Intersection	Peak Hour	LOS Std.	Cumulative no LSAP-Update Avg. Delay (sec)	Cumulative no LSAP-Update LOS	Cumulative Conditions Avg. Delay (sec)	Cumulative Conditions LOS	Cumulative Conditions In Crit. Delay (sec)	Cumulative Conditions Incr. In Crit. V/C	Improved Avg. Delay (sec)	Improved LOS	Improved In Crit. Delay (sec)	Improved Incr. In Crit. V/C
17	Wolfe Road & Arques Avenue	AM	D	**75.4**	**E-**	**90.6**	**F**	**31.0**	**0.077**	Improvement Not Feasible			
		PM		**68.3**	**E**	**72.6**	**E**	**6.4**	**0.029**				
18	Wolfe Rd. & Central Expwy. Ramps	AM	D	**89.8**	**F**	**116.1**	**F**	**18.8**	**0.042**	82.3	F	-18.9	-0.489
		PM		**>120**	**F**	**>120**	**F**	**26.9**	**0.060**	>120	F	-139.6	-0.540
19	Wolfe Road & Kifer Road	AM	D	**>120**	**F**	**>120**	**F**	**102.8**	**0.226**	>120	F	-33.1	-0.075
		PM		**>120**	**F**	**>120**	**F**	**8.5**	**0.019**	91.5	F	-69.6	-0.156
22	Wolfe Road & El Camino Real (*)	AM	E	66.1	E	65.6	E	-0.5	0.008	50.2	D	-21.5	-0.092
		PM		**82.3**	**F**	**85.5**	**F**	**5.5**	**0.014**	71.0	E	-1.0	0.019
33	Lawrence Expressway & Oakmead Parkway (County)	AM	E	**>120**	**F**	**>120**	**F**	**9.3**	**0.030**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**2.7**	**0.004**				
34	Lawrence Expressway & Arques Avenue (County*)	AM	E	**>120**	**F**	**>120**	**F**	**35.9**	**0.083**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**2.7**	**0.009**				
35	Lawrence Expressway & Kifer Road (County)	AM	E	**>120**	**F**	**>120**	**F**	**80.8**	**0.240**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**18.5**	**0.033**				
36	Lawrence Expressway & Monroe Street (County*)	AM	E	**>120**	**F**	**>120**	**F**	**-75.6**	**-0.014**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**10.5**	**0.031**				
37	Lawrence Expressway & Cabrillo Avenue (County)	AM	E	**>120**	**F**	**>120**	**F**	**10.4**	**0.044**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**-2.6**	**-0.007**				
39	Lawrence Expressway & Benton Street (County)	AM	E	**>120**	**F**	**>120**	**F**	**2.3**	**0.009**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**-1.5**	**0.033**				
41	Lawrence Expressway & Pruneridge Avenue (County)	AM	E	**>120**	**F**	**>120**	**F**	**8.5**	**0.035**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**1.0**	**-0.003**				
47	Oakmead Parkway & Central Expressway (County*)	AM	E	48.8	D	55.4	E+	12.1	0.042	55.4	E+	12.1	0.042
		PM		66.9	E	**87.4**	**F**	**39.7**	**0.102**	68.5	E	1.0	0.007
53	Bowers Avenue & Scott Boulevard (SC*)	AM	E	**>120**	**F**	**>120**	**F**	**-4.6**	**0.000**	>120	F	-50.4	-0.149
		PM		**>120**	**F**	**>120**	**F**	**7.8**	**0.018**	>120	F	-26.9	-0.049
54	Bowers Avenue & Central Expressway (County*)	AM	E	**>120**	**F**	**>120**	**F**	**42.4**	**0.078**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**7.1**	**0.020**				
55	Bowers Avenue & Kifer Road (SC)	AM	D	48.4	D	**64.3**	**E**	**29.9**	**0.086**	45.9	D	-2.4	-0.010
		PM		50.1	D	53.1	D-	-1.7	-0.001	46.7	D	-2.6	-0.002
58	San Tomas Expressway & Scott Boulevard (County*)	AM	E	**>120**	**F**	**>120**	**F**	**-47.6**	**0.010**	Potential Future Interchange			
		PM		**108.5**	**F**	**109.5**	**F**	**4.2**	**0.008**				
59	San Tomas Expressway & Walsh Avenue (County)	AM	E	**>120**	**F**	**>120**	**F**	**44.8**	**0.114**	Potential Future Interchange			
		PM		**>120**	**F**	**>120**	**F**	**-0.1**	**-0.027**				
60	San Tomas Expressway & Monroe Street (County*)	AM	E	**>120**	**F**	**>120**	**F**	**-7.9**	**0.022**	Potential Future Interchange			
		PM		70.3	E	72.2	E	4.3	0.016				
61	San Tomas Expressway & El Camino Real (County*)	AM	E	**>120**	**F**	**>120**	**F**	**7.5**	**0.041**	Potential Future Interchange			
		PM		**107.1**	**F**	**99.2**	**F**	**-0.4**	**0.061**				

Notes:
* = *CMP, SC = Santa Clara, County = County of Santa Clara, SJ = San Jose*
">120" indicates this signalized intersection experiences lengthy delay that is beyond the reasonable calculation range of the HCM 2000 methodology.
BOLD indicates unacceptable level of service
BOLD and boxed indicates an adverse cumulative impact

Wolfe Road & Arques Avenue (#17)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS E during both the AM and PM peak hours. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

Potential Improvement: Improvement would require restriping the northbound approach to include 2 left-turn lanes, 2 through lanes, and 1 dedicated right-turn lane. The northbound bike lane would need to be moved to the west side of the proposed right-turn lane. The westbound approach would require restriping to include 2 left-turn lanes, 1 shared left-through lane, and 1 shared through-right lane. Eastbound and westbound approaches would need to operate with split phasing. This improvement would not increase the pedestrian and bicycle exposure time to traffic at the intersection. No right-of-way acquisition would be required. It should be noted that split phasing operates favorably to protected phasing only under certain circumstances.

With the proposed improvement, the intersection would remain operating at LOS E under cumulative conditions during both the AM and PM peak hours, but the intersection operations would improve in comparison to the Cumulative no LSAP-Update conditions. However, this improvement conflicts with the road diet proposed on Wolfe Road in the Sunnyvale Active Transportation Plan and therefore is considered infeasible.

Wolfe Road & Central Expressway Ramps (#18)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening both the eastbound and westbound Central Expressway off-ramps to include one left-turn lane, one shared through-left lane and one right-turn lane. There appears to be sufficient right-of-way to accommodate the potential improvements. The improvements would lengthen the respective crosswalks by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would remain operating at LOS F under cumulative conditions during both the AM and PM peak hours, but the intersection operations would improve in comparison to the Cumulative no LSAP-Update conditions. However, the improvement requires widening the Central Expressway off-ramps, which are in the County's jurisdiction, so the City cannot ensure the implementation of the potential improvement. All projects within the plan area shall contribute their fair share towards the identified improvement.

Wolfe Road & Kifer Road (#19)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The improvement at this intersection to widen all approaches to include a second left-turn lane. All legs of the intersection could require widening by up to 12 feet. The widened approaches would increase traffic exposure time for pedestrians by 3 to 5 seconds and 1 to 3 seconds for bicyclists crossing the intersection.

With the proposed improvement, the intersection would remain operating at LOS F under cumulative conditions during both the AM and PM peak hours, but the intersection operations would improve in comparison to the Cumulative no LSAP-Update conditions. All projects within the plan area shall contribute their fair share towards the identified improvement.

Wolfe Road and El Camino Real (#22) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The Sunnyvale City Council approved a concept on June 21, 2016 for a project to improve the Wolfe Road intersections with El Camino Real and with Fremont Avenue, as well as signalizing the intersection at Fremont Avenue and El Camino Real (see Figure 19). Right-of-way acquisition would be required. Bicycle improvements include the

extension of bike lanes and installation of bike boxes, and they are detailed in the *Wolfe Road Corridor Traffic Improvement Study*, prepared by Kimley-Horn dated February 2016. This improvement (Triangle – Refined Alternative 3) would require signal coordination between the two Wolfe Road intersections and the new signalized Fremont Avenue and El Camino Real intersection.

With the proposed improvement, the intersection would operate at an acceptable LOS E under cumulative conditions during the PM peak hour. Modification to this intersection will trigger modifications at the Wolfe Road and Fremont Avenue intersection and the Fremont Avenue and El Camino Real intersection as well. Therefore, the LSAP shall require projects within the plan area to contribute a fair share contribution towards the identified improvements at all three intersections.

Lawrence Expressway & Oakmead Parkway (#33)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the AM peak hour. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impact.

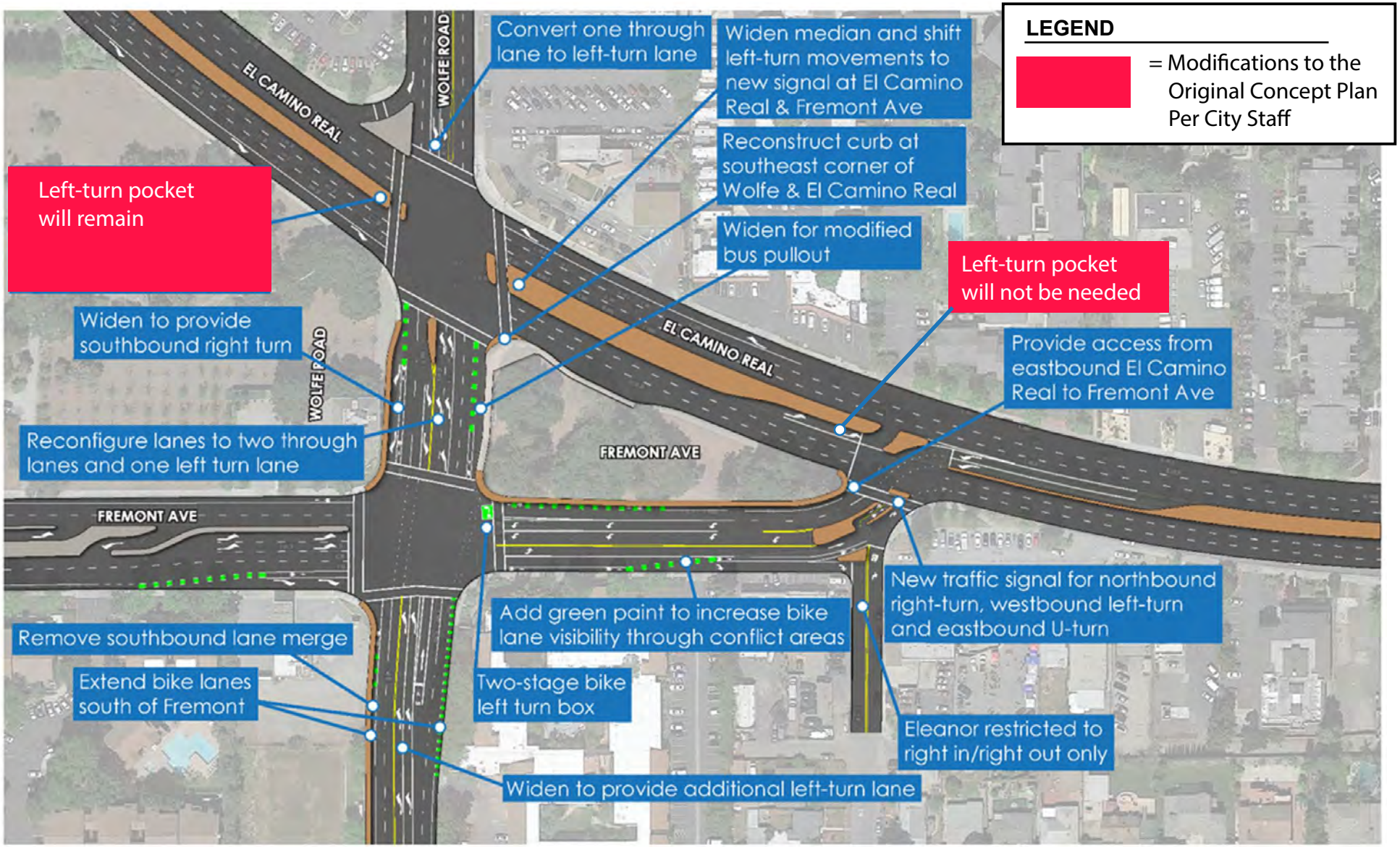
The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Oakmead Parkway/Duane Avenue. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area and City shall coordinate with the County on this improvement.

Lawrence Expressway with Arques Avenue and Monroe Street (#34, #36) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the AM peak hour for the intersection of Lawrence Expressway and Arques Avenue and PM peak hour for the intersection of Lawrence Expressway and Monroe Street. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet VTA's CMP adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at these intersections. This would improve the north-south flow of traffic and potentially address the project's impact.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the grade separation on Lawrence Expressway at Arques Avenue and at Monroe Street. These intersections are under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at these intersections. Future project applicants within the LSAP area and City shall coordinate with the County on this improvement.



SOURCE: Wolfe Road Corridor Traffic Improvement Study, February, 2016.

Figure 19
Potential Improvement at Wolfe Road and Fremont Avenue

Lawrence Expressway and Kifer Road (#35)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the AM and PM peak hours at this intersection. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the grade separation at Lawrence Expressway and Kifer Road. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area and City shall coordinate with the County on this improvement.

Lawrence Expressway at Cabrillo Avenue, at Benton Street and at Pruneridge Avenue (#37, 39, 41)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F at all three intersections. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at all these intersections. This would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of these grade separations. These intersections are under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area shall coordinate with the County on these improvements.

Oakmead Parkway & Central Expressway (#47) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an acceptable LOS E during the PM peak hour. The addition of LSAP-Update traffic would deteriorate traffic operations to an unacceptable LOS F, which meets the City of Sunnyvale's adverse intersection impact criteria.

> **Potential Improvement: I**mprovement at this intersection would require further widening of westbound Central Expressway to include two left-turn lanes. This improvement can be accommodated within the existing right-of-way.

With the proposed improvement, the intersection would operate at an acceptable LOS E under cumulative conditions during the PM peak. The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the identified improvement. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area and City shall coordinate with the County on this improvement.

Bowers Avenue & Scott Boulevard (#53) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the PM peak hour. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio, which meets the City of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening southbound Bowers Avenue to include a second southbound left-turn lane. This improvement could potentially be accommodated within the existing right-of-way by removing the existing median.

With the proposed improvement, the intersection would remain operating at LOS F under cumulative conditions during the PM peak, but the intersection operations would improve in comparison to the Cumulative no LSAP-Update conditions. However, the intersection is in the City of Santa Clara's jurisdiction, so Sunnyvale cannot ensure the implementation of the potential improvement.

Bowers Avenue & Central Expressway (#54) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during both the AM and PM peak hours at this intersection. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio to meet the County of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at this intersection. This would improve the east-west flow of traffic and potentially address the project's impacts.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area and the City shall coordinate with the County on this improvement.

Bowers Avenue & Kifer Road (#55)

Under Cumulative no LSAP-Update conditions, the LOS would be an acceptable LOS D during the AM peak hour. The addition of LSAP-Update traffic would deteriorate traffic operations to an unacceptable LOS E, which meets the City of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** Improvement would require widening eastbound Kifer Road to include a second eastbound left-turn lane. This improvement could potentially be accommodated within the existing right-of-way.

With the proposed improvement, the intersection would operate at an acceptable LOS D under cumulative conditions during the AM peak. The LSAP shall require projects within the plan area to contribute their fair share towards the cost of the identified improvement. However, the intersection is in City of Santa Clara's jurisdiction, so Sunnyvale cannot ensure the implementation of the potential improvement.

San Tomas Expressway at Scott Boulevard, at Monroe Street, and at El Camino Real (#58, 60, 61) [CMP]

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F at all three intersections. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** The County of Santa Clara has identified a future project to provide a grade separation at all these intersections. These would improve the north-south flow of traffic and potentially address the project's impacts.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of these grade separations. These intersections are under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersections. Future project applicants within the LSAP area shall coordinate with the County on these improvements.

San Tomas Expressway at Walsh Avenue (#59)

Under Cumulative no LSAP-Update conditions, the LOS would be an unacceptable LOS F during the AM peak. The addition of LSAP-Update traffic would increase both the critical-movement delay and V/C ratio sufficient to meet the City of Santa Clara's adverse intersection impact criteria.

> **Potential Improvement:** A grade separation would be required at this intersection to alleviate the LSAP-Update intersection impact. This improvement could improve the north-south flow of traffic and potentially address the project's impacts. However, the County of Santa Clara currently has no plans to construct a grade separation at this intersection.

The LSAP shall require projects within the plan area to contribute their fair share towards the cost of this grade separation. This intersection is under Santa Clara County's jurisdiction; therefore, it is up to the County to approve and advance the proposed improvement at the intersection. Future project applicants within the LSAP area shall coordinate with the County on these improvements.

Freeway Levels of Service

In analyzing the freeway segments, the Sunnyvale Travel Demand Forecast Model (STFM) was used to project the increase in traffic volumes between existing and the year 2035 cumulative conditions. VTA CMP guidelines require freeway levels of service to be calculated based on density. However, congested freeway speed (used to measure density) cannot be accurately modeled. For the purpose of this study, freeway levels of service under the year 2035 cumulative conditions are instead calculated based on volume to capacity (V/C) ratio. A freeway segment is assumed to operate at LOS F under the year 2035 cumulative conditions if,

- The freeway segment already operates at LOS F under existing conditions, or
- The STFM forecasts the freeway segment to operate at a V/C ratio above one under the year 2035 cumulative conditions.

LSAP-Update Freeway Impact Analysis

VTA CMP guidelines define that a project would cause a freeway impact if the project would deteriorate freeway levels of service from an acceptable level to an unacceptable level, or if the freeway already operates at an unacceptable level under existing conditions, the project would add traffic exceeding 1% of the freeway capacity. To determine the LSAP-Update potential freeway impacts, a select zone analysis within the Sunnyvale Travel Demand Forecast Model was performed to estimate the increase in LSAP traffic volume between the Cumulative no LSAP-Update and cumulative conditions. Freeway segments that would experience a freeway impact are shown on Figures 20 to 23 and are identified below:

Mixed Flow Lanes – AM Peak Hour

- US 101, northbound from Lawrence Expressway to Embarcadero Road
- US 101, southbound from Oregon Expressway to San Antonio Road
- US 101, southbound from Moffett Boulevard to Ellis Street
- SR 237, eastbound from Great America Parkway to North First Street
- SR 237, westbound from I-880 to Lawrence Expressway
- I-880, northbound from SR 237 to Dixon Landing Road
- I-880, southbound from Dixon Landing Road to SR 237
- I-880, southbound from Tasman Drive to Montague Expressway

HOV Lanes – AM Peak Hour

- US 101, northbound from Lawrence Expressway to Mathilda Avenue
- US 101, northbound from Ellis Street to SR 85

Mixed-Flow Lanes – PM Peak Hour

- US 101, southbound from San Antonio Road to Lawrence Expressway

HOV Lanes – PM Peak Hour

- US 101, southbound from SR 85 to Lawrence Expressway
- US 101, southbound from Montague Expressway to SR 87
- SR 237, westbound from North First Street to Lawrence Expressway

The VTA's Valley Transportation Plan (VTP) 2040 identifies freeway express lane projects along US 101 between Cochrane Road and Whipple Avenue, along SR 237 between N. First Street and SR 85, and along I-880 between the Alameda County Line and US 101. On all identified freeway segments, the existing HOV lanes are proposed to be converted to express lanes. On US 101 along the identified segments, a second express lane is proposed to be implemented for a total of two express lanes in each direction.

On SR 237 and I-880, the existing HOV lanes would be operating over capacity under the year 2035 cumulative conditions. Converting the HOV lanes to express lanes would not mitigate the project impact. On US 101, converting the existing HOV lane to an express lane and adding an express lane in each direction would increase the capacity of the freeway and would adequately address the freeway impacts. The LSAP shall require future projects within the proposed plan area to participate in VTA's Voluntary Freeway Contribution Program and contribute their fair share towards the US 101 Express Lane Project for improvements along US 101.

However, capacity improvements on freeways are beyond the capabilities of the City of Sunnyvale. Furthermore, freeways are under Caltrans jurisdiction. It should be noted that both US 101 and SR 237 were also identified with impacts under the adopted LSAP while I-880 was not studied in that report. Therefore, the impacts identified are greater than the impacts identified in the adopted LSAP.



Figure 20
LSAP Update Freeway Impact Analysis Summary - AM Peak-Hour - Mixed-Flow Lanes

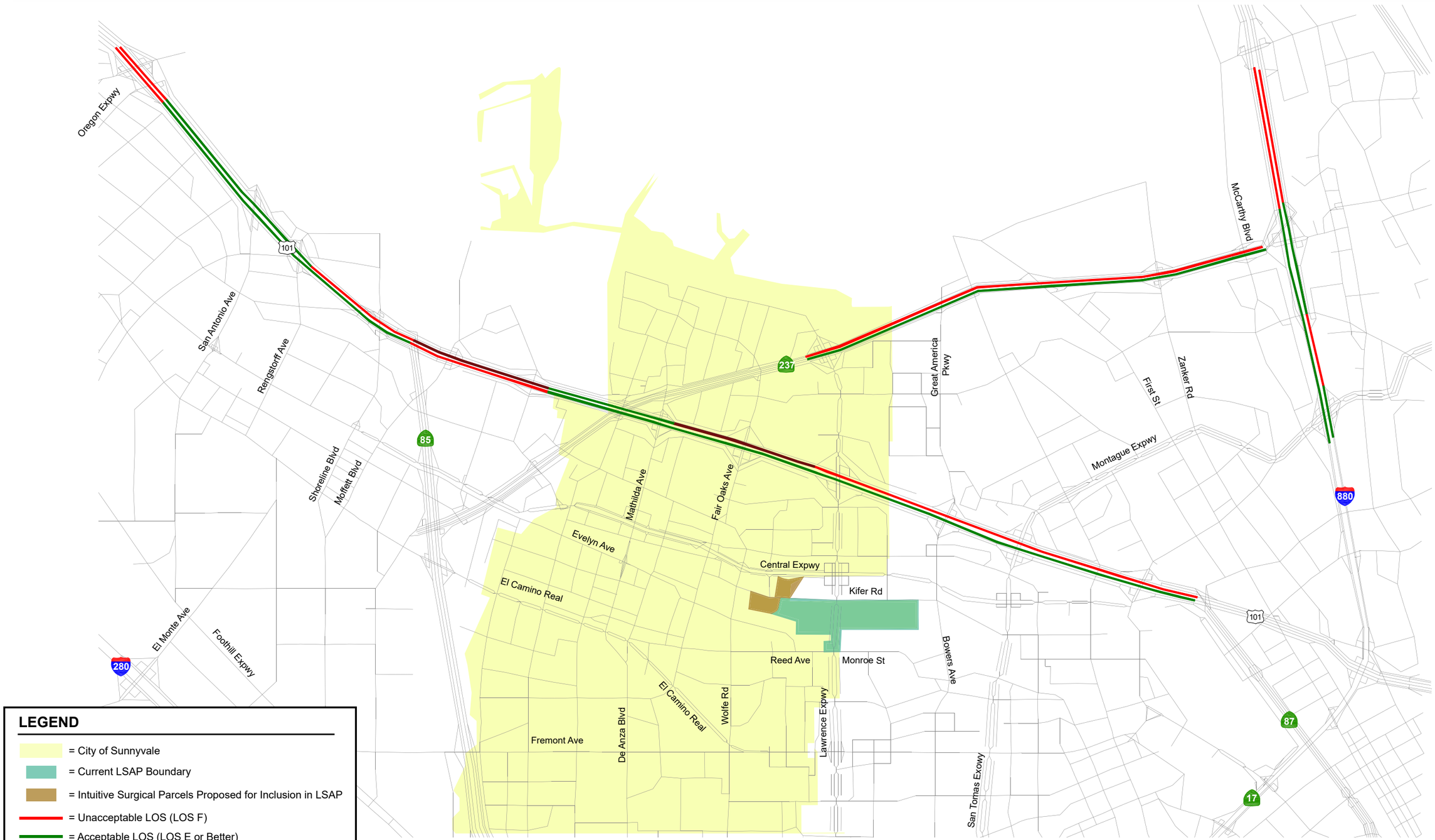


Figure 21
LSAP Update Freeway Impact Analysis Summary - AM Peak-Hour - HOV Lanes

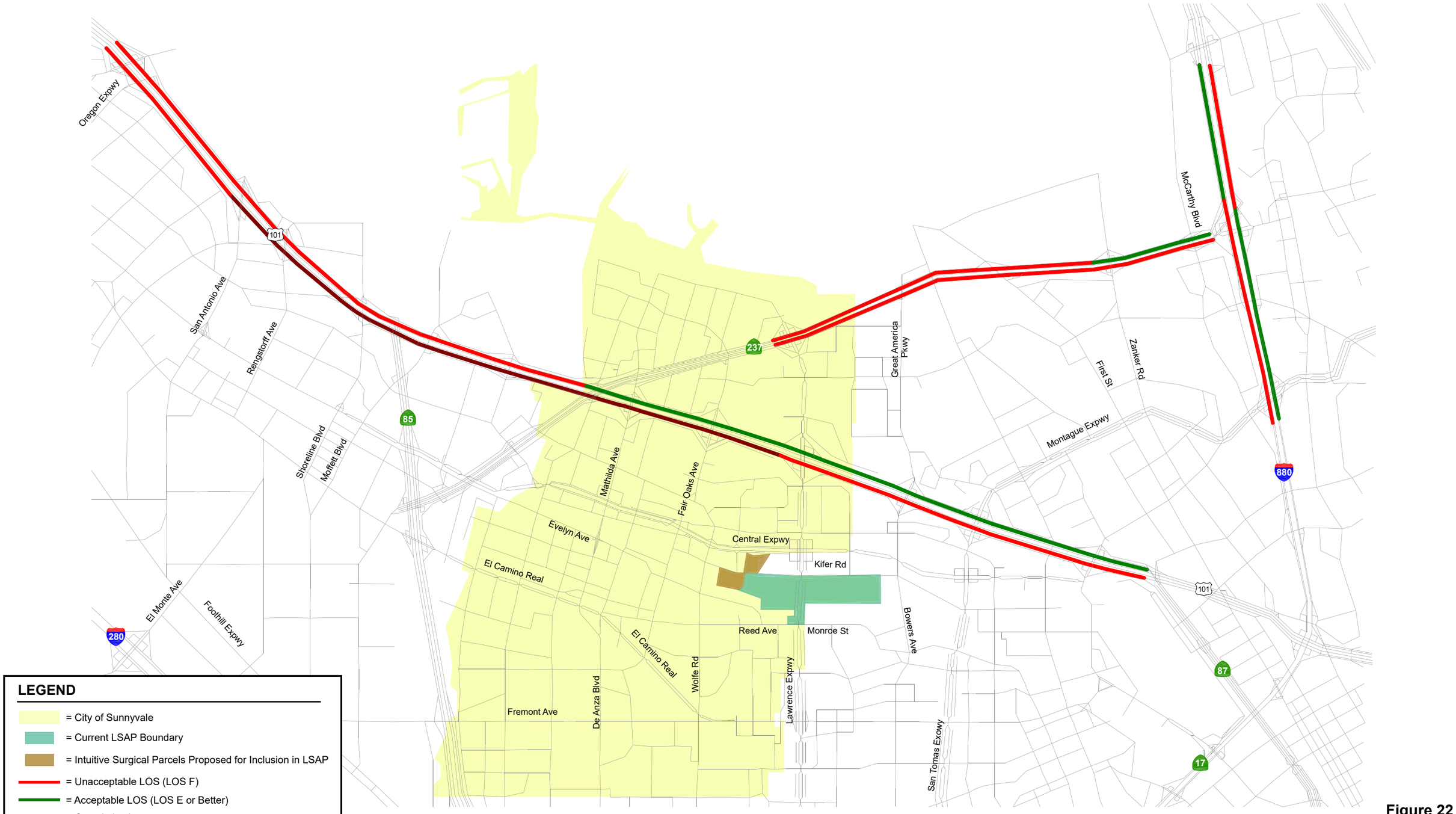


Figure 22
LSAP Update Freeway Impact Analysis Summary - PM Peak-Hour - Mixed-Flow Lanes



Figure 23
LSAP Update Freeway Impact Analysis Summary - PM Peak-Hour - HOV Lanes

Freeway Ramp Capacity Analysis

Definition of Adverse Freeway Ramp Impacts

For the purpose of this study, the LSAP-Update is said to create an adverse impact on a freeway ramp if its implementation:

- Would cause the volume-to-capacity (V/C) ratio of the freeway ramp to exceed 1.0; or
- Would increase the amount of traffic on a freeway ramp that is already exceeding its capacity by more than one percent (1%) of the ramp's capacity.

The freeway ramp volumes under year 2035 cumulative conditions were estimated using the Sunnyvale Travel Demand Forecast Model. As shown on Table 11, all study freeway ramps would continue to operate below capacity.

Table 11
Year 2035 Cumulative Conditions Ramp Capacity Analysis

Interchange	Ramp	Type	Peak Hour	Existing Conditions Volume [3]	Existing Conditions V/C	Year 2035 Cumulative Conditions Volume	Year 2035 Cumulative Conditions Capacity	Year 2035 Cumulative Conditions V/C
US 101/Lawrence Expwy	SB On-Ramp fr. NB Lawrence Expwy	Diagonal	AM	584	0.32	884	1,800	0.49
			PM	352	0.20	631		0.35
	NB On-Ramp fr. NB Lawrence Expwy	Loop	AM	484	0.27	558	1,800	0.31
			PM	378	0.21	479		0.27
	NB Off-Ramp to Lawrence Expwy	Diagonal	AM	1,278	0.34	1,891	3,800	0.50
			PM	1,185	0.31	1,722		0.45
	SB Off-Ramp to Lawrence Expwy	Diagonal	AM	738	0.19	1,099	3,800	0.29
			PM	1,753	0.46	1,753		0.46
US 101/Fair Oaks Ave	SB On-Ramp fr. NB Fair Oaks Ave	Diagonal	AM	616	0.34	536	1,800	0.30
			PM	225	0.13	219		0.12
	NB Off-Ramp to Fair Oaks Ave	Diagonal	AM	414	0.21	1,083	2,000	0.54
			PM	894	0.45	1,153		0.58
	NB On-Ramp fr. Fair Oaks Ave	Diagonal	AM	1,057	0.59	1,156	1,800	0.64
			PM	416	0.23	1,131		0.63
	SB Off-Ramp to SB Fair Oaks Ave	Diagonal	AM	363	0.18	615	2,000	0.31
			PM	893	0.45	997		0.50
SR 237/Lawrence Expwy	EB On-Ramp fr. NB Lawrence Expwy	Diagonal	AM	850	0.47	878	1,800	0.49
			PM	648	0.36	682		0.38
	WB Off-Ramp to SB Lawrence Expwy	Loop	AM	1,228	0.68	1,277	1,800	0.71
			PM	1,306	0.73	1,359		0.76

Notes:
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, fr. = from
1. As a conservative approach, if an on-ramp has meter equipment present , the ramp is analyzed assuming it is metered.
2. Ramp capacities were obtained from *Highway Capacity Manual, 2000* , and considered the free-flow speed, the number of lanes on the ramp, and ramp metering.
3. Existing peak hour volumes are obtained through intersection counts and Caltrans.

LSAP Impact to Transit Facilities

The VTA CMP's *Transportation Impact Analysis Guidelines* require an evaluation of transit vehicle delay, transit access and transit facilities. However, there are no established impact criteria by either VTA or the City of Sunnyvale. For the purpose of this study, the LSAP-Update is said to create a potentially adverse transit impact if:

1. A study intersection along a transit service route is found to have an adverse motor vehicle LOS intersection impact, or
2. The project is expected to generate increased transit demand that may not be accommodated by the existing transit services; or
3. The project is expected to reduce transit availability or access to transit facilities.

Within the immediate vicinity of the Lawrence Caltrain Station, bus route 21 has stops located within walking distance of the Lawrence Station. The Altamont Commuter Express (ACE) Gray Shuttle (Route 822) also serves the project area. Two public Caltrain shuttles, which are funded through public-private partnerships, provide service at the Lawrence Caltrain Station:

- Bowers-Walsh: This shuttle provides service between the Lawrence Caltrain Station and the Bowers/Walsh area office buildings during weekday commute periods.
- Mission: This shuttle provides service between the Lawrence Caltrain Station and Mission Area office buildings during weekday commute periods.

It is expected that the LSAP-Update would increase the number of Caltrain riders, as the developments are near the train station, and residents/employees would take Caltrain to/from work. The Caltrain electrification project would enable Caltrain to provide more frequent train service at the Lawrence Caltrain station. Caltrain predicts an initial capacity increase of over 30%. It is expected that the Caltrain electrification project would accommodate the potential increase in transit ridership generated by the LSAP-Update. It is assumed that if the free shuttle service becomes full, employers would increase their funding for the service as required by their TDM requirements or as a part of their commuter benefits, and additional shuttles would be provided to meet the demand.

The adopted LSAP plan established five policies to support public transit within the plan area. The implementation of these policies would enhance the travel experience for transit riders within the LSAP plan area, and potentially enhance and/or increase transit services to the plan area.

Transit Travel Times

To assess the transit travel time impacts, the bus route travel times in the study area under year 2035 cumulative conditions were compared to existing conditions. Bus route travel times are estimated using published schedules and adjusted based on delays experienced at study intersections. VTA does not have established criteria to determine impact to transit services. Therefore, this analysis is presented for information purposes only.

As shown on Table 12, The results show that all studied transit routes under year 2035 cumulative conditions are expected to experience increased route travel times ranging from 1 minute to 3 minutes compared to existing conditions. The City of Sunnyvale and the VTA do not have adopted standards related to transit corridor performance associated with congestion resulting from new development projects. Per the VTA TIA Guidelines (dated October 2014), *if increased transit vehicle delay is found, the Lead Agency [City of Sunnyvale] should work with VTA to identify feasible transit priority measures*

near the affected facility and include contributions to any applicable projects that improve transit speed and reliability in the TIA. Projects within the LSAP study area would be required to contribute their fair share towards any feasible priority measures near the affected facility.

Table 12
Transit Travel Time Analysis

Route	Peak Hour	Existing		Cumulative no LSAP Update	Cumulative Conditions		
		Travel Time (min)	Delay in the Study Area (min)	Delay in the Study Area (min)	Delay in the Study Area (min)	Compared to Cumulative no LSAP Update	
						Delay (min)	% Change
VTA 21							
Eastbound	AM	60	5.5	12.3	11.8	-0.5	-1%
	PM	70	6.4	12.3	11.9	-0.4	0%
Westbound	AM	70	5.0	11.8	11.2	-0.6	-1%
	PM	60	4.6	7.7	7.7	0.0	0%
VTA 57							
Northbound	AM	60	2.5	8.1	8.4	0.3	0%
	PM	60	3.0	6.1	6.2	0.1	0%
Southbound	AM	55	3.2	2.6	2.7	0.1	0%
	PM	65	2.3	8.4	8.3	-0.1	0%
VTA 522							
Eastbound	AM	100	2.6	3.3	3.4	0.1	0%
	PM	130	1.7	5.7	5.8	0.1	0%
Westbound	AM	110	2.3	2.9	3.0	0.1	0%
	PM	105	1.6	4	4.3	0.3	0%
VTA 822 Gray							
Northbound	PM	35	7.0	20.1	21.5	1.4	3%
Southbound	AM	32	6.7	16.4	18.8	2.4	5%

LSAP Cumulative Impacts to Pedestrian and Bicycle Facilities

The VTA CMP's Transportation Impact Analysis Guidelines requires evaluation of pedestrian and bicycle facilities. However, there are no established impact criteria by either VTA or the City of Sunnyvale. For the purpose of this study, the project is said to create a potentially adverse pedestrian or bicycle impact if:

1. The project proposes modifications to the existing pedestrian or bicycle facilities that are not in conformance with adopted plans (i.e. Sunnyvale's Bicycle Master Plan, General Plan, Countywide Bicycle Plan); or

2. The project reduces, severs, or eliminates existing or planned pedestrian or bicycle facilities; or

3. The project creates demand for pedestrian or bicycle facilities that do not currently exist.

Pedestrian Facilities

Sidewalks are present along both sides of all major roadways within the LSAP plan area except along both sides of Kifer Road generally west of 950 Kifer Road. Signalized crosswalks with pedestrian push buttons are present at all study intersections. The roadways connecting Kifer Road and Reed Avenue/Monroe Street to the Lawrence Caltrain Station also have sidewalks but are missing crosswalks at their respective intersections with minor residential streets. North-south connectivity for pedestrians across the railroad tracks is provided by an underpass at the Caltrain Station and on Lawrence Expressway.

The adopted LSAP plan established 12 policies to provide safe, inviting, and attractive pedestrian connections to Lawrence Station and other key destinations in the Plan area. Along with the implementation of all 12 pedestrian policies, the LSAP would close existing sidewalk gaps, build new pedestrian connections, enhance pedestrian intersection crossings, enhance pedestrian comfort-level on sidewalks, improve pedestrian connections to the Lawrence Caltrain Station, and enhance pedestrian facilities to be functional for all types of users. The conceptual LSAP Sense of Place Plan shows implementation of these policies, which will require new development in the area to implement improvements to existing pedestrian facilities, and build a new loop road and Class I multi-use trail with direct pedestrian access to the Lawrence Caltrain Station. Projects within the LSAP study area would be required to construct pedestrian improvements in accordance with the Sense of Place Plan.

Bicycle Facilities

The adopted LSAP plan identifies various bicycle facility improvements to close the gaps in the existing and planned bicycle network. The conceptual LSAP Sense of Place Plan shows implementation of these improvements and will require new development in the area to implement improvements to existing bicycle facilities and construct new facilities as described below. The LSAP-Update also includes additional bicycle facility improvements. The entire list of proposed bicycle improvements is provided in the Sense of Place Plan.

- Calabazas Creek Trail: New Class I multi-use trail in the City of Santa Clara in alignment with Calabazas Creek.
- New Class I multi-use trail from Aster Avenue and extending across the railroad tracks to Sonora Court with a grade-separated pedestrian/bicycle track crossing.
- New Class II bicycle lanes on Kifer Road east of Lawrence Expressway.

In addition to the proposed bicycle facilities within the LSAP plan area, the adopted LSAP plan also identified seven bicycle policies to encourage the use of bicycles for local and inter-neighborhood access. With the implementation of all seven bicycle policies the LSAP would build new bicycle connections east-west across Lawrence Expressway and north-south across the rail tracks and improve bicycle connections to the Lawrence Caltrain Station. The LSAP-Update also proposes a new east-west Class I multi-use trail from either end of the LSAP boundaries, north of the tracks. The trail would be located on private property, as properties redevelop. The adopted LSAP includes a new loop road to connect Corvin Drive (east of Lawrence Expressway) and Semiconductor Drive (west of Lawrence Expressway) to the Caltrain station. The loop road would include Class II bike lanes and would be built on private property, as properties redevelop.

Projects within the LSAP study area would be required to pay their fair share contribution towards bicycle improvements or construct, as applicable.

LSAP-Update TIA

Technical Appendices

August 31, 2020

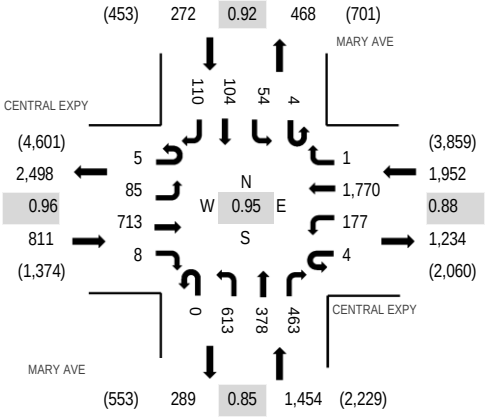
Appendix A
Traffic Counts

All Traffic Data Services Inc.

(303) 216-2439
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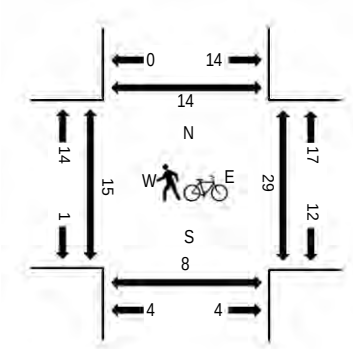
Location: 42 MARY AVE & CENTRAL EXPY AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				MARY AVE Northbound				MARY AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	6	87	0	1	45	439	0	0	61	15	54	0	5	9	26	748	3,634	1	5	0	1
7:15 AM	0	6	108	0	2	51	569	0	0	57	19	59	0	5	13	25	914	4,024	0	1	0	0
7:30 AM	0	15	120	0	1	56	456	0	0	101	33	97	1	1	24	22	927	4,231	0	0	0	0
7:45 AM	1	14	160	0	0	57	439	0	0	135	62	112	0	11	27	27	1,045	4,489	3	2	0	1
8:00 AM	0	22	191	4	0	52	510	0	0	123	64	110	2	10	29	21	1,138	4,281	0	7	3	4
8:15 AM	4	19	169	3	2	34	396	0	0	175	125	120	2	21	22	29	1,121		6	5	1	2
8:30 AM	0	30	193	1	2	34	425	1	0	180	127	121	0	12	26	33	1,185		4	8	3	7
8:45 AM	0	31	190	0	0	40	243	4	0	97	103	79	0	17	26	7	837		0	0	0	0

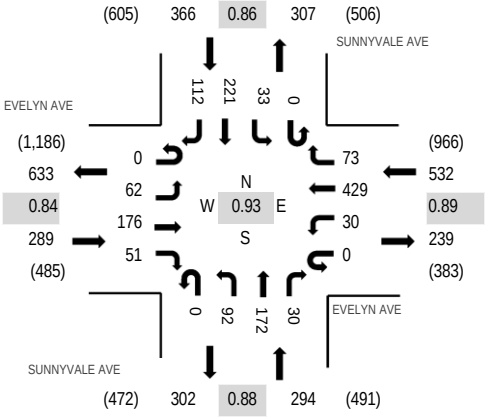
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	1	4	0	0	0	2	1	0	0	1	0	10
Lights	4	85	705	8	4	172	1,728	1	0	609	371	457	4	53	102	107	4,410
Mediums	1	0	7	0	0	4	38	0	0	4	5	5	0	1	1	3	69
Total	5	85	713	8	4	177	1,770	1	0	613	378	463	4	54	104	110	4,489

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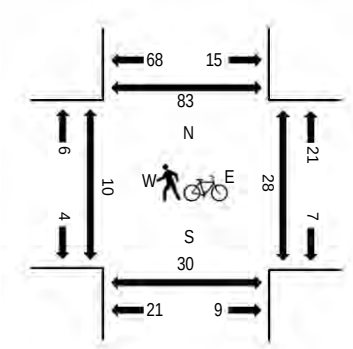
Location: 1 SUNNYVALE AVE & EVELYN AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				SUNNYVALE AVE Northbound				SUNNYVALE AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	35	14	0	2	96	7	0	33	21	2	0	4	16	12	251	1,066	3	3	5	16
7:15 AM	0	16	21	6	0	4	70	15	0	14	14	3	0	2	23	26	214	1,214	0	2	6	3
7:30 AM	0	17	24	7	0	1	95	12	0	19	18	1	0	2	35	23	254	1,359	3	3	9	5
7:45 AM	0	8	29	10	0	7	100	25	0	26	37	9	0	12	45	39	347	1,454	4	9	10	16
8:00 AM	0	13	60	13	0	7	130	17	0	27	23	6	0	12	49	42	399	1,481	2	10	6	35
8:15 AM	0	17	38	15	0	9	104	18	0	26	45	10	0	10	41	26	359		2	4	9	13
8:30 AM	0	13	39	11	0	4	108	22	0	22	42	9	0	9	49	21	349		3	5	8	22
8:45 AM	0	19	39	12	0	10	87	16	0	17	62	5	0	2	82	23	374		2	9	6	12

Peak Rolling Hour Flow Rates

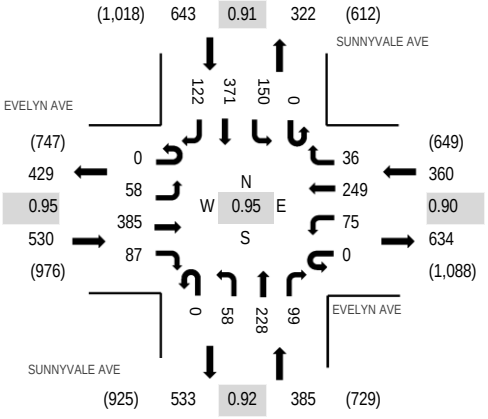
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	4
Lights	0	57	169	50	0	28	420	70	0	91	164	28	0	33	218	106	1,434
Mediums	0	5	6	1	0	2	8	2	0	1	7	2	0	0	3	6	43
Total	0	62	176	51	0	30	429	73	0	92	172	30	0	33	221	112	1,481

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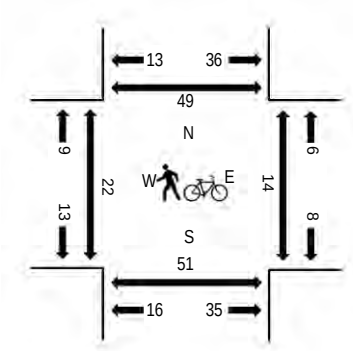
Location: 1 SUNNYVALE AVE & EVELYN AVE PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				SUNNYVALE AVE Northbound				SUNNYVALE AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	69	22	0	10	36	10	0	14	57	20	0	7	63	15	328	1,454	1	2	2	4
4:15 PM	0	12	74	23	0	12	46	10	0	10	48	19	0	14	60	23	351	1,600	1	0	9	10
4:30 PM	0	14	72	21	0	14	53	10	0	12	58	27	0	9	56	18	364	1,728	2	3	8	3
4:45 PM	0	7	109	18	0	20	57	11	0	9	48	22	0	12	73	25	411	1,868	4	12	9	14
5:00 PM	0	8	108	24	0	20	60	7	0	17	65	19	0	36	87	23	474	1,918	9	3	6	3
5:15 PM	0	18	96	22	0	19	68	13	0	16	52	23	0	32	92	28	479		5	5	20	26
5:30 PM	0	16	106	25	0	12	64	8	0	8	62	35	0	41	93	34	504		4	1	14	16
5:45 PM	0	16	75	16	0	24	57	8	0	17	49	22	0	41	99	37	461		4	3	11	4

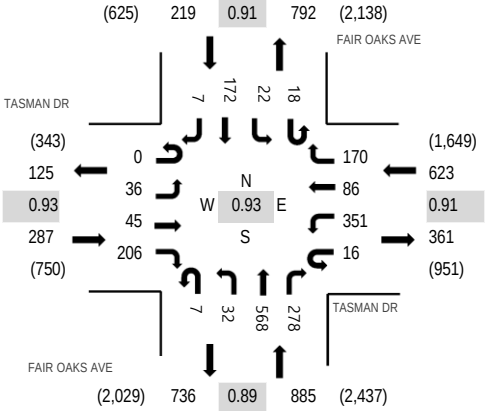
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
Lights	0	54	379	87	0	74	247	35	0	58	226	99	0	149	368	119	1,895
Mediums	0	4	5	0	0	1	2	1	0	0	2	0	0	1	2	3	21
Total	0	58	385	87	0	75	249	36	0	58	228	99	0	150	371	122	1,918

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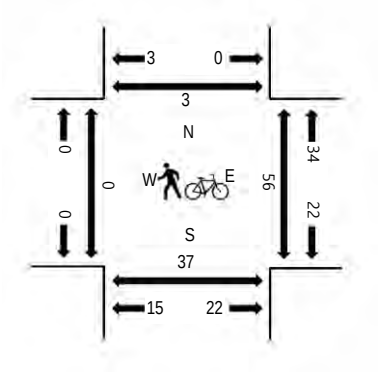
Location: 8 FAIR OAKS AVE & TASMAN DR AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	TASMAN DR Eastbound				TASMAN DR Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	1	30	3	72	7	25	0	7	83	34	3	3	29	2	301	1,620	0	5	3	0
7:15 AM	0	3	5	34	0	84	13	20	1	5	80	40	4	3	41	1	334	1,825	0	5	5	1
7:30 AM	0	8	9	45	4	116	20	53	0	5	82	65	1	8	33	1	450	1,934	3	10	4	0
7:45 AM	0	5	18	52	0	107	27	43	1	21	126	95	5	7	28	0	535	2,007	0	7	4	0
8:00 AM	0	7	16	57	2	111	31	37	1	4	106	77	4	3	48	2	506	2,014	0	12	8	0
8:15 AM	0	7	9	59	4	81	22	41	1	12	125	44	4	7	26	1	443	1,957	0	17	16	0
8:30 AM	0	9	10	50	9	85	17	39	1	9	150	80	5	4	53	2	523	1,979	0	14	6	0
8:45 AM	0	13	10	40	1	74	16	53	4	7	187	77	5	8	45	2	542	1,903	0	12	6	0
9:00 AM	0	11	15	58	4	55	8	25	4	8	157	47	1	6	47	3	449	1,827	2	7	6	0
9:15 AM	0	6	11	27	4	56	13	33	2	5	180	59	2	5	58	4	465		0	5	4	0
9:30 AM	0	9	11	49	4	63	16	29	2	7	150	55	3	6	39	4	447		0	1	1	0
9:45 AM	0	6	6	42	4	69	22	27	3	14	162	52	2	6	46	5	466		0	2	7	0

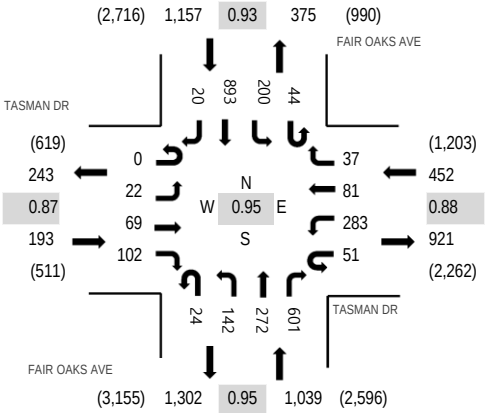
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	1	0	0	0	0	2	0	0	0	2	0	6
Lights	0	35	45	206	16	341	84	160	7	31	556	277	17	17	161	6	1,959
Mediums	0	0	0	0	0	9	2	10	0	1	10	1	1	5	9	1	49
Total	0	36	45	206	16	351	86	170	7	32	568	278	18	22	172	7	2,014

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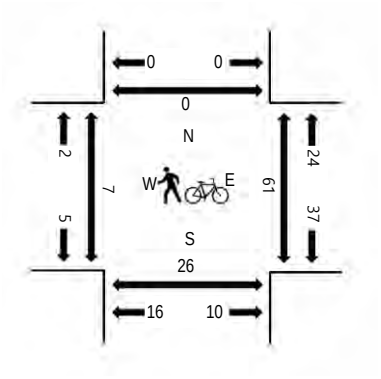
Location: 8 FAIR OAKS AVE & TASMAN DR PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	TASMAN DR Eastbound				TASMAN DR Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	10	9	10	9	63	10	13	4	12	27	85	5	52	97	8	414	2,052	1	7	6	0
4:15 PM	0	9	12	18	6	43	8	11	2	20	50	154	2	46	100	2	483	2,337	4	11	6	0
4:30 PM	0	3	8	27	2	60	14	14	6	27	52	140	14	51	175	7	600	2,568	4	22	7	0
4:45 PM	0	3	16	12	9	72	14	6	5	14	51	122	7	32	188	4	555	2,719	2	8	7	0
5:00 PM	0	4	12	22	9	57	24	9	5	30	60	156	10	61	237	3	699	2,841	3	10	11	0
5:15 PM	0	5	13	26	10	80	19	6	9	24	70	142	10	53	243	4	714	2,783	1	11	3	0
5:30 PM	0	6	25	27	14	86	14	17	5	37	63	167	9	47	225	9	751	2,636	0	24	6	0
5:45 PM	0	7	19	27	18	60	24	5	5	51	79	136	15	39	188	4	677	2,366	3	16	6	0
6:00 PM	0	8	15	40	9	69	23	7	10	35	50	121	13	40	196	5	641	2,133	3	16	6	0
6:15 PM	0	5	7	26	6	56	20	7	5	30	75	122	10	35	156	7	567		0	17	8	0
6:30 PM	0	10	8	23	9	69	31	10	8	27	50	70	7	32	120	7	481		4	19	6	0
6:45 PM	0	4	9	26	8	59	8	6	3	35	66	79	10	18	105	8	444		2	21	6	0

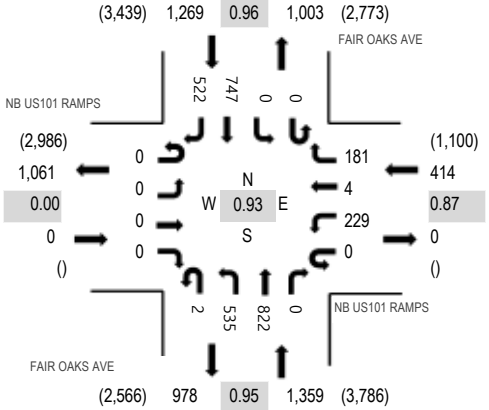
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
Lights	0	22	68	101	50	281	80	33	24	142	263	596	44	194	888	20	2,806
Mediums	0	0	1	1	1	1	1	4	0	0	9	5	0	6	4	0	33
Total	0	22	69	102	51	283	81	37	24	142	272	601	44	200	893	20	2,841

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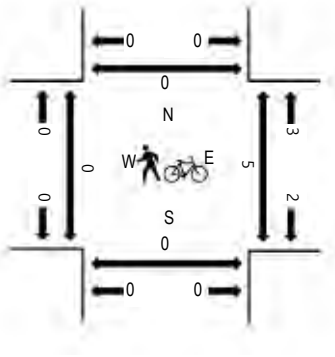
Location: 10 FAIR OAKS AVE & NB US101 RAMPS AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	NB US101 RAMPS Eastbound				NB US101 RAMPS Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	54	0	48	1	71	81	0	0	0	98	98	451	2,512	0	0	0	0
7:15 AM	0	0	0	0	0	48	1	56	0	112	85	0	0	0	144	111	557	2,878	0	0	0	0
7:30 AM	0	0	0	0	0	82	0	33	2	122	147	0	0	0	186	135	707	2,976	0	0	0	0
7:45 AM	0	0	0	0	0	94	0	40	1	133	210	0	0	0	174	145	797	3,042	0	0	0	0
8:00 AM	0	0	0	0	0	54	1	58	1	159	212	0	0	0	198	134	817	3,022	0	0	0	0
8:15 AM	0	0	0	0	0	46	1	42	0	102	164	0	0	0	190	110	655	2,905	0	2	0	0
8:30 AM	0	0	0	0	0	35	2	41	0	141	236	0	0	0	185	133	773	3,000	0	3	0	0
8:45 AM	0	0	0	0	0	25	0	41	0	157	246	0	0	0	187	121	777	2,933	0	2	0	0
9:00 AM	0	0	0	0	0	29	0	40	3	123	230	0	0	0	156	119	700	2,791	0	1	0	0
9:15 AM	0	0	0	0	0	22	0	42	0	159	231	0	0	0	168	128	750		0	3	0	0
9:30 AM	0	0	0	0	0	36	0	41	1	143	218	0	0	0	150	117	706		0	0	0	0
9:45 AM	0	0	0	0	0	43	0	45	2	107	186	0	0	0	151	101	635		0	0	0	0

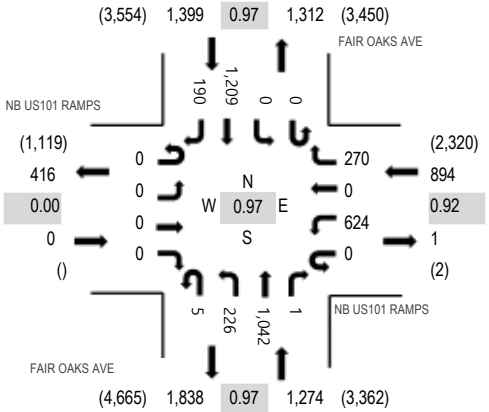
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	1	0	3	1	0	0	0	1	2	9
Lights	0	0	0	0	0	221	4	175	2	523	810	0	0	0	734	513	2,982
Mediums	0	0	0	0	0	7	0	5	0	9	11	0	0	0	12	7	51
Total	0	0	0	0	0	229	4	181	2	535	822	0	0	0	747	522	3,042

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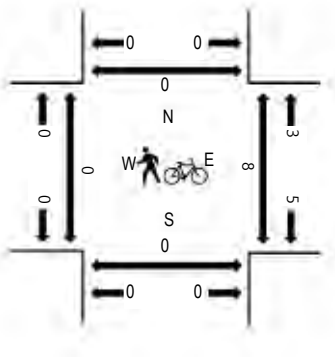
Location: 10 FAIR OAKS AVE & NB US101 RAMPS PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	NB US101 RAMPS Eastbound				NB US101 RAMPS Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	103	0	44	0	56	167	0	0	0	168	24	562	2,695	0	0	0	0
4:15 PM	0	0	0	0	0	96	1	48	0	48	215	0	0	0	169	21	598	2,996	0	1	0	0
4:30 PM	0	0	0	0	0	113	1	49	0	48	234	0	0	0	258	35	738	3,319	0	0	0	0
4:45 PM	0	0	0	0	0	143	0	48	0	49	228	0	0	1	295	33	797	3,472	0	1	0	0
5:00 PM	0	0	0	0	0	154	0	62	0	54	232	0	0	0	323	38	863	3,549	0	3	0	0
5:15 PM	0	0	0	0	0	172	0	66	0	68	262	0	0	0	307	46	921	3,567	0	0	0	0
5:30 PM	0	0	0	0	0	157	0	53	0	45	273	0	0	0	329	34	891	3,410	0	3	0	0
5:45 PM	0	0	0	0	0	161	0	85	1	55	259	1	0	0	271	41	874	3,207	0	2	0	0
6:00 PM	0	0	0	0	0	134	0	66	4	58	248	0	0	0	302	69	881	2,992	0	3	0	0
6:15 PM	0	0	0	0	0	124	0	73	2	44	232	0	0	0	246	43	764		0	0	0	0
6:30 PM	0	0	0	0	0	108	0	75	2	54	169	0	0	0	231	49	688		0	0	0	0
6:45 PM	0	0	0	0	0	109	0	75	0	67	187	0	0	0	183	38	659		0	0	0	0

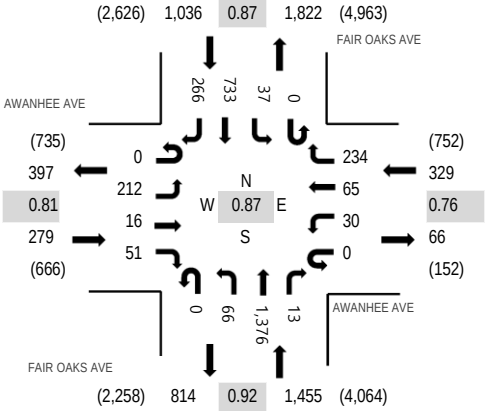
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	4
Lights	0	0	0	0	0	621	0	266	5	223	1,032	1	0	0	1,199	187	3,534
Mediums	0	0	0	0	0	3	0	4	0	1	10	0	0	0	9	2	29
Total	0	0	0	0	0	624	0	270	5	226	1,042	1	0	0	1,209	190	3,567

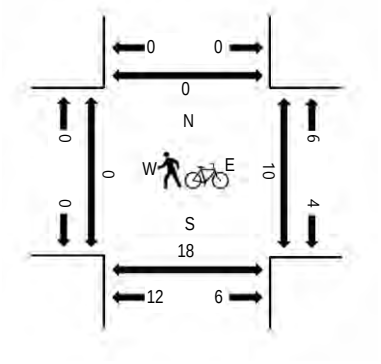
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Location: 11 FAIR OAKS AVE & AWANHEE AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	AWANHEE AVE Eastbound				AWANHEE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	23	0	21	0	5	1	31	0	6	160	2	0	4	132	24	409	2,550	0	0	3	0
7:15 AM	0	34	2	12	0	10	7	30	0	8	208	3	0	8	155	35	512	2,928	0	0	2	0
7:30 AM	0	77	10	12	0	11	14	53	0	14	238	2	0	7	231	69	738	3,090	0	1	7	0
7:45 AM	0	67	9	18	0	8	37	69	0	25	332	5	0	16	204	101	891	3,099	0	1	7	0
8:00 AM	0	64	4	10	0	9	13	65	0	16	360	2	0	11	173	60	787	2,975	0	3	2	0
8:15 AM	0	36	2	12	0	6	10	51	0	13	295	2	0	5	182	60	674	2,880	0	4	2	0
8:30 AM	0	45	1	11	0	7	5	49	0	12	389	4	0	5	174	45	747	2,884	0	2	2	0
8:45 AM	0	38	4	6	0	8	7	62	0	6	442	1	0	9	162	22	767	2,775	0	2	1	0
9:00 AM	0	31	0	8	0	6	11	42	0	14	370	2	0	8	175	25	692	2,583	0	0	1	0
9:15 AM	0	25	2	10	0	1	7	47	0	10	398	1	1	6	156	14	678		0	3	1	0
9:30 AM	0	29	0	5	0	3	4	35	0	6	380	3	0	6	149	18	638		0	1	2	0
9:45 AM	0	30	1	7	0	2	1	25	0	2	332	1	0	4	157	13	575		0	0	1	0

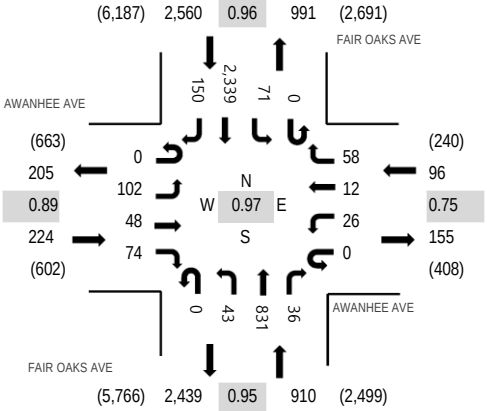
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	9
Lights	0	208	16	50	0	30	65	231	0	65	1,347	11	0	37	708	264	3,032
Mediums	0	4	0	1	0	0	0	3	0	1	22	2	0	0	23	2	58
Total	0	212	16	51	0	30	65	234	0	66	1,376	13	0	37	733	266	3,099

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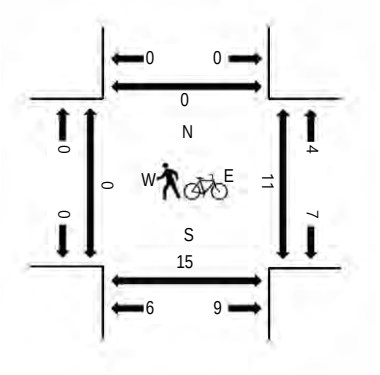
Location: 11 FAIR OAKS AVE & AWANHEE AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	AWANHEE AVE Eastbound				AWANHEE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	26	4	12	0	6	0	7	0	11	149	7	0	17	303	29	571	2,645	0	1	6	0
4:15 PM	0	24	5	15	0	4	2	9	0	17	180	8	1	11	318	36	630	2,985	0	1	2	0
4:30 PM	0	25	7	23	0	0	10	10	0	11	172	4	1	14	378	33	688	3,327	0	0	2	0
4:45 PM	0	33	5	11	0	3	2	8	0	14	180	4	0	24	411	61	756	3,596	0	6	4	0
5:00 PM	0	26	8	9	0	6	4	11	0	10	202	8	0	20	577	30	911	3,790	0	1	0	0
5:15 PM	0	26	12	29	0	10	2	20	0	11	221	7	0	9	586	39	972	3,735	0	3	4	0
5:30 PM	0	23	15	21	0	5	5	12	0	7	197	7	0	20	608	37	957	3,574	0	5	3	0
5:45 PM	0	27	13	15	0	5	1	15	0	15	211	14	0	22	568	44	950	3,339	0	2	6	0
6:00 PM	0	26	7	25	0	3	3	14	0	14	183	4	0	21	512	44	856	3,093	0	3	2	0
6:15 PM	0	16	11	20	0	3	3	13	0	15	199	11	0	12	465	43	811		0	6	1	0
6:30 PM	0	17	4	21	0	5	2	18	0	11	167	10	0	22	405	40	722		0	1	5	0
6:45 PM	0	22	4	15	0	3	5	11	0	13	189	16	0	21	366	39	704		0	1	3	0

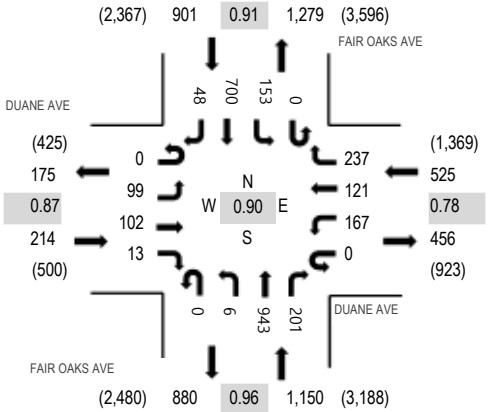
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights	0	101	48	74	0	24	12	58	0	42	794	36	0	68	2,328	149	3,734
Mediums	0	1	0	0	0	2	0	0	0	1	37	0	0	2	11	1	55
Total	0	102	48	74	0	26	12	58	0	43	831	36	0	71	2,339	150	3,790

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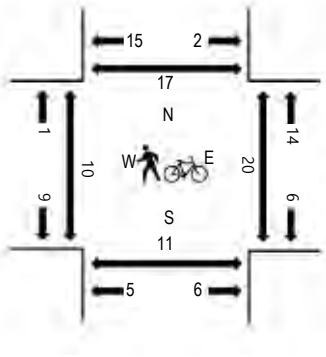
Location: 12 FAIR OAKS AVE & DUANE AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DUANE AVE Eastbound				DUANE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	17	4	2	0	43	8	14	0	1	107	12	0	13	155	4	380	2,256	0	2	0	4
7:15 AM	0	19	15	1	0	35	18	24	0	1	140	24	1	17	154	10	459	2,558	1	3	0	10
7:30 AM	0	32	29	3	0	50	35	47	0	2	173	43	0	48	170	10	642	2,723	2	0	5	7
7:45 AM	0	31	34	2	0	54	41	75	0	1	216	65	0	58	179	19	775	2,790	2	1	1	10
8:00 AM	0	31	31	4	0	33	30	52	0	1	230	43	0	24	192	11	682	2,724	0	4	1	0
8:15 AM	0	10	19	5	0	36	24	51	0	4	211	46	0	36	172	10	624	2,667	4	5	2	1
8:30 AM	0	27	18	2	0	44	26	59	0	0	286	47	0	35	157	8	709	2,699	2	4	5	1
8:45 AM	0	22	17	3	0	53	27	75	0	2	300	24	0	26	148	12	709	2,579	1	1	2	3
9:00 AM	0	20	12	1	0	31	26	42	0	3	264	28	0	19	168	11	625	2,444	2	1	1	5
9:15 AM	0	17	5	7	0	41	19	57	0	2	312	24	0	9	154	9	656		0	2	2	1
9:30 AM	0	21	9	4	0	40	14	51	0	3	263	28	0	18	136	2	589		0	3	1	1
9:45 AM	0	15	6	5	0	41	21	32	0	3	252	27	0	10	155	7	574		0	1	2	3

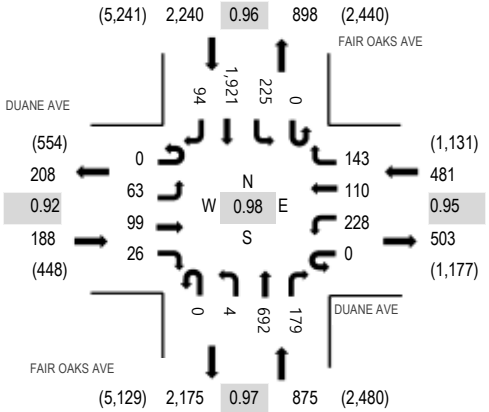
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	4
Lights	0	97	102	12	0	159	119	235	0	6	921	196	0	152	675	45	2,719
Mediums	0	2	0	1	0	8	2	1	0	0	19	5	0	1	25	3	67
Total	0	99	102	13	0	167	121	237	0	6	943	201	0	153	700	48	2,790

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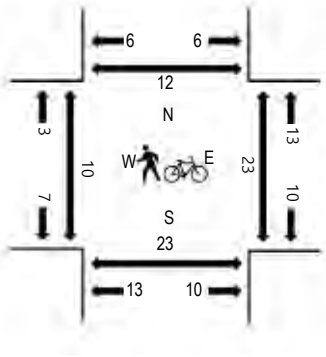
Location: 12 FAIR OAKS AVE & DUANE AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DUANE AVE Eastbound				DUANE AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	6	17	3	0	51	22	26	0	2	136	39	0	19	234	21	576	2,576	0	0	2	4
4:15 PM	0	16	15	4	0	42	15	18	0	3	151	39	0	39	254	22	618	2,897	2	1	0	2
4:30 PM	0	10	19	9	0	30	13	30	0	0	144	49	0	43	285	18	650	3,242	0	4	2	4
4:45 PM	0	9	17	4	0	44	13	16	0	6	178	43	0	47	336	19	732	3,553	2	7	6	1
5:00 PM	0	11	25	5	0	58	26	32	0	3	169	42	0	50	455	21	897	3,784	0	4	6	3
5:15 PM	0	16	23	9	0	58	25	43	0	1	178	47	0	54	482	27	963	3,709	3	6	1	3
5:30 PM	0	11	32	5	0	61	25	34	0	0	171	39	0	77	482	24	961	3,529	3	8	3	2
5:45 PM	0	25	19	7	0	51	34	34	0	0	174	51	0	44	502	22	963	3,263	1	5	6	3
6:00 PM	0	12	17	10	0	52	28	29	0	3	169	22	0	27	427	26	822	2,940	3	2	4	5
6:15 PM	0	14	16	6	0	47	17	20	0	4	174	37	0	27	393	28	783		1	5	3	2
6:30 PM	0	11	12	5	0	35	20	12	0	1	171	39	0	18	350	21	695		2	4	1	4
6:45 PM	0	14	10	4	0	35	15	20	0	4	156	35	0	28	294	25	640		4	1	2	8

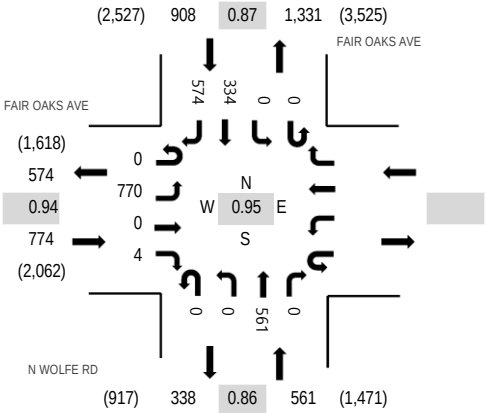
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Lights	0	63	99	26	0	224	110	142	0	4	687	175	0	224	1,907	94	3,755
Mediums	0	0	0	0	0	4	0	0	0	0	4	4	0	1	14	0	27
Total	0	63	99	26	0	228	110	143	0	4	692	179	0	225	1,921	94	3,784

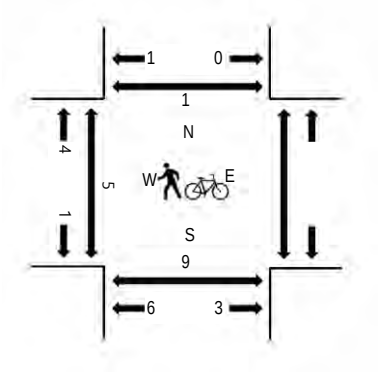
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Location: 13 N WOLFE RD & FAIR OAKS AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FAIR OAKS AVE Eastbound				Westbound				N WOLFE RD Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	82	0	0					0	0	48	0	0	0	38	156	324	1,767	1		0	0
7:15 AM	0	122	0	0					0	0	59	0	0	0	62	124	367	2,002	2		0	0
7:30 AM	0	136	0	0					0	0	135	0	0	0	71	146	488	2,147	1		0	0
7:45 AM	0	206	0	0					0	0	157	0	0	0	77	148	588	2,243	1		1	0
8:00 AM	0	175	0	1					0	0	117	0	0	0	106	160	559	2,207	4		5	1
8:15 AM	0	179	0	1					0	0	115	0	0	0	78	139	512	2,184	0		1	0
8:30 AM	0	210	0	2					0	0	172	0	0	0	73	127	584	2,229	0		0	0
8:45 AM	0	195	0	1					0	0	131	0	0	0	79	146	552	2,145	1		0	0
9:00 AM	0	186	0	1					0	0	136	0	0	0	81	132	536	2,086	0		2	0
9:15 AM	0	202	0	0					0	0	155	0	0	0	91	109	557		0		1	0
9:30 AM	0	186	0	1					0	0	129	0	0	0	72	112	500		1		1	0
9:45 AM	0	175	0	1					0	0	117	0	0	0	81	119	493		0		1	0

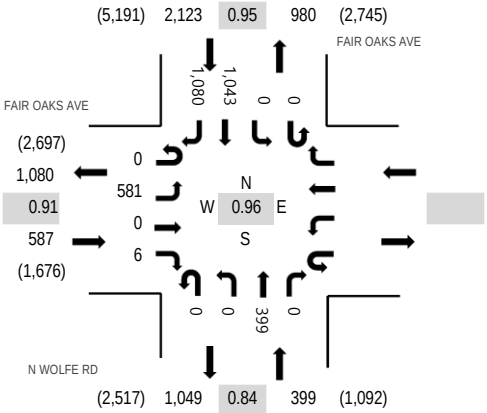
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0					0	0	2	0	0	0	1	0	4
Lights	0	753	0	4					0	0	544	0	0	0	324	554	2,179
Mediums	0	16	0	0					0	0	15	0	0	0	9	20	60
Total	0	770	0	4					0	0	561	0	0	0	334	574	2,243

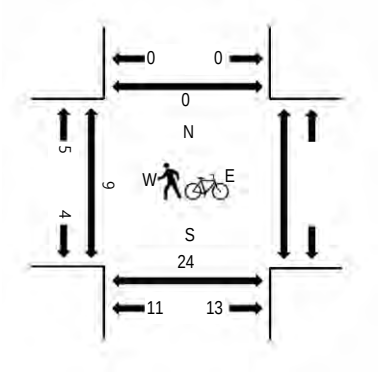
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Location: 13 N WOLFE RD & FAIR OAKS AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FAIR OAKS AVE Eastbound				Westbound				N WOLFE RD Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	129	0	2					0	0	73	0	0	0	121	171	496	2,241	0		0	0
4:15 PM	0	127	0	3					1	0	87	0	0	0	134	169	521	2,463	0		0	0
4:30 PM	0	130	0	0					0	0	95	0	0	0	166	183	574	2,728	0		2	0
4:45 PM	0	162	0	2					0	0	86	0	0	0	204	196	650	2,960	0		3	0
5:00 PM	0	127	0	1					0	0	99	0	0	0	266	225	718	3,109	4		5	0
5:15 PM	0	154	0	2					0	0	96	0	0	0	267	267	786	3,109	0		2	0
5:30 PM	0	149	0	1					0	0	119	0	0	0	246	291	806	3,020	3		5	0
5:45 PM	0	151	0	2					0	0	85	0	0	0	264	297	799	2,850	2		7	0
6:00 PM	0	128	0	4					0	0	83	0	0	0	244	259	718	2,609	1		0	0
6:15 PM	0	119	0	1					0	0	110	0	0	0	237	230	697		1		5	0
6:30 PM	0	150	0	4					0	0	78	0	0	0	190	214	636		4		3	0
6:45 PM	0	128	0	0					0	0	80	0	0	0	155	195	558		2		0	0

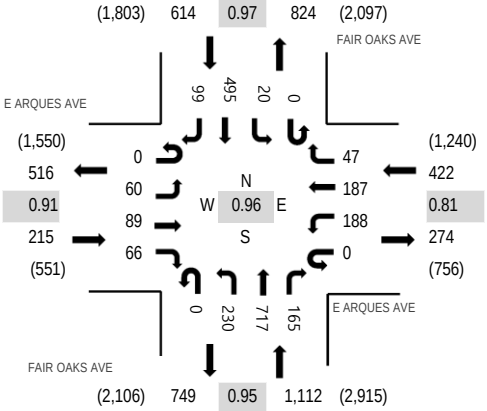
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0
Lights	0	573	0	6					0	0	398	0	0	0	1,041	1,071	3,089
Mediums	0	8	0	0					0	0	1	0	0	0	2	9	20
Total	0	581	0	6					0	0	399	0	0	0	1,043	1,080	3,109

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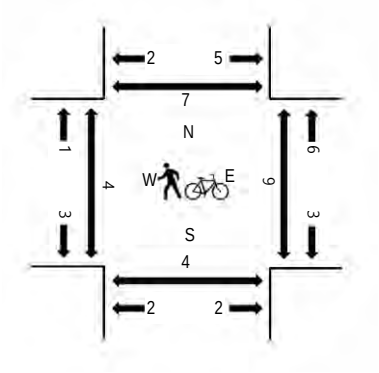
Location: 15 FAIR OAKS AVE & E ARQUES AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E ARQUES AVE Eastbound				E ARQUES AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	3	10	7	0	33	35	8	0	35	63	10	0	5	137	31	377	1,918	1	2	0	2
7:15 AM	0	13	14	8	0	36	33	4	0	50	98	21	0	4	124	26	431	2,058	0	0	0	4
7:30 AM	0	18	15	8	0	46	47	11	0	50	133	24	0	3	124	35	514	2,244	0	0	0	0
7:45 AM	0	20	23	11	0	56	64	23	0	51	151	34	0	3	130	30	596	2,305	1	0	0	2
8:00 AM	0	13	16	4	0	50	54	10	0	45	123	31	0	8	135	28	517	2,288	3	2	3	0
8:15 AM	0	21	22	16	0	40	46	15	0	60	186	44	0	4	138	25	617	2,363	1	4	1	1
8:30 AM	0	13	23	21	0	52	42	10	0	57	184	31	0	2	121	19	575	2,341	0	2	1	1
8:45 AM	0	15	22	13	0	46	45	9	0	51	181	44	0	5	119	29	579	2,328	1	0	1	2
9:00 AM	0	11	22	16	0	50	54	13	0	62	166	46	0	9	117	26	592	2,303	1	2	1	3
9:15 AM	0	5	33	17	0	51	48	17	0	71	185	48	0	7	92	21	595		1	1	0	4
9:30 AM	0	10	26	14	0	42	42	12	0	74	177	52	0	5	86	22	562		3	1	2	4
9:45 AM	0	13	22	13	0	35	46	15	0	72	148	57	0	11	98	24	554		4	2	1	1

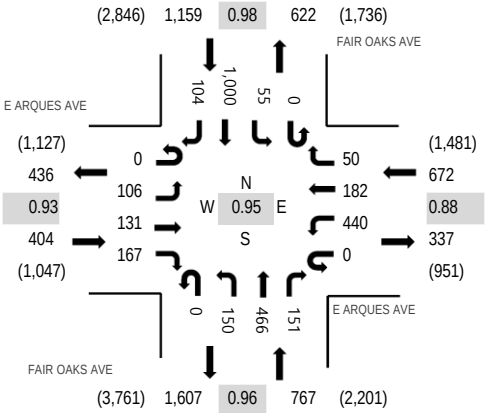
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	59	89	63	0	180	181	46	0	227	705	164	0	19	482	96	2,311
Mediums	0	1	0	3	0	8	6	1	0	3	12	1	0	1	13	3	52
Total	0	60	89	66	0	188	187	47	0	230	717	165	0	20	495	99	2,363

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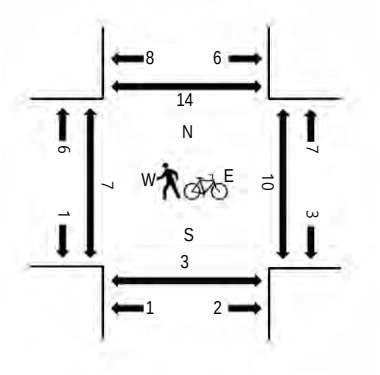
Location: 15 FAIR OAKS AVE & E ARQUES AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E ARQUES AVE Eastbound				E ARQUES AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	15	20	23	0	36	15	11	0	31	108	26	0	14	148	25	472	2,090	2	0	0	0
4:15 PM	0	22	29	24	0	40	28	8	0	34	90	25	0	4	161	13	478	2,263	0	2	0	3
4:30 PM	0	21	23	29	0	55	19	14	0	33	108	35	0	9	185	15	546	2,564	2	0	0	2
4:45 PM	0	28	33	27	0	64	28	12	0	42	115	32	0	8	185	20	594	2,804	1	0	0	2
5:00 PM	0	22	30	37	0	75	52	14	0	38	97	46	0	14	204	16	645	2,950	2	6	2	0
5:15 PM	0	23	30	38	0	124	45	16	0	39	127	41	0	14	253	29	779	3,002	3	0	0	1
5:30 PM	0	23	33	53	0	134	48	9	0	40	135	30	0	14	239	28	786	2,847	2	5	2	4
5:45 PM	0	33	40	32	0	92	49	7	0	44	115	40	0	13	258	17	740	2,662	0	3	0	1
6:00 PM	0	27	28	44	0	90	40	18	0	27	89	40	0	14	250	30	697	2,535	1	2	1	5
6:15 PM	0	24	33	31	0	65	32	10	0	33	110	47	0	14	197	28	624		0	0	1	2
6:30 PM	0	14	26	29	0	70	43	7	0	38	115	38	0	16	185	20	601		0	0	0	1
6:45 PM	0	29	39	35	0	67	36	8	0	36	112	45	0	8	182	16	613		0	0	0	1

Peak Rolling Hour Flow Rates

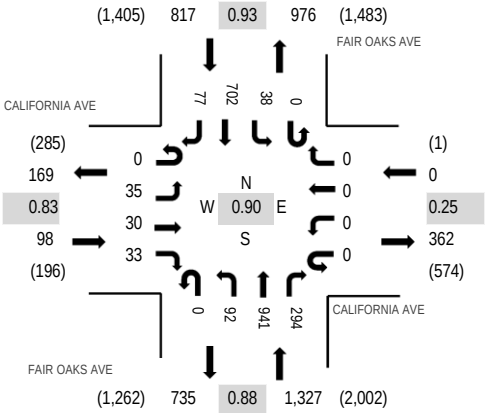
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Lights	0	106	129	167	0	438	182	50	0	150	463	149	0	55	993	104	2,986
Mediums	0	0	2	0	0	1	0	0	0	0	3	2	0	0	7	0	15
Total	0	106	131	167	0	440	182	50	0	150	466	151	0	55	1,000	104	3,002

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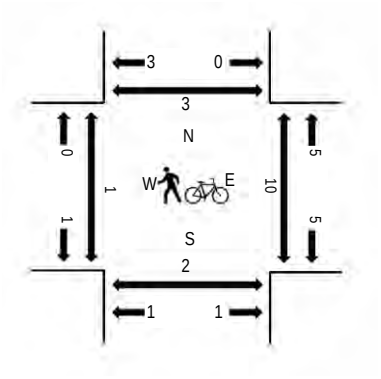
Location: 5 FAIR OAKS AVE & CALIFORNIA AVE AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	4	5	5	0	0	0	0	0	8	112	21	0	4	108	16	283	1,362	0	0	0	0
7:15 AM	0	6	6	7	0	0	0	0	0	8	114	38	0	8	97	18	302	1,594	0	4	0	0
7:30 AM	0	13	11	9	0	0	0	1	0	15	117	38	0	5	141	12	362	1,857	0	4	0	0
7:45 AM	0	7	10	15	0	0	0	0	0	18	133	53	0	13	145	21	415	2,034	0	8	0	1
8:00 AM	0	8	9	5	0	0	0	0	0	31	192	51	0	10	186	23	515	2,242	0	6	0	3
8:15 AM	0	11	3	9	0	0	0	0	0	20	259	62	0	6	178	17	565		0	1	0	0
8:30 AM	0	9	8	10	0	0	0	0	0	26	227	82	0	13	152	12	539		1	2	1	0
8:45 AM	0	7	10	9	0	0	0	0	0	15	263	99	0	9	186	25	623		0	1	1	0

Peak Rolling Hour Flow Rates

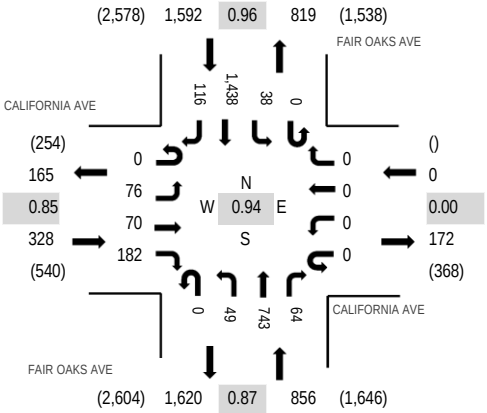
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	6
Lights	0	32	29	30	0	0	0	0	0	91	913	291	0	37	682	75	2,180
Mediums	0	3	1	3	0	0	0	0	0	1	26	3	0	1	16	2	56
Total	0	35	30	33	0	0	0	0	0	92	941	294	0	38	702	77	2,242

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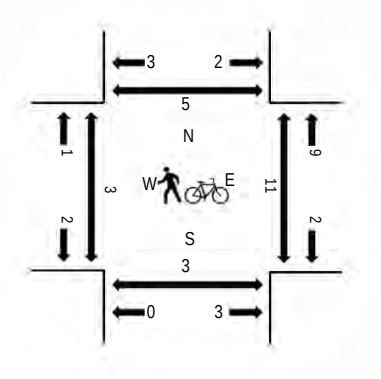
Location: 5 FAIR OAKS AVE & CALIFORNIA AVE PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	16	26	19	0	0	0	0	0	5	174	12	0	13	186	10	461	1,988	0	1	1	0
4:15 PM	0	12	13	20	0	0	0	0	0	7	173	20	0	8	196	12	461	2,158	0	2	0	0
4:30 PM	0	13	10	21	0	0	0	0	0	10	170	42	0	9	193	10	478	2,416	0	1	1	0
4:45 PM	0	14	11	37	0	0	0	0	0	8	147	22	0	10	312	27	588	2,678	0	1	0	1
5:00 PM	0	19	12	34	0	0	0	0	0	9	170	17	0	9	335	26	631	2,776	0	1	1	0
5:15 PM	0	30	20	46	0	0	0	0	0	11	188	11	0	7	379	27	719		0	3	0	3
5:30 PM	0	14	18	63	0	0	0	0	0	14	216	16	0	13	363	23	740		1	1	0	0
5:45 PM	0	13	20	39	0	0	0	0	0	15	169	20	0	9	361	40	686		0	4	0	1

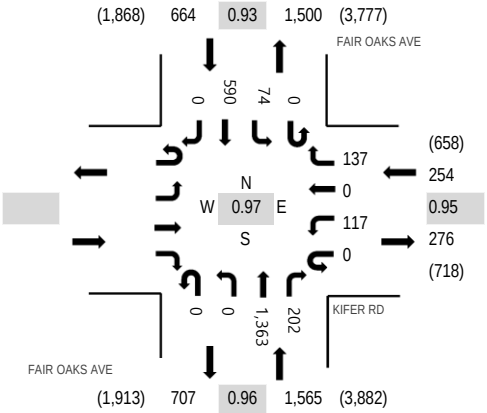
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	76	69	181	0	0	0	0	0	48	734	61	0	38	1,428	115	2,750
Mediums	0	0	1	1	0	0	0	0	0	1	9	3	0	0	10	1	26
Total	0	76	70	182	0	0	0	0	0	49	743	64	0	38	1,438	116	2,776

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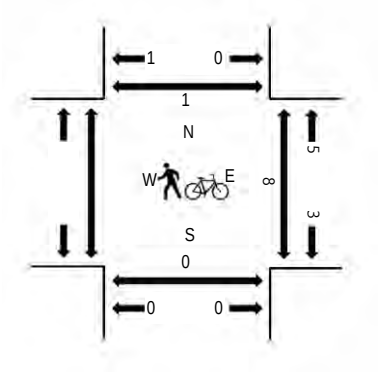
Location: 16 FAIR OAKS AVE & KIFER RD AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM					0	5	0	20	0	0	110	15	1	22	142	0	315	1,648		1	0	0
7:15 AM					0	9	0	22	0	0	189	15	0	18	149	0	402	1,853		0	0	0
7:30 AM					0	13	0	29	0	0	241	20	0	13	130	0	446	2,076		1	0	0
7:45 AM					0	20	0	32	0	0	243	38	0	16	136	0	485	2,241		1	0	0
8:00 AM					0	22	0	46	0	0	234	33	0	23	162	0	520	2,364		0	0	1
8:15 AM					0	27	0	37	0	0	335	54	0	18	154	0	625	2,483		4	0	0
8:30 AM					0	29	0	35	0	0	333	48	0	19	147	0	611	2,453		2	0	1
8:45 AM					0	29	0	41	0	0	329	47	0	20	142	0	608	2,443		1	0	0
9:00 AM					0	32	0	24	0	0	366	53	0	17	147	0	639	2,396		1	0	0
9:15 AM					0	28	0	23	0	0	352	57	0	20	115	0	595			2	0	0
9:30 AM					0	25	0	39	0	0	353	58	0	29	97	0	601			0	0	0
9:45 AM					0	42	0	29	0	0	314	45	0	20	111	0	561			0	0	0

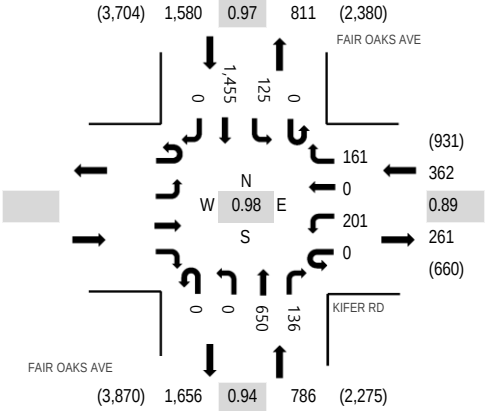
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	1	0	0	0	1	0	0	0	0	2
Lights					0	115	0	130	0	0	1,346	201	0	72	575	0	2,439
Mediums					0	2	0	6	0	0	17	0	0	2	15	0	42
Total					0	117	0	137	0	0	1,363	202	0	74	590	0	2,483

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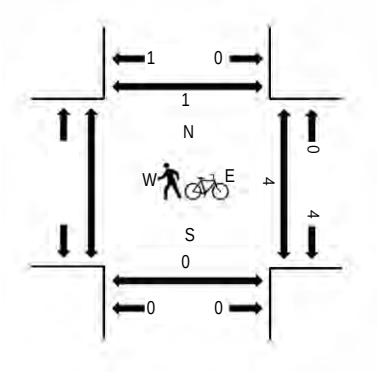
Location: 16 FAIR OAKS AVE & KIFER RD PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM					0	33	0	28	1	0	151	26	0	24	188	0	451	1,906		0	0	0
4:15 PM					0	34	0	36	0	0	141	26	0	22	184	0	443	2,046		0	0	0
4:30 PM					0	36	0	37	0	0	143	26	0	23	229	0	494	2,271		2	0	0
4:45 PM					0	27	0	41	0	0	140	36	0	24	250	0	518	2,473		1	0	0
5:00 PM					0	35	0	45	0	0	156	26	0	25	304	0	591	2,637		0	0	0
5:15 PM					0	39	0	42	0	0	153	28	0	25	381	0	668	2,728		2	0	0
5:30 PM					0	57	0	45	0	0	169	36	0	35	354	0	696	2,635		0	0	0
5:45 PM					0	55	0	35	0	0	161	36	0	23	372	0	682	2,488		2	0	0
6:00 PM					0	50	0	39	0	0	167	36	0	42	348	0	682	2,367		0	0	0
6:15 PM					0	39	0	31	0	0	171	30	0	23	281	0	575			0	0	1
6:30 PM					0	28	0	35	0	0	185	13	0	25	263	0	549			0	0	0
6:45 PM					0	40	0	44	0	0	185	33	0	17	242	0	561			0	0	0

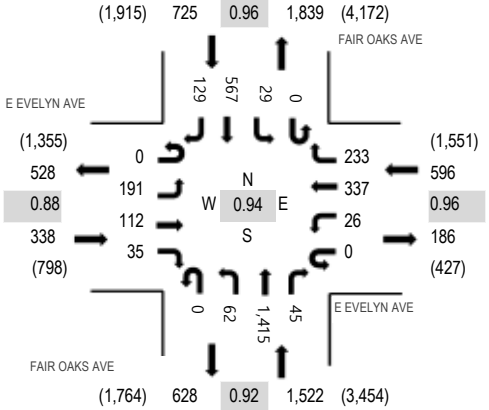
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	0	0	0	0	0	0
Lights					0	201	0	156	0	0	642	135	0	123	1,445	0	2,702
Mediums					0	0	0	5	0	0	8	1	0	2	10	0	26
Total					0	201	0	161	0	0	650	136	0	125	1,455	0	2,728

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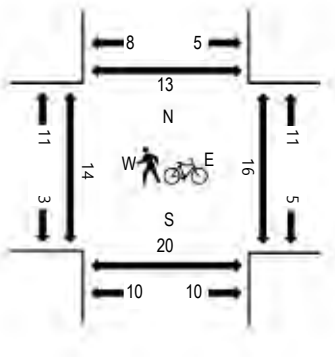
Location: 17 FAIR OAKS AVE & E EVELYN AVE AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E EVELYN AVE Eastbound				E EVELYN AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	15	26	4	0	5	77	16	0	21	101	5	0	4	111	22	407	1,959	0	2	4	3
7:15 AM	0	16	13	9	0	9	38	21	0	8	147	5	0	5	135	19	425	2,225	0	2	3	2
7:30 AM	0	22	13	10	0	12	60	31	0	8	214	6	0	4	117	25	522	2,647	0	2	3	2
7:45 AM	0	36	22	9	0	21	90	30	0	16	225	4	0	3	123	26	605	2,936	3	1	5	6
8:00 AM	0	38	31	21	0	26	99	32	0	11	224	11	0	5	142	33	673	3,120	6	4	3	2
8:15 AM	0	57	37	7	0	6	93	47	0	14	384	14	0	6	147	35	847	3,181	7	7	3	1
8:30 AM	0	53	24	7	0	2	87	61	0	14	368	16	0	7	139	33	811	3,000	2	1	3	3
8:45 AM	0	45	24	12	0	7	86	54	0	17	360	6	0	8	140	30	789	2,831	1	3	1	0
9:00 AM	0	36	27	9	0	11	71	71	0	17	303	9	0	8	141	31	734	2,639	3	4	6	3
9:15 AM	0	38	17	6	0	12	66	58	0	11	312	4	0	2	112	28	666		1	5	2	3
9:30 AM	0	36	17	5	0	11	59	74	0	8	304	7	0	3	100	18	642		0	3	1	0
9:45 AM	0	29	20	7	0	7	48	53	0	10	261	9	0	5	122	26	597		0	5	4	0

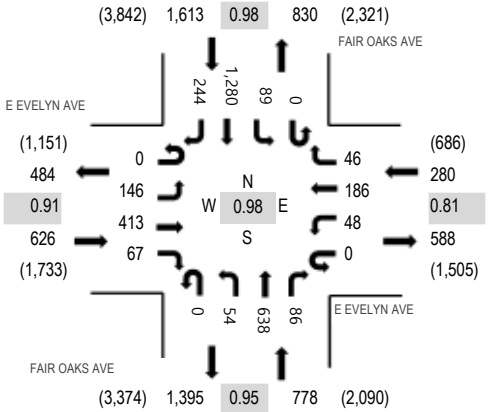
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	0	5
Lights	0	188	109	34	0	26	330	228	0	61	1,405	44	0	28	553	125	3,131
Mediums	0	2	3	0	0	0	6	5	0	0	10	1	0	1	13	4	45
Total	0	191	112	35	0	26	337	233	0	62	1,415	45	0	29	567	129	3,181

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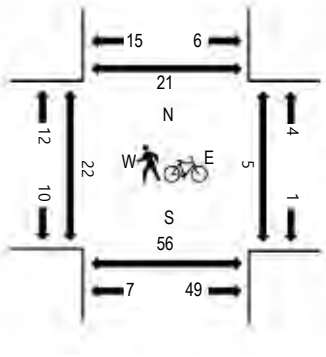
Location: 17 FAIR OAKS AVE & E EVELYN AVE PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	E EVELYN AVE Eastbound				E EVELYN AVE Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	49	15	0	5	27	12	0	2	146	9	1	8	180	39	522	2,244	0	0	1	0
4:15 PM	0	25	69	13	0	9	36	9	0	9	123	13	0	14	163	29	512	2,419	0	1	3	0
4:30 PM	0	33	74	16	0	3	23	10	0	7	136	9	0	11	224	41	587	2,717	0	4	1	1
4:45 PM	0	28	94	20	0	4	32	10	0	7	146	8	0	19	217	38	623	2,970	1	3	0	2
5:00 PM	0	44	113	25	0	12	34	8	0	16	119	10	0	24	244	48	697	3,191	0	2	3	2
5:15 PM	0	35	98	11	0	8	50	9	0	9	163	20	0	18	333	56	810	3,297	1	1	5	2
5:30 PM	0	47	109	22	0	18	30	18	0	15	152	20	0	25	324	60	840	3,278	8	2	3	3
5:45 PM	0	33	103	20	0	17	57	12	0	16	155	21	0	22	313	75	844	3,097	3	2	5	5
6:00 PM	0	31	103	14	0	5	49	7	0	14	168	25	0	24	310	53	803	2,916	10	0	11	4
6:15 PM	0	39	100	18	0	10	48	8	0	12	166	22	0	20	281	67	791		2	3	11	4
6:30 PM	0	30	115	24	0	7	23	12	0	4	147	13	0	7	241	36	659		2	4	9	1
6:45 PM	0	40	77	17	0	12	37	15	0	6	155	27	0	12	219	46	663		1	0	10	0

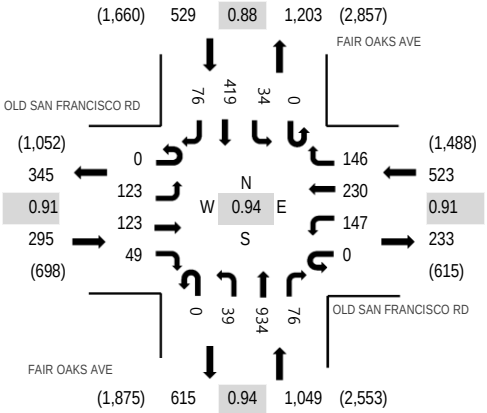
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	144	410	67	0	48	184	46	0	54	633	85	0	87	1,276	244	3,278
Mediums	0	2	3	0	0	0	2	0	0	0	5	1	0	2	3	0	18
Total	0	146	413	67	0	48	186	46	0	54	638	86	0	89	1,280	244	3,297

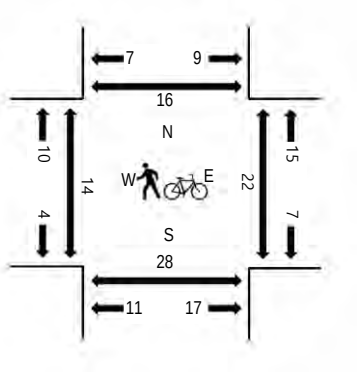
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Location: 19 FAIR OAKS AVE & OLD SAN FRANCISCO RD AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	OLD SAN FRANCISCO RD Eastbound				OLD SAN FRANCISCO RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	6	8	0	10	25	22	0	2	78	11	0	6	127	8	308	1,757	1	3	2	1
7:15 AM	0	14	15	9	0	39	65	22	0	10	111	23	0	7	148	9	472	2,023	1	5	6	0
7:30 AM	0	16	9	6	0	37	50	28	0	10	179	16	0	5	102	16	474	2,133	4	5	9	10
7:45 AM	0	15	19	10	0	46	62	38	0	14	153	13	0	8	109	16	503	2,220	6	4	10	10
8:00 AM	0	16	21	18	0	35	83	34	0	30	167	23	0	12	120	15	574	2,291	36	22	14	29
8:15 AM	0	36	28	19	0	12	78	29	0	22	171	20	0	17	124	26	582	2,356	10	11	15	15
8:30 AM	0	21	29	15	0	32	60	44	0	6	205	25	0	9	93	22	561	2,373	0	32	7	29
8:45 AM	0	33	24	12	0	44	66	25	0	10	207	17	0	9	95	32	574	2,396	2	7	9	3
9:00 AM	0	31	29	11	0	40	56	43	0	10	244	15	0	11	134	15	639	2,351	3	6	7	4
9:15 AM	0	31	36	7	0	38	56	42	0	10	236	21	0	5	107	10	599		4	5	5	3
9:30 AM	0	28	34	19	0	25	52	36	0	9	247	23	0	9	83	19	584		4	4	6	3
9:45 AM	0	29	30	9	0	30	49	35	0	10	186	19	0	11	102	19	529		2	2	6	0

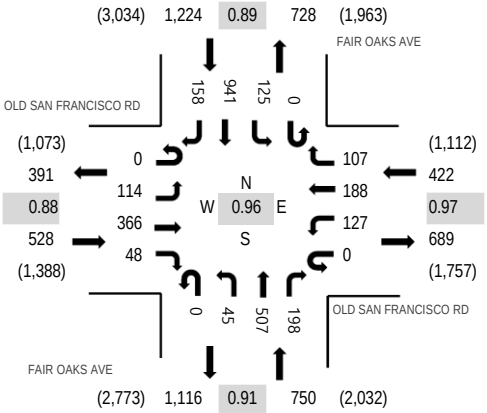
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Lights	0	123	121	41	0	142	229	139	0	35	926	75	0	30	414	76	2,351
Mediums	0	0	2	7	0	5	1	7	0	4	7	1	0	4	5	0	43
Total	0	123	123	49	0	147	230	146	0	39	934	76	0	34	419	76	2,396

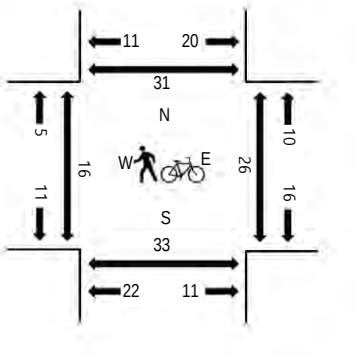
All Traffic Data Services Inc.
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Location: 19 FAIR OAKS AVE & OLD SAN FRANCISCO RD PM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	OLD SAN FRANCISCO RD Eastbound				OLD SAN FRANCISCO RD Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	67	7	0	32	53	13	0	5	113	27	0	17	142	26	531	2,175	1	3	7	3
4:15 PM	0	19	69	11	0	24	39	18	0	16	106	28	0	14	144	24	512	2,264	1	5	4	2
4:30 PM	0	20	84	13	0	26	34	7	0	9	126	26	0	22	155	30	552	2,454	0	8	4	2
4:45 PM	0	26	77	12	0	21	47	22	0	9	103	44	0	26	166	27	580	2,664	3	0	2	4
5:00 PM	0	25	76	14	0	25	44	12	0	12	131	36	0	31	176	38	620	2,842	4	1	6	8
5:15 PM	0	29	111	10	0	24	56	25	0	9	119	49	0	32	204	34	702	2,924	3	9	6	11
5:30 PM	0	37	90	12	0	36	47	26	0	6	124	42	0	37	261	44	762	2,901	5	7	13	8
5:45 PM	0	28	79	15	0	33	48	27	0	12	131	66	0	30	248	41	758	2,746	5	4	4	3
6:00 PM	0	20	86	11	0	34	37	29	0	18	133	41	0	26	228	39	702	2,549	1	5	7	5
6:15 PM	0	28	90	11	0	36	40	17	0	8	134	46	0	38	192	39	679		7	4	9	4
6:30 PM	0	13	66	10	0	36	55	13	0	8	102	37	0	29	201	37	607		2	4	8	2
6:45 PM	0	24	59	10	0	21	39	16	0	8	118	30	0	29	172	35	561		4	2	10	8

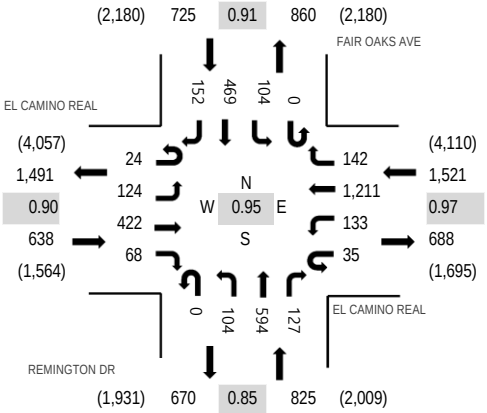
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	113	364	45	0	126	188	104	0	42	505	197	0	122	939	158	2,903
Mediums	0	1	2	3	0	1	0	3	0	3	2	1	0	3	2	0	21
Total	0	114	366	48	0	127	188	107	0	45	507	198	0	125	941	158	2,924

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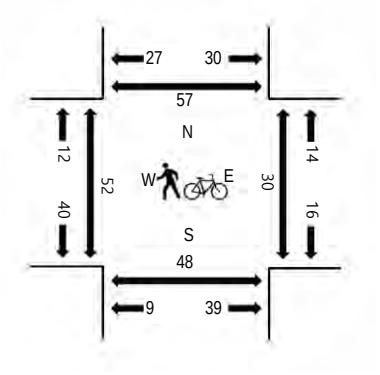
Location: 20 REMINGTON DR & EL CAMINO REAL AM
Date and Start Time: Tuesday, May 8, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 09:15 AM - 09:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				REMINGTON DR Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	2	25	41	11	2	7	167	19	0	10	54	10	0	23	112	30	513	2,688	2	8	4	1
7:15 AM	0	14	60	8	7	14	207	35	0	9	76	22	0	22	173	22	669	3,041	2	7	1	7
7:30 AM	1	17	70	5	3	21	215	22	0	7	139	19	0	22	118	38	697	3,315	5	5	2	9
7:45 AM	4	19	64	8	6	15	336	26	0	8	118	18	0	20	131	36	809	3,480	3	5	2	4
8:00 AM	9	24	73	11	1	41	303	30	0	17	124	23	0	34	148	28	866	3,605	7	7	5	9
8:15 AM	2	35	98	24	6	23	334	35	0	17	182	21	0	19	101	46	943	3,648	6	8	2	5
8:30 AM	5	26	80	20	7	22	343	32	0	21	124	22	0	35	99	26	862	3,679	6	5	4	4
8:45 AM	4	32	80	16	3	36	298	37	0	31	187	25	0	23	129	33	934	3,709	26	8	32	7
9:00 AM	5	23	112	23	8	34	287	33	0	28	143	28	0	26	122	37	909	3,570	9	6	6	17
9:15 AM	6	33	104	12	12	32	310	36	0	26	146	47	0	28	133	49	974		8	6	6	8
9:30 AM	9	36	126	17	12	31	316	36	0	19	118	27	0	27	85	33	892		9	8	4	21
9:45 AM	8	30	113	19	10	31	238	31	0	30	83	30	0	26	99	47	795		11	10	3	9

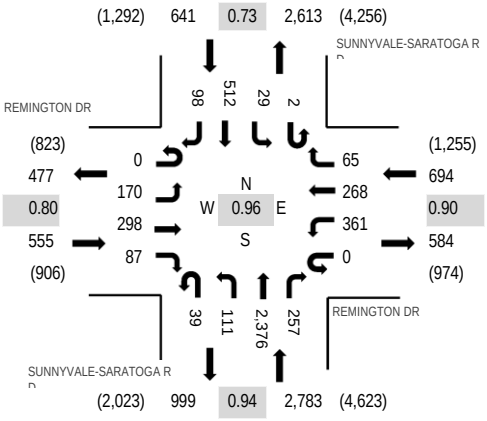
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	1	1	2	0	0	0	4	0	0	0	0	0	0	1	0	0	9
Lights	23	122	403	67	35	128	1,172	141	0	101	585	123	0	101	460	149	3,610
Mediums	0	1	17	1	0	5	35	1	0	3	9	4	0	2	9	3	90
Total	24	124	422	68	35	133	1,211	142	0	104	594	127	0	104	469	152	3,709

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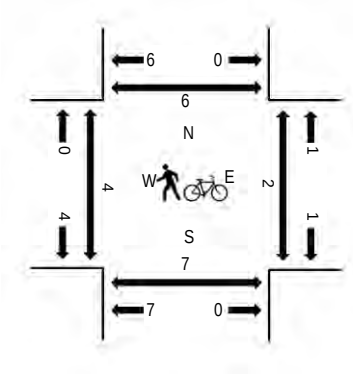
Location: 22 SUNNYVALE-SARATOGA RD & REMINGTON DR AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REMINGTON DR Eastbound				REMINGTON DR Westbound				SUNNYVALE-SARATOGA RD Northbound				SUNNYVALE-SARATOGA RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	16	18	0	76	18	8	13	10	248	36	0	8	119	11	590	3,403	1	2	17	0
7:15 AM	0	21	30	29	0	106	38	8	8	24	304	60	0	5	206	20	859	3,990	1	5	15	1
7:30 AM	0	53	53	23	0	90	58	9	6	25	430	68	0	10	134	7	966	4,342	0	2	1	4
7:45 AM	0	28	54	17	0	75	69	6	5	39	518	46	1	4	99	27	988	4,523	0	2	0	3
8:00 AM	0	47	85	25	0	85	96	11	9	46	558	54	0	7	105	49	1,177	4,673	0	0	3	4
8:15 AM	0	51	102	22	0	102	71	17	8	26	592	60	1	7	135	17	1,211		0	0	1	1
8:30 AM	0	42	56	20	0	74	43	15	9	14	645	72	1	6	133	17	1,147		0	0	0	1
8:45 AM	0	30	55	20	0	100	58	22	13	25	581	71	0	9	139	15	1,138		3	2	3	0

Peak Rolling Hour Flow Rates

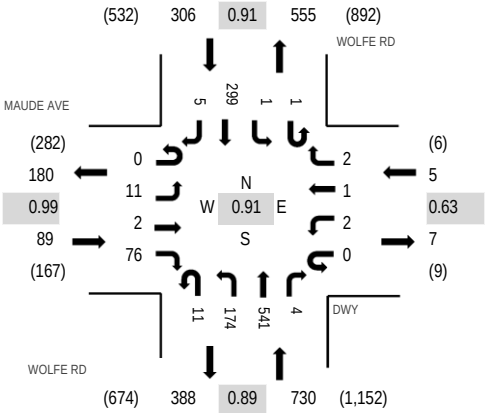
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	4
Lights	0	170	291	85	0	350	263	64	39	109	2,353	247	2	29	500	94	4,596
Mediums	0	0	7	2	0	10	5	1	0	1	22	10	0	0	11	4	73
Total	0	170	298	87	0	361	268	65	39	111	2,376	257	2	29	512	98	4,673

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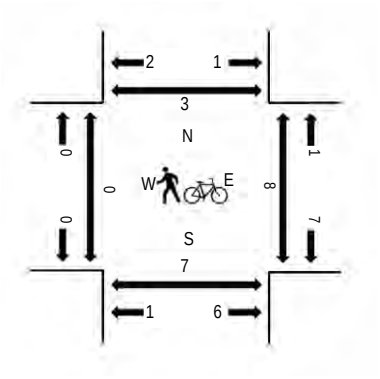
Location: 3 WOLFE RD & DWY AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MAUDE AVE Eastbound				DWY Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	3	0	15	0	0	0	1	2	16	56	0	1	0	48	0	142	727	0	1	1	0
7:15 AM	0	3	0	9	0	0	0	0	1	14	70	0	0	0	59	0	156	826	0	0	0	0
7:30 AM	0	6	0	18	0	0	0	0	0	35	102	1	1	1	56	0	220	979	3	1	5	0
7:45 AM	1	3	0	20	0	0	0	0	1	33	91	0	0	0	57	3	209	1,055	0	3	1	2
8:00 AM	0	4	1	19	0	1	0	0	2	30	107	0	0	0	72	5	241	1,130	0	1	0	1
8:15 AM	0	6	1	16	0	0	0	2	2	55	147	2	1	0	77	0	309		0	3	1	2
8:30 AM	0	0	0	24	0	0	1	0	2	47	138	0	0	0	84	0	296		0	1	2	0
8:45 AM	0	1	0	17	0	1	0	0	5	42	149	2	0	1	66	0	284		0	2	0	0

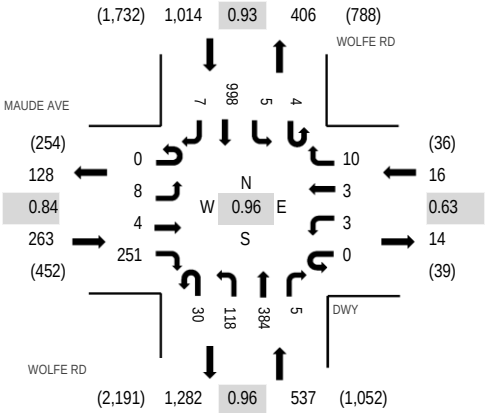
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights	0	11	2	70	0	2	1	2	11	171	525	4	1	1	294	5	1,100
Mediums	0	0	0	6	0	0	0	0	0	3	15	0	0	0	5	0	29
Total	0	11	2	76	0	2	1	2	11	174	541	4	1	1	299	5	1,130

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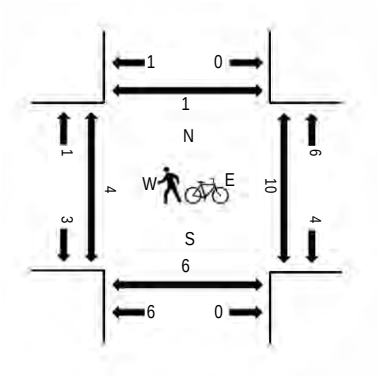
Location: 3 WOLFE RD & DWY PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MAUDE AVE Eastbound				DWY Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	1	37	0	0	2	2	7	32	101	3	1	1	126	3	316	1,471	2	1	0	0
4:15 PM	0	1	1	56	0	1	0	2	3	19	91	3	2	0	144	2	325	1,616	2	0	1	2
4:30 PM	0	2	2	40	0	1	1	3	4	32	101	2	0	3	181	0	372	1,768	4	1	0	8
4:45 PM	0	5	0	73	0	1	1	2	11	23	103	3	3	1	231	1	458	1,830	1	0	2	1
5:00 PM	0	2	1	55	0	1	1	4	6	35	106	0	0	2	247	1	461	1,801	0	4	0	0
5:15 PM	0	0	3	57	0	0	1	2	7	34	94	1	1	2	271	4	477		1	4	3	0
5:30 PM	0	1	0	66	0	1	0	2	6	26	81	1	0	0	249	1	434		2	1	0	0
5:45 PM	0	1	3	45	0	3	3	2	10	31	72	4	1	2	251	1	429		2	7	6	0

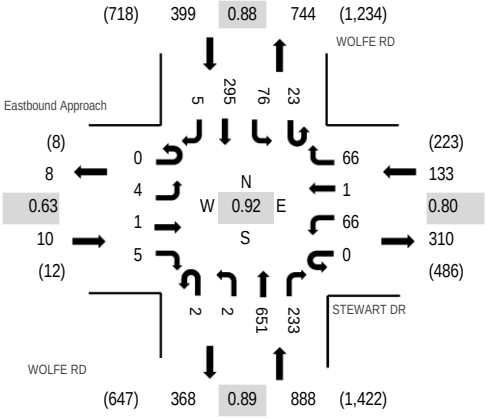
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	8	4	249	0	3	3	10	30	117	381	5	4	5	993	7	1,819
Mediums	0	0	0	1	0	0	0	0	0	1	3	0	0	0	5	0	10
Total	0	8	4	251	0	3	3	10	30	118	384	5	4	5	998	7	1,830

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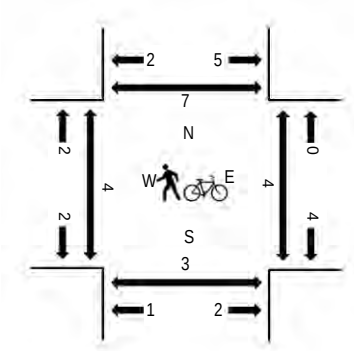
Location: 5 WOLFE RD & STEWART DR AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound Approach Eastbound				STEWART DR Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	0	0	0	11	0	7	1	0	65	20	0	12	45	0	162	945	1	0	0	0
7:15 AM	0	1	0	0	0	7	0	11	0	0	100	18	2	13	63	0	215	1,110	1	0	0	1
7:30 AM	0	0	0	0	0	8	0	14	0	0	117	36	5	20	68	0	268	1,219	0	3	0	1
7:45 AM	0	0	0	0	0	13	0	19	0	0	140	37	8	20	63	0	300	1,341	0	0	0	0
8:00 AM	0	1	0	0	0	14	0	13	1	0	145	50	6	19	78	0	327	1,430	1	3	1	1
8:15 AM	0	1	1	2	0	15	1	19	1	1	154	41	3	17	67	1	324		3	0	0	3
8:30 AM	0	2	0	2	0	26	0	17	0	1	185	63	9	14	68	3	390		0	1	1	2
8:45 AM	0	0	0	1	0	11	0	17	0	0	167	79	5	26	82	1	389		0	0	1	1

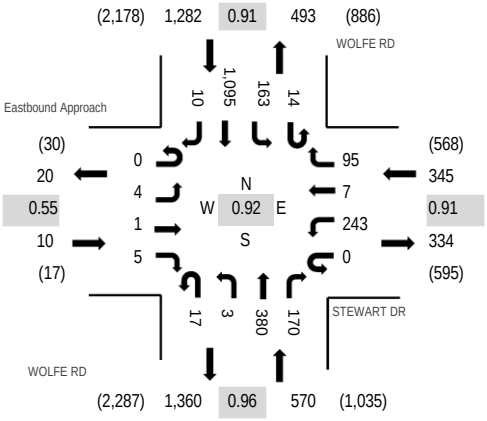
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	4
Lights	0	4	1	5	0	63	1	65	2	2	639	227	23	73	288	4	1,397
Mediums	0	0	0	0	0	2	0	0	0	0	11	6	0	3	6	1	29
Total	0	4	1	5	0	66	1	66	2	2	651	233	23	76	295	5	1,430

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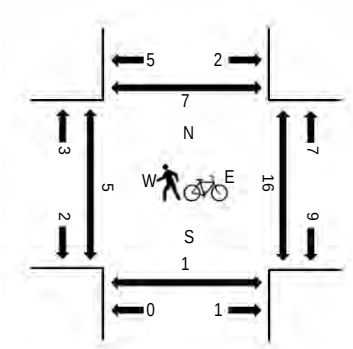
Location: 5 WOLFE RD & STEWART DR PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound Approach Eastbound				STEWART DR Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	33	1	18	3	0	76	36	4	36	141	1	349	1,591	1	5	0	3
4:15 PM	0	0	0	1	0	29	0	18	3	1	66	32	5	25	171	0	351	1,775	2	1	1	1
4:30 PM	0	0	0	1	0	42	1	16	5	1	96	32	6	25	196	0	421	1,975	0	2	0	0
4:45 PM	0	1	3	1	0	46	2	17	2	1	67	44	3	28	253	2	470	2,080	0	3	0	0
5:00 PM	0	0	0	0	0	53	2	20	4	0	99	45	3	32	274	1	533	2,207	4	4	0	4
5:15 PM	0	1	1	1	0	61	2	19	5	0	93	33	4	40	288	3	551		1	5	0	1
5:30 PM	0	0	0	3	0	67	2	26	3	2	83	56	2	32	249	1	526		0	4	0	0
5:45 PM	0	3	0	1	0	62	1	30	5	1	105	36	5	59	284	5	597		0	2	0	1

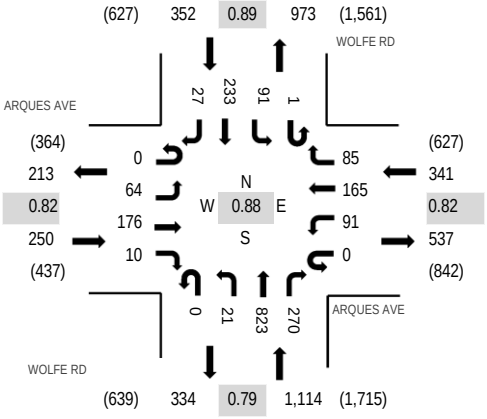
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	4	1	5	0	243	7	95	17	3	375	170	14	162	1,093	10	2,199
Mediums	0	0	0	0	0	0	0	0	0	0	5	0	0	1	2	0	8
Total	0	4	1	5	0	243	7	95	17	3	380	170	14	163	1,095	10	2,207

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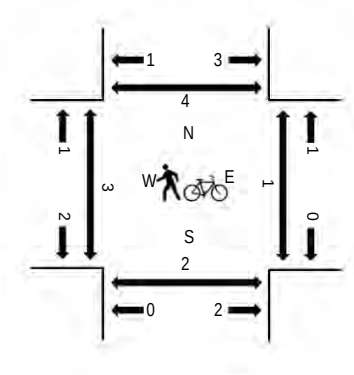
Location: 45 WOLFE RD & ARQUES AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	13	25	0	0	22	30	18	1	3	64	22	0	8	45	1	252	1,349	0	0	0	0
7:15 AM	0	8	25	3	0	17	10	14	0	2	82	20	0	12	46	2	241	1,533	1	0	0	1
7:30 AM	0	21	34	1	0	15	33	21	0	1	133	29	1	16	50	5	360	1,751	0	0	0	1
7:45 AM	0	11	41	5	0	32	54	20	0	3	182	59	0	14	68	7	496	1,974	1	0	0	2
8:00 AM	0	12	33	3	0	19	45	18	0	10	147	52	1	19	71	6	436	2,057	1	0	0	1
8:15 AM	0	17	44	3	0	20	43	26	0	2	169	66	0	22	44	3	459		1	0	0	0
8:30 AM	0	17	42	3	0	23	33	13	0	3	277	72	0	25	65	10	583		1	0	0	2
8:45 AM	0	18	57	1	0	29	44	28	0	6	230	80	0	25	53	8	579		0	0	0	1

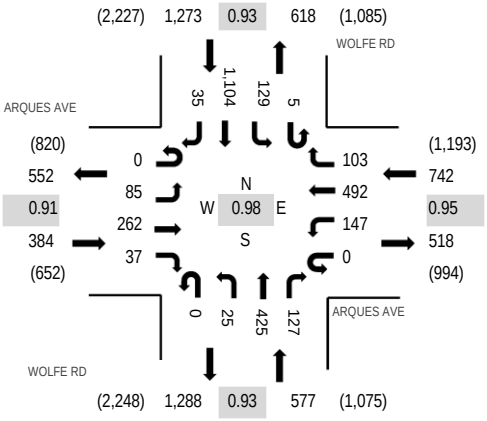
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	2	0	3	0	0	2	1	0	1	0	0	9
Lights	0	64	174	9	0	83	156	79	0	20	806	263	1	85	227	26	1,993
Mediums	0	0	2	1	0	6	9	3	0	1	15	6	0	5	6	1	55
Total	0	64	176	10	0	91	165	85	0	21	823	270	1	91	233	27	2,057

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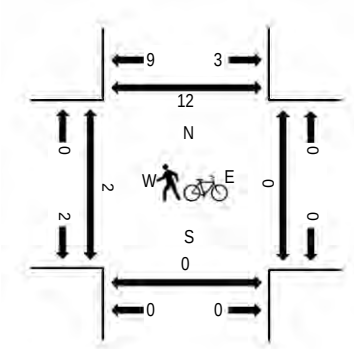
Location: 45 WOLFE RD & ARQUES AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	16	42	4	0	40	37	16	0	3	79	42	1	28	141	4	453	2,171	0	0	1	2
4:15 PM	0	13	51	5	0	30	52	19	0	4	93	43	2	31	170	4	517	2,457	2	0	0	3
4:30 PM	0	19	52	2	0	39	66	21	1	7	74	42	1	28	175	12	539	2,686	0	0	0	3
4:45 PM	0	17	41	6	0	40	74	17	0	1	77	32	2	44	307	4	662	2,880	0	0	0	1
5:00 PM	0	20	75	10	0	31	131	19	0	2	107	37	0	44	258	5	739	2,976	0	0	0	1
5:15 PM	0	20	65	6	0	45	127	24	0	6	93	25	2	26	291	16	746		1	0	0	6
5:30 PM	0	16	56	11	0	30	112	27	0	6	119	30	3	27	289	7	733		0	0	0	2
5:45 PM	0	29	66	10	0	41	122	33	0	11	106	35	0	32	266	7	758		1	0	0	3

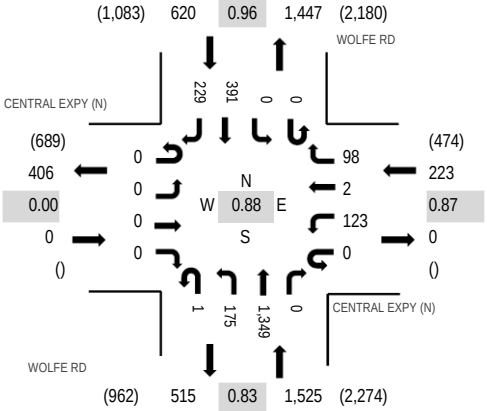
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights	0	83	256	36	0	146	485	103	0	25	403	124	5	129	1,102	34	2,931
Mediums	0	2	6	1	0	1	7	0	0	0	21	3	0	0	2	1	44
Total	0	85	262	37	0	147	492	103	0	25	425	127	5	129	1,104	35	2,976

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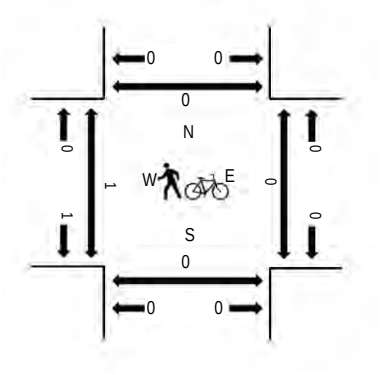
Location: 7 WOLFE RD & CENTRAL EXPY (N) AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (N) Eastbound				CENTRAL EXPY (N) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	34	0	28	0	17	104	0	0	0	55	32	270	1,463	2	0	0	0
7:15 AM	0	0	0	0	0	40	0	24	0	25	148	0	0	0	64	49	350	1,731	0	0	0	0
7:30 AM	0	0	0	0	0	27	0	26	0	42	177	0	0	0	86	40	398	1,908	0	0	0	0
7:45 AM	0	0	0	0	0	52	0	20	0	30	206	0	0	0	89	48	445	2,186	1	0	0	0
8:00 AM	0	0	0	0	0	31	1	26	0	36	285	0	0	0	99	60	538	2,368	0	0	0	0
8:15 AM	0	0	0	0	0	32	1	24	0	43	286	0	0	0	93	48	527		0	0	0	0
8:30 AM	0	0	0	0	0	32	0	24	1	43	415	0	0	0	98	63	676		0	0	0	0
8:45 AM	0	0	0	0	0	28	0	24	0	53	363	0	0	0	101	58	627		1	0	0	0

Peak Rolling Hour Flow Rates

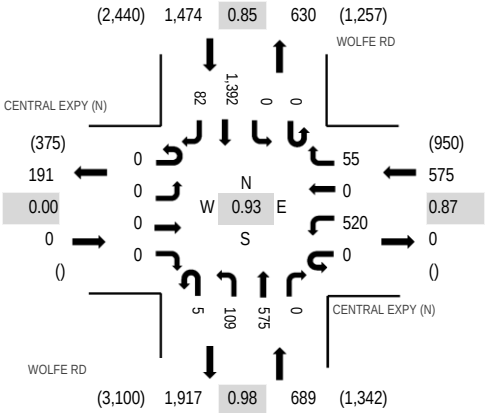
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
Lights	0	0	0	0	0	118	2	97	1	172	1,324	0	0	0	371	227	2,312
Mediums	0	0	0	0	0	4	0	1	0	3	24	0	0	0	20	2	54
Total	0	0	0	0	0	123	2	98	1	175	1,349	0	0	0	391	229	2,368

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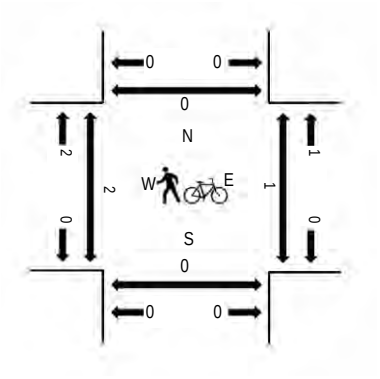
Location: 7 WOLFE RD & CENTRAL EXPY (N) PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (N) Eastbound				CENTRAL EXPY (N) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	67	0	7	0	18	155	0	0	0	138	27	412	1,994	0	1	0	2
4:15 PM	0	0	0	0	0	66	0	14	0	16	128	0	0	0	217	20	461	2,268	2	1	0	0
4:30 PM	0	0	0	0	0	83	0	14	0	23	174	0	0	0	207	30	531	2,452	1	0	0	0
4:45 PM	0	0	0	0	0	108	0	16	0	20	119	0	0	0	297	30	590	2,661	0	0	0	0
5:00 PM	0	0	0	0	0	125	0	16	1	24	142	0	0	0	358	20	686	2,738	2	0	0	0
5:15 PM	0	0	0	0	0	148	0	17	3	26	144	0	0	0	287	20	645		0	0	0	0
5:30 PM	0	0	0	0	0	123	0	9	1	26	149	0	0	0	408	24	740		0	0	0	0
5:45 PM	0	0	0	0	0	124	0	13	0	33	140	0	0	0	339	18	667		0	0	0	0

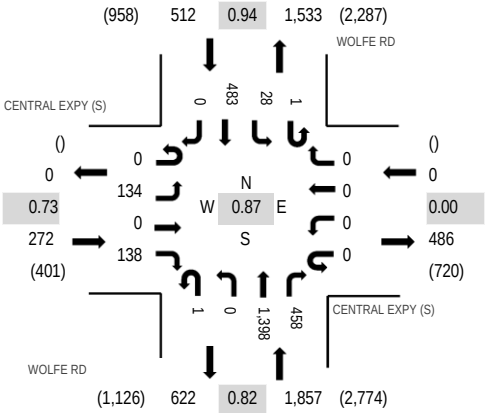
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	0	520	0	55	5	109	557	0	0	0	1,384	81	2,711
Mediums	0	0	0	0	0	0	0	0	0	0	18	0	0	0	8	1	27
Total	0	0	0	0	0	520	0	55	5	109	575	0	0	0	1,392	82	2,738

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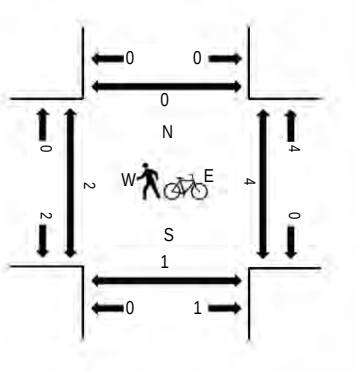
Location: 8 WOLFE RD & CENTRAL EXPY (S) AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (S) Eastbound				CENTRAL EXPY (S) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	0	13	0	0	0	0	0	0	113	33	1	7	81	0	257	1,492	0	0	0	0
7:15 AM	0	5	0	22	0	0	0	0	0	0	169	47	0	4	100	0	347	1,804	1	0	0	0
7:30 AM	0	13	0	19	0	0	0	0	0	0	208	60	0	3	110	0	413	2,045	0	0	0	0
7:45 AM	0	24	0	24	0	0	0	0	0	0	212	75	0	5	135	0	475	2,387	1	0	0	0
8:00 AM	0	24	0	36	0	0	0	0	1	0	299	79	1	5	124	0	569	2,641	0	0	0	0
8:15 AM	0	34	0	24	0	0	0	0	0	0	296	109	0	10	115	0	588		1	1	1	0
8:30 AM	0	31	0	30	0	0	0	0	0	0	430	135	0	5	124	0	755		0	1	0	0
8:45 AM	0	45	0	48	0	0	0	0	0	0	373	135	0	8	120	0	729		0	1	0	0

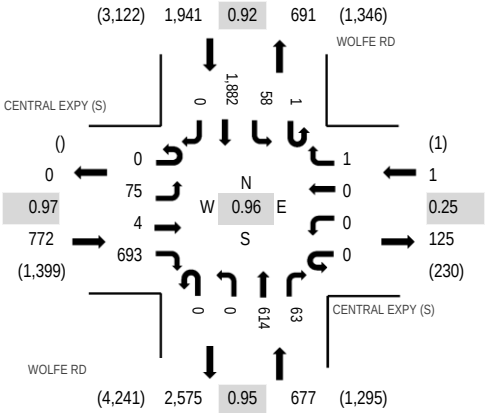
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	5
Lights	0	131	0	135	0	0	0	0	1	0	1,382	452	1	28	460	0	2,590
Mediums	0	3	0	3	0	0	0	0	0	0	14	4	0	0	22	0	46
Total	0	134	0	138	0	0	0	0	1	0	1,398	458	1	28	483	0	2,641

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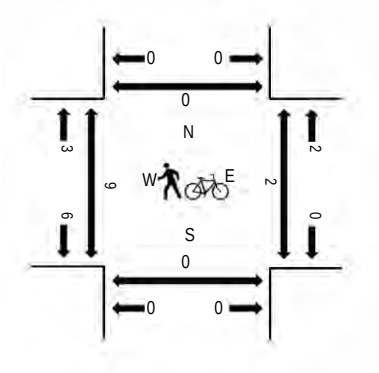
Location: 8 WOLFE RD & CENTRAL EXPY (S) PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY (S) Eastbound				CENTRAL EXPY (S) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	33	0	89	0	0	0	0	0	0	140	19	0	6	198	0	485	2,426	0	0	0	0
4:15 PM	0	17	0	144	0	0	0	0	0	0	128	12	0	18	265	0	584	2,780	1	0	0	0
4:30 PM	0	27	0	148	0	0	0	0	0	0	170	15	0	12	277	0	649	3,024	1	0	0	0
4:45 PM	0	18	1	150	0	0	0	0	0	0	122	12	0	10	395	0	708	3,258	4	0	0	0
5:00 PM	0	18	0	177	0	0	0	1	0	0	149	11	0	23	460	0	839	3,391	3	0	0	0
5:15 PM	0	18	2	177	0	0	0	0	0	0	155	9	0	5	462	0	828		3	0	0	0
5:30 PM	0	19	1	160	0	0	0	0	0	0	156	19	0	14	514	0	883		3	0	0	0
5:45 PM	0	20	1	179	0	0	0	0	0	0	154	24	1	16	446	0	841		0	0	0	0

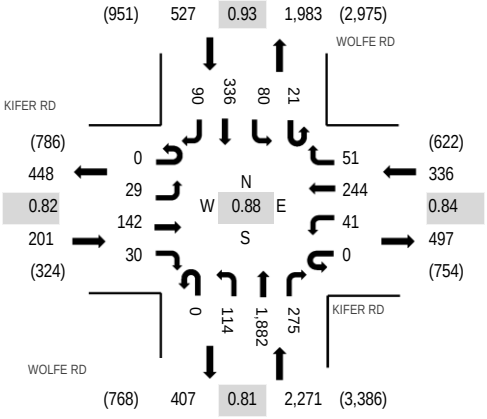
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	75	4	691	0	0	0	1	0	0	606	63	1	58	1,876	0	3,375
Mediums	0	0	0	2	0	0	0	0	0	0	8	0	0	0	6	0	16
Total	0	75	4	693	0	0	0	1	0	0	614	63	1	58	1,882	0	3,391

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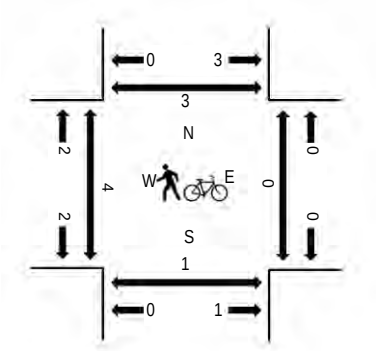
Location: 46 WOLFE RD & KIFER RD AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	16	3	0	14	42	17	1	12	127	24	4	7	55	27	351	1,948	0	0	0	0
7:15 AM	0	3	11	5	0	9	39	8	0	14	187	30	2	8	76	16	408	2,280	0	0	0	0
7:30 AM	0	3	25	7	0	8	49	19	0	26	253	38	2	8	70	22	530	2,654	2	0	0	0
7:45 AM	0	9	30	9	0	13	56	12	0	8	343	52	1	8	91	27	659	3,072	0	0	3	0
8:00 AM	0	3	21	6	0	12	68	10	0	22	345	55	6	21	96	18	683	3,335	0	0	0	0
8:15 AM	0	10	37	10	0	13	74	18	0	25	411	55	8	21	78	22	782		2	0	0	1
8:30 AM	0	8	37	8	0	6	46	10	0	29	596	79	3	14	84	28	948		1	0	1	0
8:45 AM	0	8	47	6	0	10	56	13	0	38	530	86	4	24	78	22	922		1	0	0	2

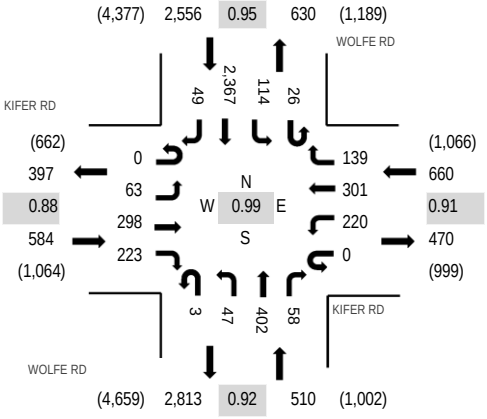
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	4
Lights	0	24	139	28	0	39	237	49	0	113	1,873	274	20	76	329	89	3,290
Mediums	0	4	2	2	0	2	7	2	0	1	9	1	0	3	7	1	41
Total	0	29	142	30	0	41	244	51	0	114	1,882	275	21	80	336	90	3,335

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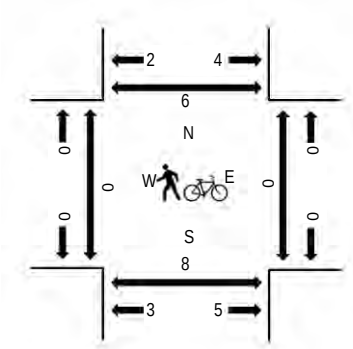
Location: 46 WOLFE RD & KIFER RD PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	19	81	30	0	28	54	14	0	11	107	20	9	36	300	16	725	3,199	1	1	0	1
4:15 PM	0	13	63	30	0	36	32	31	1	13	105	15	7	45	328	13	732	3,509	0	0	0	0
4:30 PM	0	21	80	33	0	46	39	27	0	2	83	13	4	51	386	19	804	3,869	1	0	0	0
4:45 PM	0	4	73	33	0	38	46	15	0	10	96	16	4	36	557	10	938	4,157	2	0	0	0
5:00 PM	0	11	75	41	0	63	85	34	1	14	106	10	6	34	546	9	1,035	4,310	0	0	3	3
5:15 PM	0	14	90	49	0	52	59	42	1	7	87	17	5	25	627	17	1,092		0	0	1	1
5:30 PM	0	19	68	79	0	43	73	35	1	17	112	9	9	20	602	5	1,092		0	0	2	2
5:45 PM	0	19	65	54	0	62	84	28	0	9	97	22	6	35	592	18	1,091		0	0	0	0

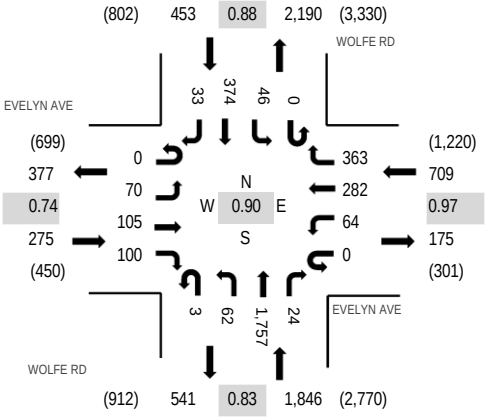
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	61	296	223	0	219	301	137	3	47	400	58	26	110	2,364	49	4,294
Mediums	0	2	1	0	0	1	0	2	0	0	2	0	0	4	3	0	15
Total	0	63	298	223	0	220	301	139	3	47	402	58	26	114	2,367	49	4,310

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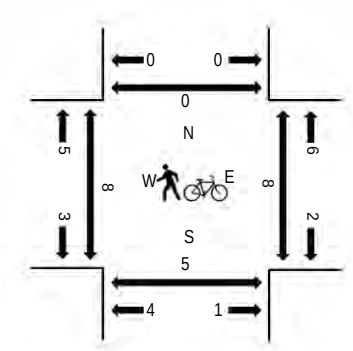
Location: 6 WOLFE RD & EVELYN AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	14	18	8	0	8	38	43	3	11	113	2	0	12	42	10	322	1,959	2	0	0	1
7:15 AM	0	12	14	9	0	10	35	62	0	8	179	4	0	7	69	9	418	2,401	1	0	1	0
7:30 AM	0	10	15	23	0	15	62	62	4	14	268	7	0	13	59	8	560	2,733	1	0	0	0
7:45 AM	0	18	22	12	0	17	86	73	1	21	285	4	1	8	91	20	659	3,028	0	0	0	0
8:00 AM	0	16	17	23	0	18	89	77	2	14	382	5	0	10	101	10	764	3,283	2	1	1	0
8:15 AM	0	22	39	32	0	21	65	98	0	25	347	8	0	10	74	9	750		2	3	3	0
8:30 AM	0	18	29	18	0	15	63	92	0	9	494	7	0	14	89	7	855		3	0	1	0
8:45 AM	0	14	20	27	0	10	65	96	1	14	534	4	0	12	110	7	914		0	0	0	0

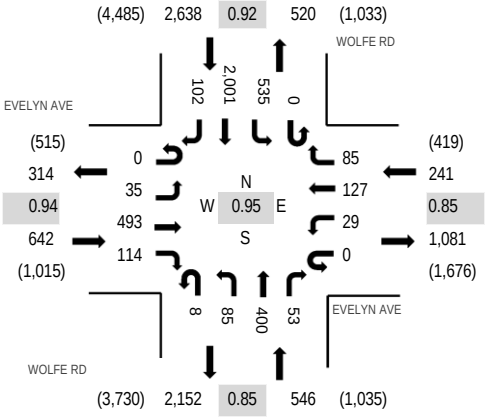
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	0	0	0	0	0	0	0	1	1	0	0	0	2	0	6
Lights	0	66	102	97	0	64	279	360	3	55	1,746	22	0	45	362	29	3,230
Mediums	0	2	3	3	0	0	3	3	0	6	10	2	0	1	10	4	47
Total	0	70	105	100	0	64	282	363	3	62	1,757	24	0	46	374	33	3,283

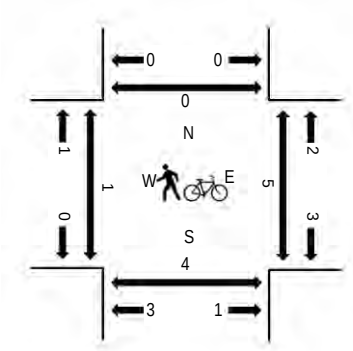
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Location: 6 WOLFE RD & EVELYN AVE PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	EVELYN AVE Eastbound				EVELYN AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	9	42	14	0	6	14	14	1	12	106	9	1	39	296	15	578	2,887	0	0	1	0
4:15 PM	0	7	61	21	1	4	20	23	0	7	68	11	0	92	313	11	639	3,267	2	0	1	0
4:30 PM	0	13	62	31	0	13	19	16	0	11	113	10	1	76	374	25	764	3,698	0	0	0	0
4:45 PM	0	13	79	21	0	7	29	12	1	12	117	11	0	102	476	26	906	3,967	0	1	0	0
5:00 PM	0	11	127	30	0	13	32	15	1	16	79	13	0	135	466	20	958	4,067	1	1	2	0
5:15 PM	0	7	110	23	0	5	28	23	3	21	119	18	0	154	535	24	1,070		0	3	1	0
5:30 PM	0	7	131	33	0	5	34	15	0	21	105	10	0	140	506	26	1,033		0	1	0	0
5:45 PM	0	10	125	28	0	6	33	32	4	27	97	12	0	106	494	32	1,006		0	0	1	0

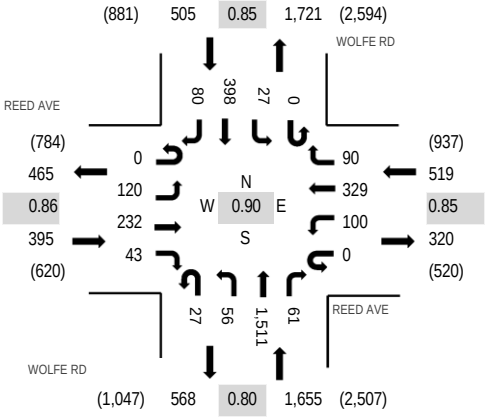
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	34	492	112	0	29	127	84	8	82	396	53	0	534	1,999	102	4,052
Mediums	0	1	1	2	0	0	0	1	0	3	4	0	0	1	2	0	15
Total	0	35	493	114	0	29	127	85	8	85	400	53	0	535	2,001	102	4,067

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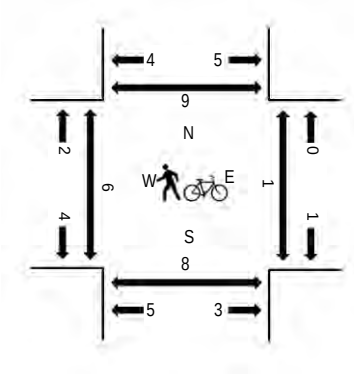
Location: 47 WOLFE RD & REED AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	19	29	8	0	24	35	14	1	5	91	11	0	4	62	13	316	1,871	0	0	0	0
7:15 AM	0	10	35	7	0	34	47	14	2	6	139	26	0	0	82	10	412	2,231	0	0	0	1
7:30 AM	0	9	27	14	0	25	71	20	4	5	221	12	0	4	94	6	512	2,534	2	0	1	1
7:45 AM	0	20	34	13	0	25	92	17	7	7	299	16	0	2	77	22	631	2,880	0	0	0	2
8:00 AM	0	30	52	12	0	22	86	18	6	16	273	12	0	9	114	26	676	3,074	2	1	0	5
8:15 AM	0	33	71	11	0	24	86	18	6	13	326	17	0	8	76	26	715		1	0	2	1
8:30 AM	0	33	68	8	0	27	97	37	9	9	428	22	0	5	98	17	858		2	0	2	1
8:45 AM	0	24	41	12	0	27	60	17	6	18	484	10	0	5	110	11	825		1	0	1	2

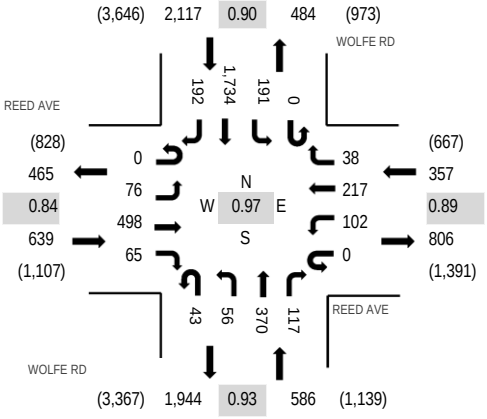
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	118	230	39	0	98	326	88	27	51	1,497	60	0	25	385	77	3,021
Mediums	0	2	2	4	0	2	3	2	0	5	14	1	0	2	13	3	53
Total	0	120	232	43	0	100	329	90	27	56	1,511	61	0	27	398	80	3,074

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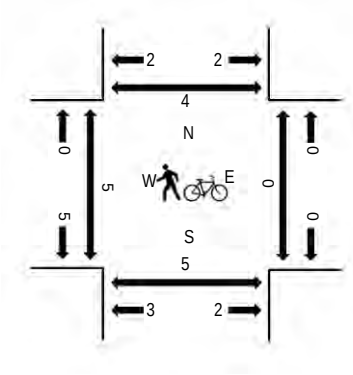
Location: 47 WOLFE RD & REED AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	15	81	12	0	22	53	7	6	10	93	26	0	27	233	25	610	2,860	1	3	8	0
4:15 PM	0	23	80	10	0	20	33	17	6	14	102	21	0	28	296	36	686	3,153	0	6	2	2
4:30 PM	0	21	76	10	0	19	44	8	4	11	84	25	0	29	338	34	703	3,416	0	0	1	0
4:45 PM	0	10	112	18	0	19	61	7	6	15	99	31	3	49	404	27	861	3,660	1	1	3	3
5:00 PM	0	23	115	15	0	26	52	10	9	13	87	28	0	60	434	31	903	3,699	0	0	0	0
5:15 PM	0	22	105	14	0	25	47	8	10	13	85	32	0	47	487	54	949		0	0	2	0
5:30 PM	0	15	156	19	0	21	57	11	9	18	99	31	0	47	416	48	947		0	0	1	3
5:45 PM	0	16	122	17	0	30	61	9	15	12	99	26	0	37	397	59	900		1	0	2	1

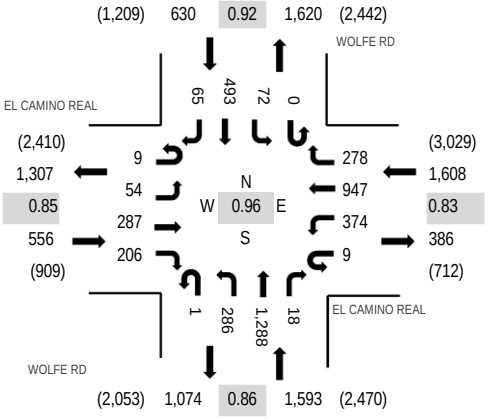
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	75	495	62	0	101	217	36	43	54	367	117	0	189	1,725	192	3,673
Mediums	0	1	3	3	0	1	0	2	0	2	3	0	0	2	9	0	26
Total	0	76	498	65	0	102	217	38	43	56	370	117	0	191	1,734	192	3,699

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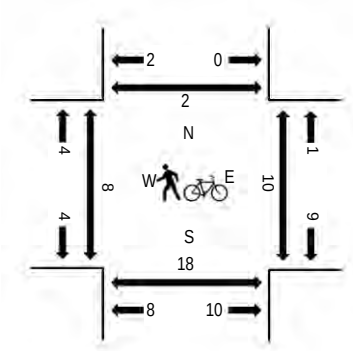
Location: 29 WOLFE RD & EL CAMINO REAL AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	4	48	22	0	97	106	25	0	31	82	6	0	12	91	1	526	3,230	3	2	0	1
7:15 AM	2	4	40	32	1	91	191	22	0	53	138	4	0	18	118	14	728	3,719	3	4	1	4
7:30 AM	0	6	46	41	8	95	222	36	0	51	180	4	0	32	125	18	864	4,076	1	5	3	5
7:45 AM	1	3	75	28	4	127	325	71	0	70	251	7	0	21	112	17	1,112	4,353	0	3	1	4
8:00 AM	1	9	61	37	2	96	218	86	1	70	256	6	0	17	141	14	1,015	4,387	0	4	2	2
8:15 AM	1	14	71	60	4	98	242	79	0	64	297	6	0	18	120	11	1,085		1	2	4	0
8:30 AM	5	18	79	61	1	86	237	64	0	79	344	5	0	23	115	24	1,141		1	1	1	0
8:45 AM	2	13	76	48	2	94	250	49	0	73	391	1	0	14	117	16	1,146		6	2	9	0

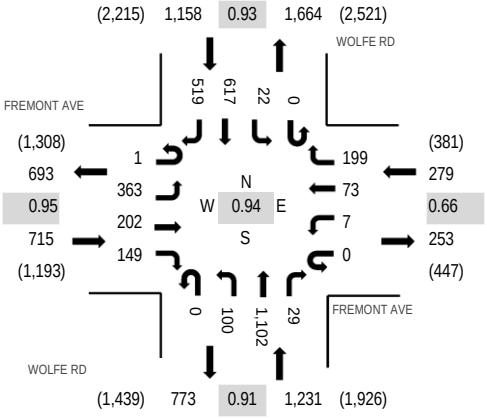
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	1	0	1	3	0	0	0	0	0	0	0	1	0	8
Lights	9	53	268	202	8	362	916	276	1	278	1,266	18	0	72	482	65	4,276
Mediums	0	1	17	3	1	11	28	2	0	8	22	0	0	0	10	0	103
Total	9	54	287	206	9	374	947	278	1	286	1,288	18	0	72	493	65	4,387

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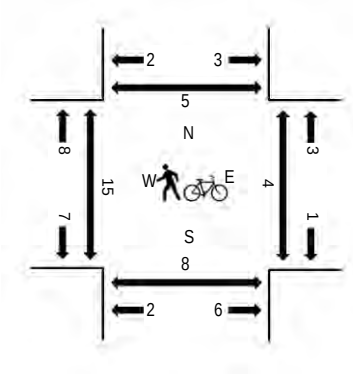
Location: 30 WOLFE RD & FREMONT AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	FREMONT AVE Eastbound				FREMONT AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	30	27	15	0	1	7	7	0	12	82	2	0	2	93	119	397	2,332	1	0	3	0
7:15 AM	0	67	37	35	0	2	11	8	0	21	98	3	0	4	145	113	544	2,716	0	2	1	1
7:30 AM	0	61	33	38	0	1	10	16	0	36	174	2	0	20	154	103	648	2,986	2	0	1	2
7:45 AM	0	64	35	36	0	2	15	22	0	29	228	8	0	21	144	139	743	3,239	2	0	1	0
8:00 AM	0	68	67	51	0	2	15	18	0	22	251	6	0	4	144	133	781	3,383	4	0	4	1
8:15 AM	0	102	41	38	0	1	16	31	0	29	269	5	0	6	147	129	814		4	0	2	3
8:30 AM	1	97	55	35	0	0	18	72	0	25	308	7	0	7	163	113	901		3	0	1	1
8:45 AM	0	96	39	25	0	4	24	78	0	24	274	11	0	5	163	144	887		0	4	1	0

Peak Rolling Hour Flow Rates

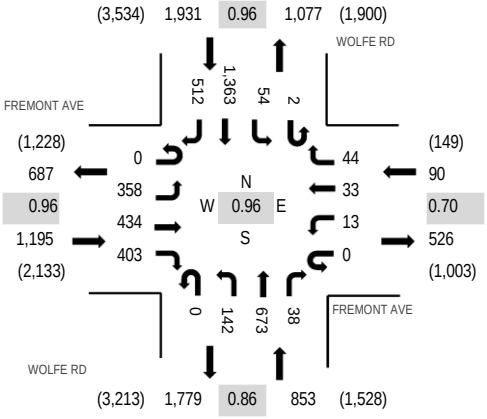
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	4
Lights	1	361	198	148	0	7	72	199	0	98	1,088	29	0	22	591	511	3,325
Mediums	0	2	3	1	0	0	1	0	0	2	12	0	0	0	25	8	54
Total	1	363	202	149	0	7	73	199	0	100	1,102	29	0	22	617	519	3,383

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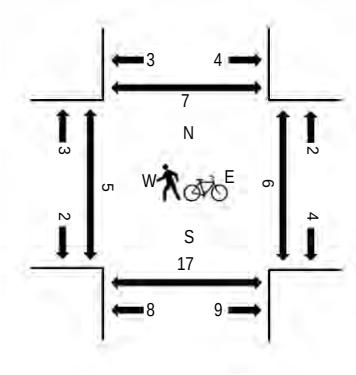
Location: 30 WOLFE RD & FREMONT AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	FREMONT AVE Eastbound				FREMONT AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	68	86	58	0	2	4	8	0	24	94	26	0	17	247	110	744	3,275	1	7	7	1
4:15 PM	0	76	87	69	0	1	5	7	0	26	134	16	0	13	253	83	770	3,502	1	2	2	0
4:30 PM	0	80	87	67	0	0	7	5	0	27	126	16	0	13	296	117	841	3,751	1	3	1	0
4:45 PM	1	78	100	81	0	3	10	7	0	34	140	12	0	4	357	93	920	3,971	1	1	1	1
5:00 PM	0	78	118	91	0	1	7	9	0	31	124	7	0	16	366	123	971	4,069	0	0	5	0
5:15 PM	0	106	104	101	0	5	7	6	0	33	164	10	1	8	356	118	1,019		0	2	0	3
5:30 PM	0	95	103	112	0	2	8	13	0	42	192	13	1	13	326	141	1,061		3	1	2	2
5:45 PM	0	79	109	99	0	5	11	16	0	36	193	8	0	17	315	130	1,018		0	3	5	2

Peak Rolling Hour Flow Rates

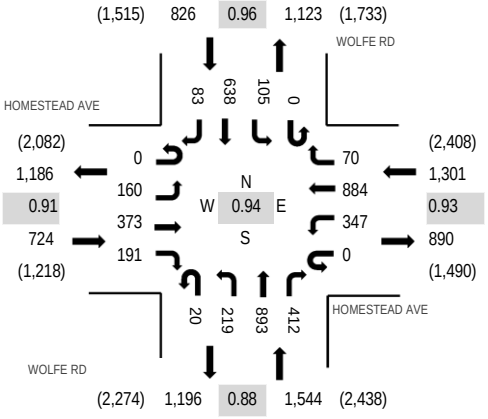
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	353	432	402	0	13	33	44	0	142	665	38	2	54	1,355	506	4,039
Mediums	0	4	2	1	0	0	0	0	0	0	8	0	0	0	8	6	29
Total	0	358	434	403	0	13	33	44	0	142	673	38	2	54	1,363	512	4,069

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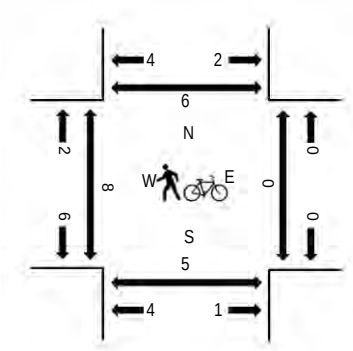
Location: 31 WOLFE RD & HOMESTEAD AVE AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD AVE Eastbound				HOMESTEAD AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	6	35	27	0	70	129	5	5	30	65	43	0	9	112	3	539	3,184	0	1	1	0
7:15 AM	0	20	64	36	0	88	170	12	5	23	92	62	0	14	138	11	735	3,668	2	1	4	0
7:30 AM	0	17	72	40	0	84	195	16	8	39	142	78	0	22	165	8	886	4,019	0	1	0	0
7:45 AM	0	33	105	39	0	86	234	18	5	36	184	77	0	19	170	18	1,024	4,302	3	3	2	2
8:00 AM	0	34	97	50	0	88	208	4	3	51	166	99	0	15	186	22	1,023	4,395	2	0	4	0
8:15 AM	0	42	95	48	0	77	226	14	10	48	215	103	0	41	149	18	1,086		1	0	0	0
8:30 AM	0	47	99	60	0	80	232	23	1	59	243	106	0	29	167	23	1,169		1	0	0	2
8:45 AM	0	37	82	33	0	102	218	29	6	61	269	104	0	20	136	20	1,117		3	0	1	2

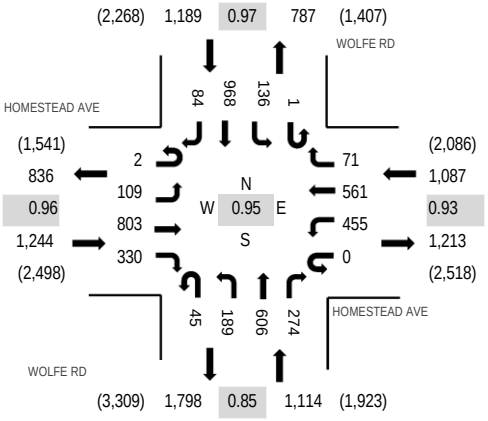
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	1	0	0	0	0	0	1	0	0	2	0	5
Lights	0	152	369	181	0	334	867	64	20	214	868	399	0	103	621	79	4,271
Mediums	0	7	4	10	0	12	17	6	0	5	25	12	0	2	15	4	119
Total	0	160	373	191	0	347	884	70	20	219	893	412	0	105	638	83	4,395

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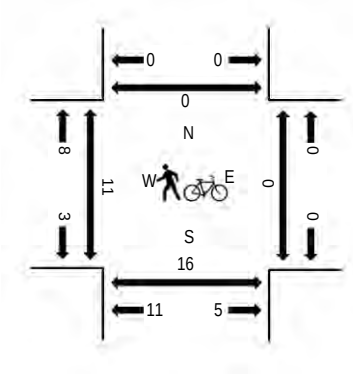
Location: 31 WOLFE RD & HOMESTEAD AVE PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD AVE Eastbound				HOMESTEAD AVE Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	16	248	53	0	92	128	22	4	21	94	45	0	26	187	24	960	4,141	1	4	0	1
4:15 PM	0	23	242	52	0	91	116	24	6	28	131	58	0	36	238	16	1,061	4,272	0	5	5	1
4:30 PM	0	25	246	54	0	102	158	29	16	31	96	55	0	32	181	21	1,046	4,362	4	2	3	1
4:45 PM	0	23	205	67	0	91	120	26	11	33	111	69	0	43	266	9	1,074	4,485	3	1	5	3
5:00 PM	0	24	215	62	0	100	128	12	13	35	128	59	0	30	265	20	1,091	4,634	0	0	1	0
5:15 PM	0	29	197	71	0	120	151	19	9	48	150	66	0	32	246	13	1,151		4	0	4	0
5:30 PM	1	31	186	101	0	111	138	16	10	53	158	59	0	28	252	25	1,169		1	0	4	0
5:45 PM	1	25	205	96	0	124	144	24	13	53	170	90	1	46	205	26	1,223		3	0	6	0

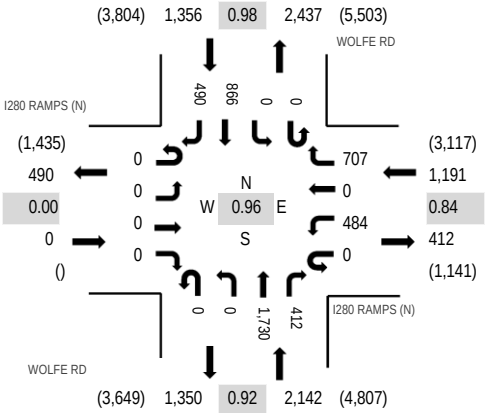
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	4
Lights	2	109	790	327	0	454	560	71	44	186	604	250	1	134	958	84	4,574
Mediums	0	0	13	3	0	1	1	0	0	3	2	24	0	2	7	0	56
Total	2	109	803	330	0	455	561	71	45	189	606	274	1	136	968	84	4,634

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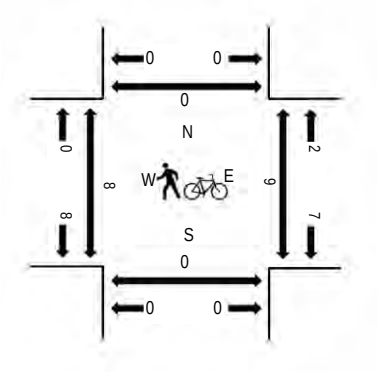
Location: 9 WOLFE RD & I280 RAMPS (N) AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (N) Eastbound				I280 RAMPS (N) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	63	0	120	0	0	115	57	0	0	111	85	551	2,970	0	1	0	0
7:15 AM	0	0	0	0	0	57	0	72	0	0	183	68	0	0	159	87	626	3,384	1	1	0	0
7:30 AM	0	0	0	0	0	50	0	103	0	0	245	118	0	0	185	165	866	3,866	1	1	0	0
7:45 AM	0	0	0	0	0	68	0	130	0	0	266	115	0	0	223	125	927	4,220	0	2	0	0
8:00 AM	0	0	0	0	0	72	0	136	0	0	314	114	0	0	216	113	965	4,510	0	1	0	0
8:15 AM	0	0	0	0	0	97	0	143	0	0	414	105	0	0	256	93	1,108	4,689	1	1	0	0
8:30 AM	0	0	0	0	0	116	0	179	0	0	462	115	0	0	204	144	1,220	4,594	0	3	0	0
8:45 AM	0	0	0	0	0	125	0	187	0	0	491	89	0	0	207	118	1,217	4,375	0	2	0	0
9:00 AM	0	0	0	0	0	146	0	198	0	0	363	103	0	0	199	135	1,144	4,248	2	3	0	0
9:15 AM	0	0	0	0	0	145	0	169	0	0	299	72	0	0	215	113	1,013		1	3	0	0
9:30 AM	0	0	0	0	0	141	0	186	0	0	253	102	0	0	183	136	1,001		0	1	0	0
9:45 AM	0	0	0	0	0	200	0	214	0	0	261	83	0	0	211	121	1,090		1	1	0	0

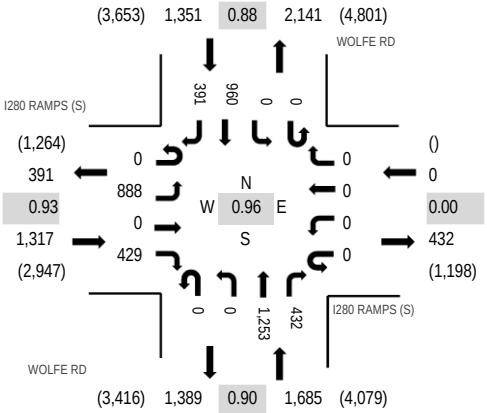
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	4	1	0	0	0	3	10
Lights	0	0	0	0	0	476	0	691	0	0	1,673	375	0	0	842	479	4,536
Mediums	0	0	0	0	0	7	0	15	0	0	53	36	0	0	24	8	143
Total	0	0	0	0	0	484	0	707	0	0	1,730	412	0	0	866	490	4,689

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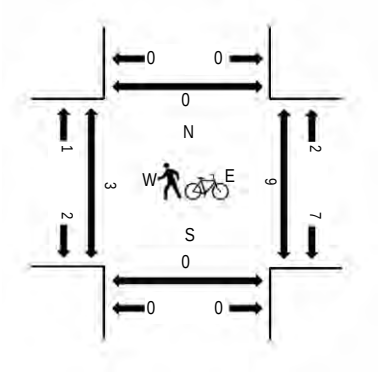
Location: 10 WOLFE RD & I280 RAMPS (S) AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (S) Eastbound				I280 RAMPS (S) Westbound				WOLFE RD Northbound				WOLFE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	63	0	33	0	0	0	0	0	0	109	89	0	0	95	80	469	2,709	0	0	0	0
7:15 AM	0	88	0	49	0	0	0	0	0	0	163	88	0	0	110	106	604	3,127	1	3	0	0
7:30 AM	0	123	0	63	0	0	0	0	0	0	240	120	0	0	117	118	781	3,605	1	2	0	0
7:45 AM	0	140	0	61	0	0	0	0	0	0	241	122	0	0	162	129	855	3,951	0	3	0	0
8:00 AM	0	172	0	69	0	0	0	0	0	0	256	102	0	0	186	102	887	4,229	0	1	0	0
8:15 AM	0	223	0	103	0	0	0	0	0	0	296	106	0	0	247	107	1,082	4,353	0	1	0	0
8:30 AM	0	234	0	104	0	0	0	0	0	0	342	127	0	0	224	96	1,127	4,198	3	1	0	0
8:45 AM	0	231	0	123	0	0	0	0	0	0	349	98	0	0	238	94	1,133	3,933	0	2	0	0
9:00 AM	0	200	0	99	0	0	0	0	0	0	266	101	0	0	251	94	1,011	3,741	0	5	0	0
9:15 AM	0	160	0	119	0	0	0	0	0	0	210	77	0	0	229	132	927		3	3	0	0
9:30 AM	0	140	0	100	0	0	0	0	0	0	213	84	0	0	228	97	862		0	1	0	0
9:45 AM	0	146	0	104	0	0	0	0	0	0	196	84	0	0	302	109	941		3	1	0	0

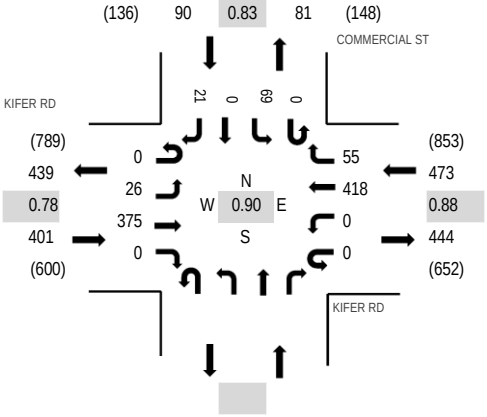
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	3	4	0	0	1	0	10
Lights	0	838	0	413	0	0	0	0	0	0	1,210	383	0	0	938	380	4,162
Mediums	0	48	0	16	0	0	0	0	0	0	40	45	0	0	21	11	181
Total	0	888	0	429	0	0	0	0	0	0	1,253	432	0	0	960	391	4,353

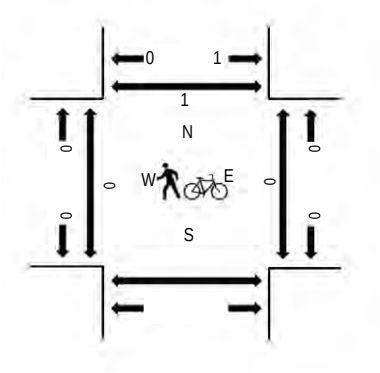
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Location: 9 COMMERCIAL ST & KIFER RD AM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				COMMERCIAL ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	28	0	0	0	76	9					0	3	0	3	120	625	0	0		0
7:15 AM	0	4	31	0	0	0	61	13					0	5	0	8	122	707	0	0		0
7:30 AM	0	5	51	0	0	0	97	16					0	10	0	3	182	811	0	0		1
7:45 AM	0	9	70	0	0	0	98	10					0	10	0	4	201	898	0	0		0
8:00 AM	0	6	64	0	0	0	97	13					0	19	0	3	202	964	0	0		0
8:15 AM	0	6	90	0	0	0	98	10					0	19	0	3	226		0	0		0
8:30 AM	0	5	102	0	0	0	122	13					0	20	0	7	269		0	0		1
8:45 AM	0	9	119	0	0	0	101	19					0	11	0	8	267		0	0		0

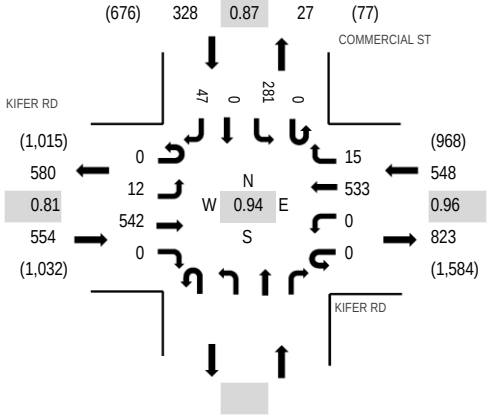
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	1	0					0	0	0	0	3
Lights	0	25	367	0	0	0	399	55					0	68	0	21	935
Mediums	0	1	6	0	0	0	18	0					0	1	0	0	26
Total	0	26	375	0	0	0	418	55					0	69	0	21	964

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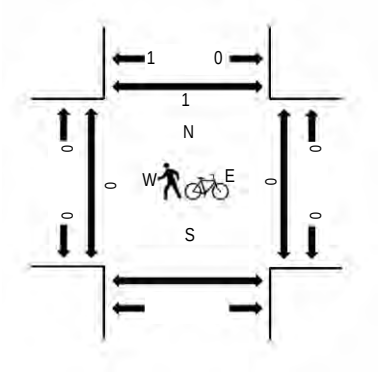
Location: 9 COMMERCIAL ST & KIFER RD PM
Date and Start Time: Wednesday, December 6, 2017
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				COMMERCIAL ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	3	130	0	0	0	81	3					0	103	0	6	326	1,308	0	0		1
4:15 PM	0	4	112	0	0	0	85	4					0	97	0	11	313	1,361	0	0		0
4:30 PM	0	8	125	0	0	0	96	7					0	66	0	8	310	1,388	0	0		1
4:45 PM	0	1	117	0	0	0	120	4					0	105	0	12	359	1,430	0	0		0
5:00 PM	0	4	167	0	0	0	134	5					0	55	0	14	379	1,368	0	0		0
5:15 PM	0	3	118	0	0	0	146	2					0	64	0	7	340		0	0		0
5:30 PM	0	4	140	0	0	0	133	4					0	57	0	14	352		0	0		0
5:45 PM	0	13	83	0	0	0	136	8					0	45	0	12	297		0	0		0

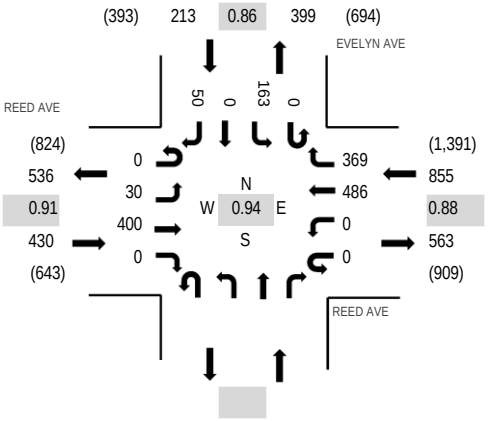
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	11	533	0	0	0	523	15					0	277	0	46	1,405
Mediums	0	1	9	0	0	0	10	0					0	4	0	1	25
Total	0	12	542	0	0	0	533	15					0	281	0	47	1,430

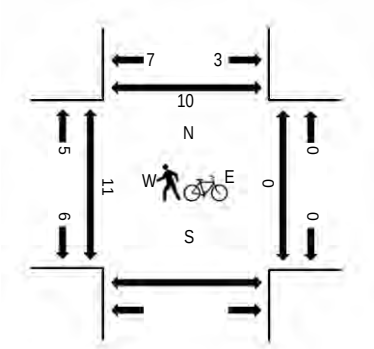
All Traffic Data Services Inc.
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Location: 9 EVELYN AVE & REED AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				Northbound				EVELYN AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	3	37	0	0	0	53	62					0	22	0	6	183	929	2	0		1
7:15 AM	0	2	43	0	0	0	45	60					0	39	0	6	195	1,131	2	0		1
7:30 AM	0	4	59	0	0	0	77	78					0	34	0	7	259	1,333	0	0		2
7:45 AM	0	4	61	0	0	0	79	82					0	51	0	15	292	1,430	2	0		2
8:00 AM	0	9	81	0	0	0	134	109					0	33	0	19	385	1,498	3	0		6
8:15 AM	0	8	107	0	0	0	135	94					0	44	0	9	397		2	0		2
8:30 AM	0	7	111	0	0	0	104	79					0	43	0	12	356		3	0		2
8:45 AM	0	6	101	0	0	0	113	87					0	43	0	10	360		0	0		0

Peak Rolling Hour Flow Rates

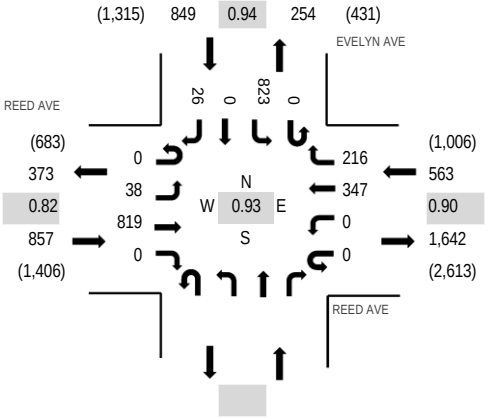
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	1	1					0	1	0	0	4
Lights	0	30	392	0	0	0	471	364					0	157	0	50	1,464
Mediums	0	0	7	0	0	0	14	4					0	5	0	0	30
Total	0	30	400	0	0	0	486	369					0	163	0	50	1,498

All Traffic Data Services Inc.

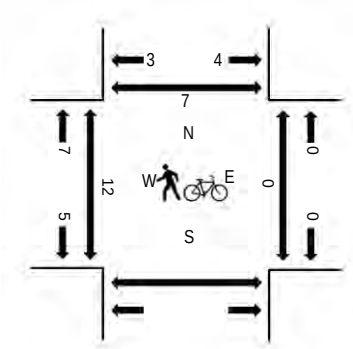
(303) 216-2439
www.alltrafficdata.net

Location: 9 EVELYN AVE & REED AVE PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	REED AVE Eastbound				REED AVE Westbound				Northbound				EVELYN AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	88	0	0	0	66	31					0	81	0	5	276	1,458	0	0		1
4:15 PM	0	6	112	0	0	0	78	41					0	102	0	4	343	1,734	1	0		3
4:30 PM	0	5	177	0	0	0	70	30					0	135	0	7	424	2,004	2	0		1
4:45 PM	0	8	148	0	0	0	76	51					0	128	0	4	415	2,120	4	0		4
5:00 PM	0	11	197	0	0	0	82	54					0	201	0	7	552	2,269	1	0		2
5:15 PM	0	5	255	0	0	0	78	56					0	212	0	7	613		3	0		2
5:30 PM	0	10	166	0	0	0	92	45					0	221	0	6	540		3	0		2
5:45 PM	0	12	201	0	0	0	95	61					0	189	0	6	564		0	0		0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0					0	0	0	0	1
Lights	0	38	815	0	0	0	344	215					0	822	0	26	2,260
Mediums	0	0	3	0	0	0	3	1					0	1	0	0	8
Total	0	38	819	0	0	0	347	216					0	823	0	26	2,269

	Location																
Int Node	NB/SB	EB/WB	Date	Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total
60	Lawrence Ex	Tasman Dr	5/17/2018	7:50	5	145	25	3	67	5	15	7	38	15	14	7	346
60	Lawrence Ex	Tasman Dr		7:55	13	179	13	4	55	7	16	8	20	26	30	10	381
				8:00	21	194	25	3	70	6	12	12	30	14	10	12	409
				8:05	26	217	24	6	79	9	31	9	9	21	23	18	472
				8:10	19	117	18	3	42	9	27	15	18	19	23	21	331
				8:15	4	176	19	2	52	3	20	14	8	16	26	13	353
				8:20	17	197	37	7	62	9	20	11	21	13	20	12	426
				8:25	11	193	19	3	66	2	25	9	9	27	10	6	380
				8:30	16	175	24	5	74	12	17	9	14	30	8	10	394
				8:35	11	117	28	5	44	2	28	11	29	34	21	22	352
				8:40	7	190	26	6	70	6	18	12	24	24	27	25	435
				8:45	12	198	30	7	64	11	16	9	10	30	14	20	421
				8:50	6	151	20	11	69	4	17	13	17	45	26	25	404
				8:55	16	145	15	4	52	3	24	17	16	33	21	27	373

Peak-hour														Total	Total
			7:50 - 8:50 AM	162	2098	288	54	745	81	245	126	230	269	226	176	4700	4700
			7:55 - 8:55 AM	163	2104	283	62	747	80	247	132	209	299	238	194	4758	4758
			8:00 - 9:00 AM	166	2070	285	62	744	76	255	141	205	306	229	211	4750	4750

Int Node	Location NB/SB	EB/WB	Date	Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total
61	Lawrence Ex	Lakehaven Dr	5/17/2018	7:15	21	89	5	4	85	2	3	4	17	17	6	4	257
61	Lawrence Ex	Lakehaven Dr		7:20	21	140	10	6	110	1	4	2	22	21	10	1	348
				7:25	18	141	4	5	76	1	4	4	26	26	15	6	326
				7:30	21	138	7	5	96		2	3	30	15	9	3	329
				7:35	14	153	11	9	104	2	6	6	28	29	11	2	375
				7:40	34	128	10	7	47		5	6	23	41	10	2	313
				7:45	35	161	11	13	106		6	5	44	39	21	6	447
				7:50	33	161	8	16	93	1	12	10	47	43	22	3	449
				7:55	28	202	16	6	89	2	10	5	27	41	9	6	441
				8:00	28	206	6	3	58	1	19	6	29	44	16	5	421
				8:05	33	221	8	10	124	1	18	1	33	32	6	3	490
				8:10	30	198	7	6	95	1	3	6	19	13	7	4	389
				8:15	9	212	6	2	68	1	7	3	19	23	7	6	363
				8:20	29	145	5	2	50	1	10	3	31	22	11	4	313
				8:25	18	222	4	4	107	1	9	3	25	33	6	5	437
				8:30	27	223	2	4	107		4	4	19	20	2	7	419
				8:35	13	172	3	4	121		4	1	16	29	4	4	371
				8:40	17	152		7	81		12	1	22	32	4	7	335
				8:45	13	205	6	4	96	3	4	1	13	31	6	7	389
				8:50	14	196	8	6	103	1	1	3	13	17	2	7	371
				8:55	10	154	2	5	117		6	4	16	27	4	3	348

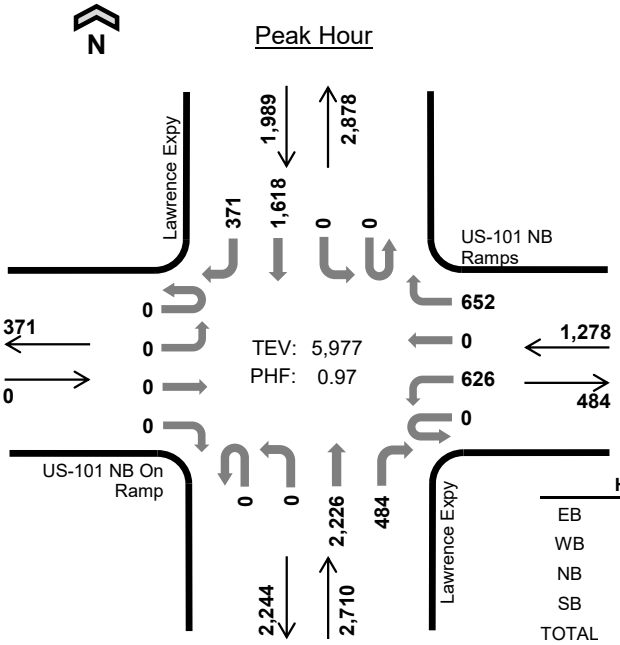
Peak-hour	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Total
7:15 - 8:15 AM	316	1938	103	90	1083	12	92	58	345	361	142	45	4585	4585
7:20 - 8:20 AM	304	2061	104	88	1066	11	96	57	347	367	143	47	4691	4691
7:25 - 8:25 AM	312	2066	99	84	1006	11	102	58	356	368	144	50	4656	4656
7:30 - 8:30 AM	312	2147	99	83	1037	11	107	57	355	375	135	49	4767	4767
7:35 - 8:35 AM	318	2232	94	82	1048	11	109	58	344	380	128	53	4857	4857
7:40 - 8:40 AM	317	2251	86	77	1065	9	107	53	332	380	121	55	4853	4853
7:45 - 8:45 AM	300	2275	76	77	1099	9	114	48	331	371	115	60	4875	4875
7:50 - 8:50 AM	278	2319	71	68	1089	12	112	44	300	363	100	61	4817	4817
7:55 - 8:55 AM	259	2354	71	58	1099	12	101	37	266	337	80	65	4739	4739
8:00 - 9:00 AM	241	2306	57	57	1127	10	97	36	255	323	75	62	4646	4646

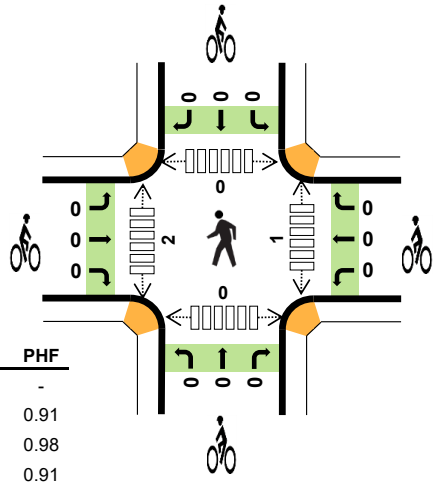
Int Node	Location NB/SB	EB/WB	Date	Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total
61	Lawrence Ex	Lakehaven Dr	5/17/2018	4:20	30	103	9	8	159	2	3	6	15	14	7	1	357
61	Lawrence Ex	Lakehaven Dr		4:25	24	66	4	10	130	1	5	3	15	27	6	3	294
				4:30	39	96	13	14	165	2	3	2	19	14	4	1	372
				4:35	34	118	7	16	151	4	1	3	11	7	6		358
				4:40	33	118	19	7	111	1	8	3	11	25	5	3	344
				4:45	21	72	6	15	169	2	7	5	15	14	10	7	343
				4:50	35	93	15	19	195	1	4	8	21	23	6	3	423
				4:55	36	143	18	15	152	2	3	4	14	6	5		398
				5:00	40	119	12	11	116	3	11	3	23	18	5	3	364
				5:05	24	87	8	18	154	6	5	11	11	24	13	2	363
				5:10	46	115	11	9	149	1	4	2	15	19	7	4	382
				5:15	45	123	15	10	148			10	18	11	4	4	388
				5:20	51	119	15	10	108	1	7	5	21	22	8	3	370
				5:25	38	110	16	19	128	5	6	10	16	23	8	5	384
				5:30	19	79	8	21	236	3	12	5	20	19	2	1	425
				5:35	53	125	19	10	142	1	3	5	23	15	2	3	401
				5:40	67	114	7	10	93		4	2	10	12	7	4	330
				5:45	31	105	10	21	168	2	13	9	17	8	4	1	389
				5:50	42	96	9	14	147	2	8	3	15	20	11	2	369
				5:55	39	67	7	25	176	3	2	3	15	12	3	3	355

Peak-hour	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	Total
4:20 - 5:20 PM	407	1253	137	152	1799	25	54	60	188	202	78	31	4386	4386
4:25 - 5:25 PM	428	1269	143	154	1748	24	58	59	194	210	79	33	4399	4399
4:30 - 5:30 PM	442	1313	155	163	1746	28	59	66	195	206	81	35	4489	4489
4:35 - 5:35 PM	422	1296	150	170	1817	29	68	69	196	211	79	35	4542	4542
4:40 - 5:40 PM	441	1303	162	164	1808	26	70	71	208	219	75	38	4585	4585
4:45 - 5:45 PM	475	1299	150	167	1790	25	66	70	207	206	77	39	4571	4571
4:50 - 5:50 PM	485	1332	154	173	1789	25	72	74	209	200	71	33	4617	4617
4:55 - 5:55 PM	492	1335	148	168	1741	26	76	69	203	197	76	32	4563	4563
5:00 - 6:00 PM	495	1259	137	178	1765	27	75	68	204	203	74	35	4520	4520

Lawrence Expy
US-101 NB Ramps

Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	-	-
WB	1.6%	0.91
NB	2.1%	0.98
SB	3.7%	0.91
TOTAL	2.5%	0.97

Two-Hour Count Summaries

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	103	0	110	0	0	328	73	0	0	334	87	1,035	0
7:15 AM	0	0	0	0	0	117	0	119	0	0	403	129	0	0	362	123	1,253	0
7:30 AM	0	0	0	0	0	128	0	139	0	0	470	63	0	0	394	137	1,331	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**173**	**0**	**180**	**0**	**0**	**564**	**130**	**0**	**0**	**366**	**124**	**1,537**	5,156
8:00 AM	**0**	**0**	**0**	**0**	**0**	**145**	**0**	**137**	**0**	**0**	**575**	**94**	**0**	**0**	**430**	**114**	**1,495**	5,616
8:15 AM	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**167**	**0**	**0**	**526**	**142**	**0**	**0**	**405**	**69**	**1,464**	5,827
8:30 AM	**0**	**0**	**0**	**0**	**0**	**153**	**0**	**168**	**0**	**0**	**561**	**118**	**0**	**0**	**417**	**64**	**1,481**	**5,977**
8:45 AM	0	0	0	0	0	172	0	136	0	0	526	111	0	0	422	81	1,448	5,888
Count Total	0	0	0	0	0	1,146	0	1,156	0	0	3,953	860	0	0	3,130	799	11,044	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**626**	**0**	**652**	**0**	**0**	**2,226**	**484**	**0**	**0**	**1,618**	**371**	**5,977**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**9**	**0**	**0**	**45**	**12**	**0**	**0**	**71**	**3**	**152**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**2%**	**-**	**1%**	**-**	**-**	**2%**	**2%**	**-**	**-**	**4%**	**1%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	8	11	21	*40*	0	0	0	0	*0*	1	1	0	0	*2*
7:15 AM	0	6	12	16	*34*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	7	11	27	*45*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**0**	**5**	**15**	**16**	***36***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:00 AM	**0**	**3**	**13**	**16**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**6**	**14**	**18**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**0**	**7**	**15**	**24**	***46***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	***2***
8:45 AM	0	10	14	12	*36*	0	0	0	1	*1*	0	0	0	0	*0*
Count Total	0	52	105	150	*307*	0	0	0	1	*1*	2	4	0	0	*6*
Peak Hour	**0**	**21**	**57**	**74**	***152***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**0**	***3***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	4	0	4	0	0	10	1	0	0	21	0	40	0
7:15 AM	0	0	0	0	0	3	0	3	0	0	10	2	0	0	15	1	34	0
7:30 AM	0	0	0	0	0	6	0	1	0	0	9	2	0	0	22	5	45	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**14**	**1**	**0**	**0**	**16**	**0**	**36**	155
8:00 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**9**	**4**	**0**	**0**	**15**	**1**	**32**	147
8:15 AM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**11**	**3**	**0**	**0**	**17**	**1**	**38**	151
8:30 AM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**11**	**4**	**0**	**0**	**23**	**1**	**46**	**152**
8:45 AM	0	0	0	0	0	5	0	5	0	0	12	2	0	0	11	1	36	152
Count Total	0	0	0	0	0	30	0	22	0	0	86	19	0	0	140	10	307	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**9**	**0**	**0**	**45**	**12**	**0**	**0**	**71**	**3**	**152**	**0**

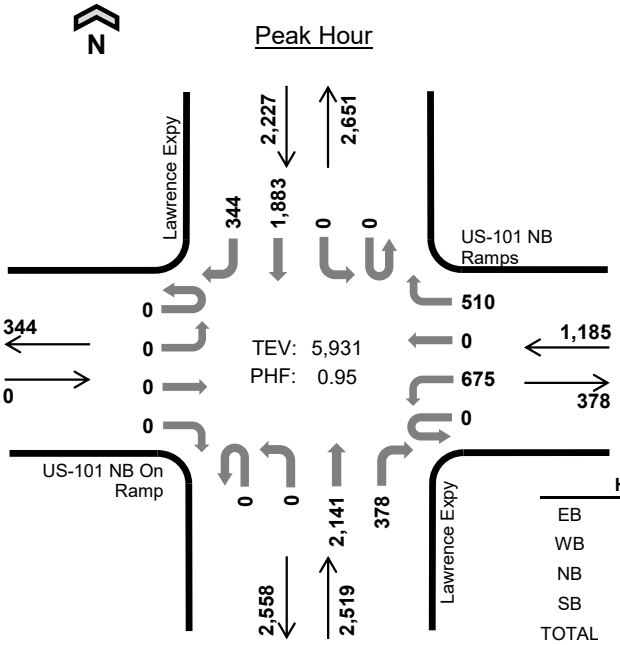
Two-Hour Count Summaries - Bikes

Interval Start	US-101 NB On Ramp			US-101 NB Ramps			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

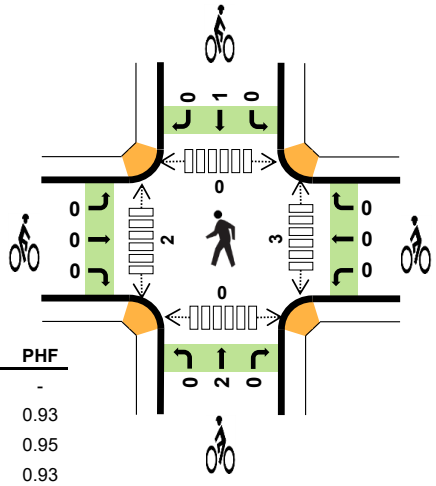
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 NB Ramps

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	-	-
WB	1.4%	0.93
NB	1.2%	0.95
SB	0.9%	0.93
TOTAL	1.1%	0.95



Two-Hour Count Summaries

Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	143	0	97	0	0	333	100	0	0	404	65	1,142	0
4:15 PM	0	0	0	0	0	151	0	82	0	0	423	79	0	0	510	74	1,319	0
4:30 PM	0	0	0	0	0	126	0	119	0	0	453	90	0	0	487	58	1,333	0
4:45 PM	0	0	0	0	0	126	0	96	0	0	502	79	0	0	468	65	1,336	5,130
5:00 PM	**0**	**0**	**0**	**0**	**0**	**171**	**0**	**148**	**0**	**0**	**528**	**102**	**0**	**0**	**490**	**83**	**1,522**	5,510
5:15 PM	**0**	**0**	**0**	**0**	**0**	**173**	**0**	**131**	**0**	**0**	**549**	**112**	**0**	**0**	**510**	**88**	**1,563**	5,754
5:30 PM	**0**	**0**	**0**	**0**	**0**	**154**	**0**	**114**	**0**	**0**	**554**	**70**	**0**	**0**	**465**	**91**	**1,448**	5,869
5:45 PM	**0**	**0**	**0**	**0**	**0**	**177**	**0**	**117**	**0**	**0**	**510**	**94**	**0**	**0**	**418**	**82**	**1,398**	**5,931**
Count Total	0	0	0	0	0	1,221	0	904	0	0	3,852	726	0	0	3,752	606	11,061	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**675**	**0**	**510**	**0**	**0**	**2,141**	**378**	**0**	**0**	**1,883**	**344**	**5,931**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**2**	**0**	**0**	**28**	**3**	**0**	**0**	**17**	**2**	**66**	**0**
Peak Hour HV%	-	-	-	-	-	**2%**	-	**0%**	-	-	**1%**	**1%**	-	-	**1%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	5	12	9	*26*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	8	12	5	*25*	0	0	0	0	*0*	1	0	0	0	*1*
4:30 PM	0	9	15	1	*25*	0	0	0	0	*0*	2	0	0	0	*2*
4:45 PM	0	5	5	2	*12*	0	0	1	0	*1*	1	0	0	0	*1*
5:00 PM	**0**	**7**	**11**	**6**	***24***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**4**	**15**	**5**	***24***	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**0**	**0**	*1*
5:30 PM	**0**	**2**	**1**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**0**	*3*
5:45 PM	**0**	**3**	**4**	**4**	***11***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	0	43	75	36	*154*	0	0	3	1	*4*	7	2	0	0	*9*
Peak Hour	**0**	**16**	**31**	**19**	***66***	**0**	**0**	**2**	**1**	***3***	**3**	**2**	**0**	**0**	***5***

Two-Hour Count Summaries - Heavy Vehicles

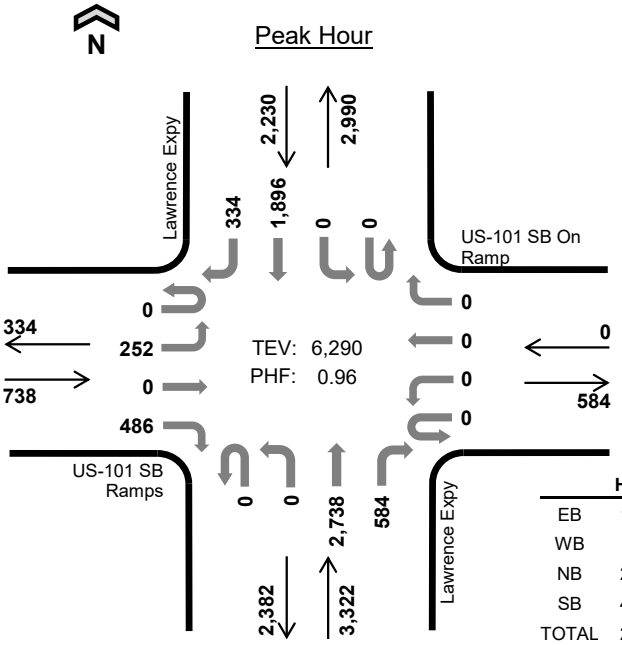
Interval Start	US-101 NB On Ramp				US-101 NB Ramps				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	3	0	2	0	0	9	3	0	0	8	1	26	0
4:15 PM	0	0	0	0	0	7	0	1	0	0	12	0	0	0	3	2	25	0
4:30 PM	0	0	0	0	0	8	0	1	0	0	13	2	0	0	1	0	25	0
4:45 PM	0	0	0	0	0	4	0	1	0	0	4	1	0	0	1	1	12	88
5:00 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**10**	**1**	**0**	**0**	**6**	**0**	**24**	86
5:15 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**5**	**0**	**24**	85
5:30 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**1**	**7**	67
5:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**3**	**1**	**0**	**0**	**3**	**1**	**11**	**66**
Count Total	0	0	0	0	0	36	0	7	0	0	66	9	0	0	30	6	154	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**2**	**0**	**0**	**28**	**3**	**0**	**0**	**17**	**2**	**66**	**0**

Two-Hour Count Summaries - Bikes

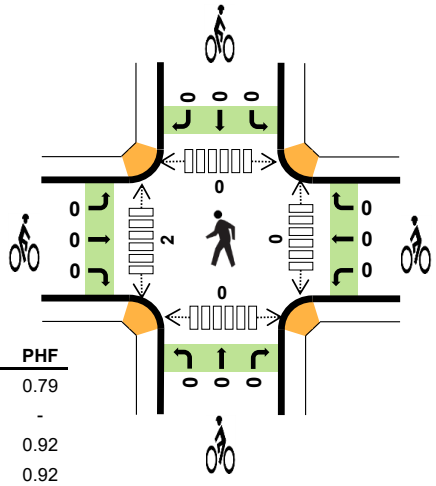
Interval Start	US-101 NB On Ramp			US-101 NB Ramps			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**
Count Total	0	0	0	0	0	0	0	3	0	0	1	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 SB Ramps



Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	1.1%	0.79
WB	-	-
NB	2.1%	0.92
SB	4.1%	0.92
TOTAL	2.7%	0.96

Two-Hour Count Summaries

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	28	0	93	0	0	0	0	0	0	364	69	0	0	355	60	969	0
7:15 AM	0	42	0	109	0	0	0	0	0	0	520	127	0	0	405	71	1,274	0
7:30 AM	0	68	0	103	0	0	0	0	0	0	515	137	0	0	428	97	1,348	0
7:45 AM	**0**	**116**	**0**	**117**	**0**	**0**	**0**	**0**	**0**	**0**	**668**	**127**	**0**	**0**	**448**	**89**	**1,565**	5,156
8:00 AM	**0**	**60**	**0**	**108**	**0**	**0**	**0**	**0**	**0**	**0**	**652**	**139**	**0**	**0**	**518**	**90**	**1,567**	5,754
8:15 AM	**0**	**34**	**0**	**150**	**0**	**0**	**0**	**0**	**0**	**0**	**684**	**150**	**0**	**0**	**427**	**73**	**1,518**	5,998
8:30 AM	**0**	**42**	**0**	**111**	**0**	**0**	**0**	**0**	**0**	**0**	**734**	**168**	**0**	**0**	**503**	**82**	**1,640**	**6,290**
8:45 AM	0	57	0	130	0	0	0	0	0	0	601	146	0	0	501	78	1,513	6,238
Count Total	0	447	0	921	0	0	0	0	0	0	4,738	1,063	0	0	3,585	640	11,394	0
Peak Hour All	**0**	**252**	**0**	**486**	**0**	**0**	**0**	**0**	**0**	**0**	**2,738**	**584**	**0**	**0**	**1,896**	**334**	**6,290**	**0**
Peak Hour HV	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**16**	**0**	**0**	**77**	**15**	**169**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**3%**	**-**	**-**	**4%**	**4%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	0	12	25	*41*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	7	0	13	17	*37*	0	0	0	0	*0*	0	1	0	0	*1*
7:30 AM	2	0	15	23	*40*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**4**	**0**	**16**	**24**	***44***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:00 AM	**2**	**0**	**14**	**21**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**0**	**19**	**18**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**1**	**0**	**20**	**29**	***50***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
8:45 AM	4	0	19	29	*52*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	25	0	128	186	*339*	1	0	0	0	*1*	0	4	1	0	*5*
Peak Hour	**8**	**0**	**69**	**92**	***169***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	2	0	0	0	0	0	0	10	2	0	0	24	1	41	0
7:15 AM	0	2	0	5	0	0	0	0	0	0	8	5	0	0	15	2	37	0
7:30 AM	0	0	0	2	0	0	0	0	0	0	11	4	0	0	18	5	40	0
7:45 AM	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**2**	**0**	**0**	**21**	**3**	**44**	162
8:00 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**3**	**0**	**0**	**16**	**5**	**37**	158
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**5**	**0**	**0**	**16**	**2**	**38**	159
8:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**6**	**0**	**0**	**24**	**5**	**50**	**169**
8:45 AM	0	1	0	3	0	0	0	0	0	0	10	9	0	0	23	6	52	177
Count Total	0	5	0	20	0	0	0	0	0	0	92	36	0	0	157	29	339	0
Peak Hour	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**16**	**0**	**0**	**77**	**15**	**169**	**0**

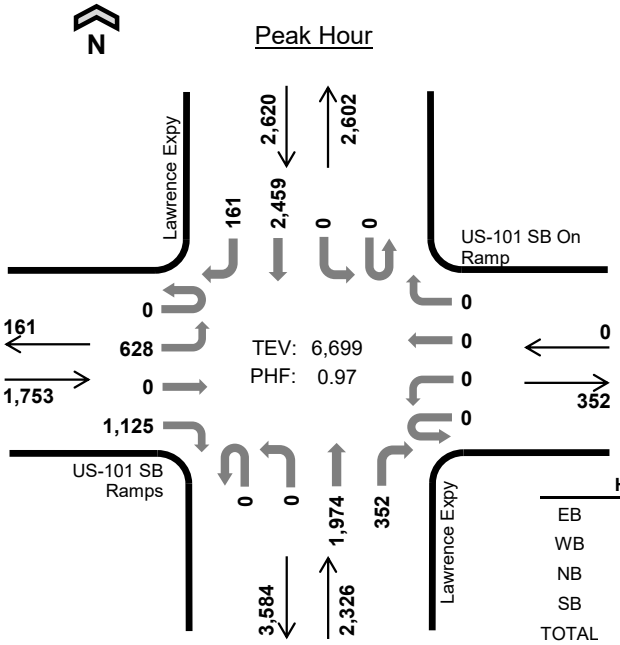
Two-Hour Count Summaries - Bikes

Interval Start	US-101 SB Ramps			US-101 SB On Ramp			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

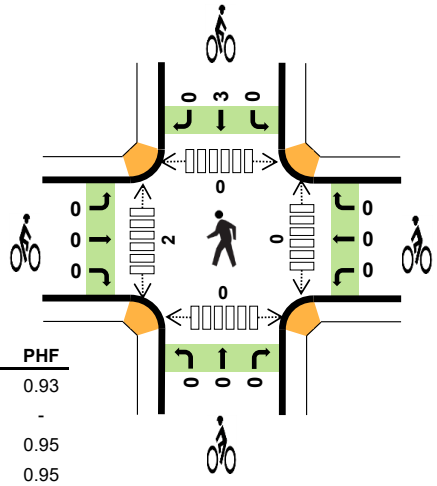
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
US-101 SB Ramps

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.9%	0.93
WB	-	-
NB	1.2%	0.95
SB	1.1%	0.95
TOTAL	1.1%	0.97



Two-Hour Count Summaries

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	178	0	253	0	0	0	0	0	0	330	69	0	0	510	32	1,372	0
4:15 PM	0	109	0	243	0	0	0	0	0	0	418	77	0	0	544	38	1,429	0
4:30 PM	0	158	0	249	0	0	0	0	0	0	405	88	0	0	590	45	1,535	0
4:45 PM	0	132	0	200	0	0	0	0	0	0	442	93	0	0	586	31	1,484	5,820
5:00 PM	**0**	**172**	**0**	**233**	**0**	**0**	**0**	**0**	**0**	**0**	**478**	**89**	**0**	**0**	**640**	**52**	**1,664**	6,112
5:15 PM	**0**	**157**	**0**	**256**	**0**	**0**	**0**	**0**	**0**	**0**	**533**	**80**	**0**	**0**	**606**	**34**	**1,666**	6,349
5:30 PM	**0**	**145**	**0**	**324**	**0**	**0**	**0**	**0**	**0**	**0**	**498**	**94**	**0**	**0**	**617**	**41**	**1,719**	6,533
5:45 PM	**0**	**154**	**0**	**312**	**0**	**0**	**0**	**0**	**0**	**0**	**465**	**89**	**0**	**0**	**596**	**34**	**1,650**	**6,699**
Count Total	0	1,205	0	2,070	0	0	0	0	0	0	3,569	679	0	0	4,689	307	12,519	0
Peak Hour All	**0**	**628**	**0**	**1,125**	**0**	**0**	**0**	**0**	**0**	**0**	**1,974**	**352**	**0**	**0**	**2,459**	**161**	**6,699**	**0**
Peak Hour HV	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**25**	**4**	**73**	**0**
Peak Hour HV%	**-**	**1%**	**-**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0%**	**-**	**-**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	11	10	*24*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	4	0	7	9	*20*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	5	0	9	10	*24*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	3	0	5	6	*14*	0	0	0	0	*0*	0	1	0	0	*1*
5:00 PM	**3**	**0**	**8**	**10**	***21***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**6**	**0**	**12**	**8**	***26***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	*1*
5:30 PM	**3**	**0**	**6**	**6**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**3**	**0**	**3**	**5**	***11***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	30	0	61	64	*155*	0	0	0	3	*3*	0	3	0	0	*3*
Peak Hour	**15**	**0**	**29**	**29**	***73***	**0**	**0**	**0**	**3**	***3***	**0**	**2**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US-101 SB Ramps				US-101 SB On Ramp				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	3	0	0	0	0	0	0	9	2	0	0	7	3	24	0
4:15 PM	0	2	0	2	0	0	0	0	0	0	7	0	0	0	9	0	20	0
4:30 PM	0	3	0	2	0	0	0	0	0	0	9	0	0	0	9	1	24	0
4:45 PM	0	1	0	2	0	0	0	0	0	0	4	1	0	0	6	0	14	82
5:00 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**9**	**1**	**21**	79
5:15 PM	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**7**	**1**	**26**	85
5:30 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**1**	**15**	76
5:45 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**1**	**11**	**73**
Count Total	0	10	0	20	0	0	0	0	0	0	58	3	0	0	56	8	155	0
Peak Hour	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**25**	**4**	**73**	**0**

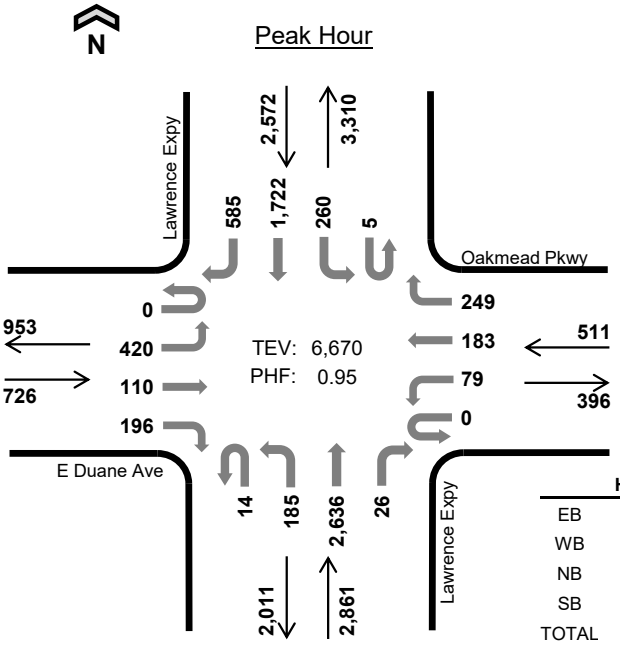
Two-Hour Count Summaries - Bikes

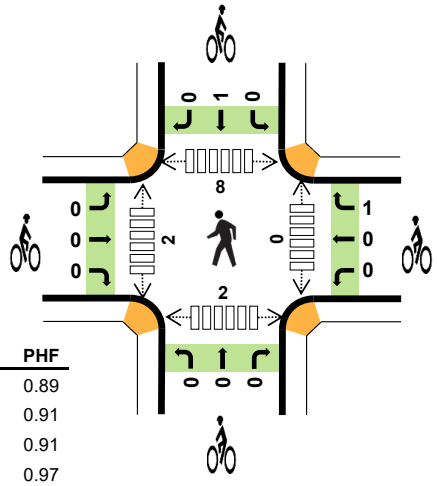
Interval Start	US-101 SB Ramps			US-101 SB On Ramp			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**
Count Total	0	0	0	0	0	0	0	0	0	0	3	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
E Duane Ave

Date: 05-23-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	1.4%	0.89
WB	0.8%	0.91
NB	2.4%	0.91
SB	3.3%	0.97
TOTAL	2.5%	0.95

Two-Hour Count Summaries

Interval Start	E Duane Ave Eastbound				Oakmead Pkwy Westbound				Lawrence Expy Northbound				Lawrence Expy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	24	12	10	1	4	11	29	2	27	445	5	1	60	262	82	975	0
7:15 AM	0	49	14	32	0	12	13	40	3	28	544	10	2	44	372	92	1,255	0
7:30 AM	0	64	13	36	0	5	30	43	1	16	594	16	1	41	399	84	1,343	0
7:45 AM	0	79	17	42	0	10	41	38	1	42	703	5	0	51	406	149	1,584	5,157
8:00 AM	**0**	**87**	**18**	**62**	**0**	**15**	**48**	**59**	**5**	**58**	**656**	**6**	**2**	**70**	**418**	**167**	**1,671**	5,853
8:15 AM	**0**	**124**	**34**	**45**	**0**	**16**	**56**	**52**	**3**	**45**	**641**	**3**	**0**	**68**	**368**	**161**	**1,616**	6,214
8:30 AM	**0**	**105**	**26**	**52**	**0**	**19**	**49**	**72**	**2**	**40**	**737**	**9**	**3**	**54**	**449**	**146**	**1,763**	6,634
8:45 AM	**0**	**104**	**32**	**37**	**0**	**29**	**30**	**66**	**4**	**42**	**602**	**8**	**0**	**68**	**487**	**111**	**1,620**	**6,670**
Count Total	0	636	166	316	1	110	278	399	21	298	4,922	62	9	456	3,161	992	11,827	0
Peak Hour All	**0**	**420**	**110**	**196**	**0**	**79**	**183**	**249**	**14**	**185**	**2,636**	**26**	**5**	**260**	**1,722**	**585**	**6,670**	**0**
Peak Hour HV	**0**	**9**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**0**	**67**	**1**	**0**	**9**	**59**	**18**	**168**	**0**
Peak Hour HV%	**-**	**2%**	**0%**	**1%**	**-**	**1%**	**0%**	**1%**	**0%**	**0%**	**3%**	**4%**	**0%**	**3%**	**3%**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	2	13	24	*40*	0	0	0	1	*1*	0	1	1	1	*3*
7:15 AM	2	1	12	22	*37*	0	0	1	0	*1*	0	1	3	0	*4*
7:30 AM	3	2	10	23	*38*	0	0	0	0	*0*	0	1	3	2	*6*
7:45 AM	3	2	11	22	*38*	0	0	0	1	*1*	0	1	3	1	*5*
8:00 AM	**3**	**0**	**14**	**18**	***35***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**0**	*3*
8:15 AM	**4**	**0**	**14**	**20**	***38***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	*3*
8:30 AM	**0**	**1**	**21**	**19**	***41***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**2**	**0**	*2*
8:45 AM	**3**	**3**	**19**	**29**	***54***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**1**	**2**	***4***
Count Total	19	11	114	177	*321*	0	1	1	3	*5*	0	6	18	6	*30*
Peak Hour	**10**	**4**	**68**	**86**	***168***	**0**	**1**	**0**	**1**	***2***	**0**	**2**	**8**	**2**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Duane Ave				Oakmead Pkwy				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	1	1	0	0	13	0	0	0	21	3	40	0
7:15 AM	0	2	0	0	0	0	0	1	1	0	11	0	0	1	19	2	37	0
7:30 AM	0	1	2	0	0	1	0	1	0	0	10	0	0	1	17	5	38	0
7:45 AM	0	3	0	0	0	0	0	2	0	0	11	0	0	1	18	3	38	153
8:00 AM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**1**	**11**	**6**	**35**	148
8:15 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**4**	**11**	**5**	**38**	149
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**21**	**0**	**0**	**2**	**15**	**2**	**41**	152
8:45 AM	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**18**	**1**	**0**	**2**	**22**	**5**	**54**	**168**
Count Total	0	16	2	1	0	2	1	8	1	0	112	1	0	12	134	31	321	0
Peak Hour	**0**	**9**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**0**	**67**	**1**	**0**	**9**	**59**	**18**	**168**	**0**

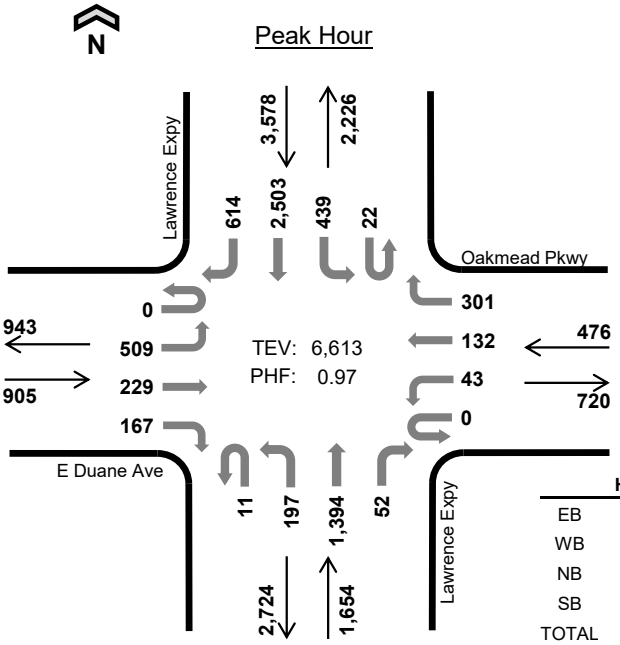
Two-Hour Count Summaries - Bikes

Interval Start	E Duane Ave			Oakmead Pkwy			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**
Count Total	0	0	0	0	0	1	0	1	0	0	3	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

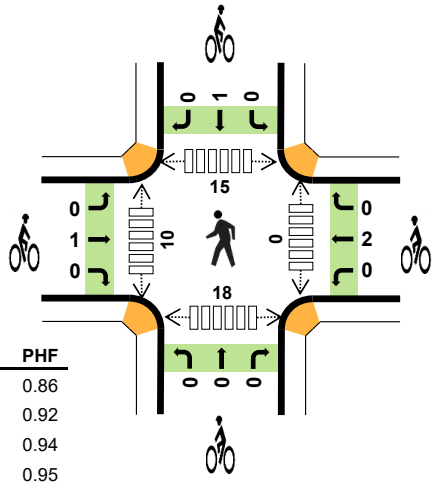
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lawrence Expy
E Duane Ave

Date: 05-23-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.0%	0.86
WB	0.6%	0.92
NB	1.3%	0.94
SB	1.0%	0.95
TOTAL	1.1%	0.97



Two-Hour Count Summaries

Interval Start		E Duane Ave Eastbound				Oakmead Pkwy Westbound				Lawrence Expy Northbound				Lawrence Expy Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	82	36	46	0	12	13	67	3	43	272	9	2	80	701	79	1,445	0
4:15 PM		0	90	40	47	1	9	14	54	1	40	312	5	1	75	716	95	1,500	0
4:30 PM		0	91	39	45	0	17	10	58	4	38	355	10	4	65	758	111	1,605	0
4:45 PM		0	107	45	43	0	13	23	43	7	51	344	13	1	69	668	105	1,532	6,082
5:00 PM		**0**	**148**	**68**	**48**	**0**	**8**	**31**	**91**	**8**	**48**	**302**	**6**	**0**	**90**	**629**	**131**	**1,608**	6,245
5:15 PM		**0**	**134**	**60**	**45**	**0**	**15**	**32**	**76**	**2**	**46**	**357**	**19**	**5**	**94**	**705**	**116**	**1,706**	6,451
5:30 PM		**0**	**111**	**46**	**44**	**0**	**11**	**28**	**64**	**0**	**52**	**376**	**14**	**11**	**124**	**626**	**178**	**1,685**	6,531
5:45 PM		**0**	**116**	**55**	**30**	**0**	**9**	**41**	**70**	**1**	**51**	**359**	**13**	**6**	**131**	**543**	**189**	**1,614**	**6,613**
Count Total		0	879	389	348	1	94	192	523	26	369	2,677	89	30	728	5,346	1,004	12,695	0
Peak Hour	**All**	**0**	**509**	**229**	**167**	**0**	**43**	**132**	**301**	**11**	**197**	**1,394**	**52**	**22**	**439**	**2,503**	**614**	**6,613**	**0**
	HV	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**22**	**0**	**0**	**3**	**23**	**11**	**71**	**0**
	HV%	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**0%**	**0%**	**2%**	**0%**	**0%**	**1%**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	9	7	*21*	0	0	0	0	*0*	0	0	7	2	*9*
4:15 PM	2	1	4	14	*21*	0	0	0	0	*0*	0	3	4	0	*7*
4:30 PM	5	2	4	10	*21*	0	0	0	0	*0*	0	3	1	9	*13*
4:45 PM	1	0	5	7	*13*	0	1	0	0	*1*	0	0	2	1	*3*
5:00 PM	**3**	**1**	**7**	**10**	***21***	**1**	**0**	**0**	**1**	***2***	**0**	**1**	**2**	**1**	*4*
5:15 PM	**3**	**1**	**7**	**12**	***23***	**0**	**1**	**0**	**0**	***1***	**0**	**5**	**6**	**1**	*12*
5:30 PM	**2**	**0**	**5**	**9**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**5**	**5**	*12*
5:45 PM	**1**	**1**	**3**	**6**	***11***	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**2**	**11**	***15***
Count Total	20	8	44	75	*147*	1	3	0	1	*5*	0	16	29	30	*75*
Peak Hour	**9**	**3**	**22**	**37**	***71***	**1**	**2**	**0**	**1**	***4***	**0**	**10**	**15**	**18**	***43***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Duane Ave				Oakmead Pkwy				Lawrence Expy				Lawrence Expy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	3	0	0	0	0	0	2	0	0	9	0	0	2	4	1	21	0
4:15 PM	0	2	0	0	0	0	0	1	0	0	4	0	0	2	10	2	21	0
4:30 PM	0	5	0	0	0	0	0	2	0	0	4	0	0	1	6	3	21	0
4:45 PM	0	1	0	0	0	0	0	0	0	2	3	0	0	0	5	2	13	76
5:00 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**9**	**1**	**21**	76
5:15 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**1**	**6**	**5**	**23**	78
5:30 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**5**	**2**	**16**	73
5:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**3**	**11**	**71**
Count Total	0	19	1	0	0	0	0	8	0	2	42	0	0	8	48	19	147	0
Peak Hour	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**22**	**0**	**0**	**3**	**23**	**11**	**71**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	E Duane Ave			Oakmead Pkwy			Lawrence Expy			Lawrence Expy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	1
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	3
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
Count Total	0	1	0	0	2	1	0	0	0	0	1	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

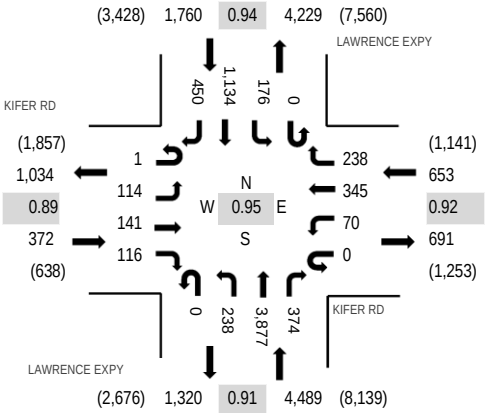
Lawrence/Arques

	Lawrence SB			Arques WB			Lawrence NB			Arques EB				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	Total	
7:00	9	302	78	16	37	10	29	419	17	20	16	27	980	4/4/2017
7:15	23	375	55	17	42	22	56	515	34	20	12	19	1190	
7:30	21	347	44	38	52	21	54	649	52	42	26	24	1370	
7:45	28	347	75	28	98	30	55	727	68	34	29	38	1557	
8:00	24	371	74	35	86	11	94	746	88	31	31	41	1632	
8:15	22	328	75	25	85	17	86	709	95	34	45	40	1561	
8:30	17	318	90	32	77	15	92	796	64	36	35	38	1610	
8:45	34	277	84	33	84	16	82	756	54	36	44	34	1534	
7:00-8:00	81	1371	252	99	229	83	194	2310	171	116	83	108	5097	
7:15-8:15	96	1440	248	118	278	84	259	2637	242	127	98	122	5749	
7:30-8:30	95	1393	268	126	321	79	289	2831	303	141	131	143	6120	
7:45-8:45	91	1364	314	120	346	73	327	2978	315	135	140	157	6360	
8:00-9:00	97	1294	323	125	332	59	354	3007	301	137	155	153	6337	

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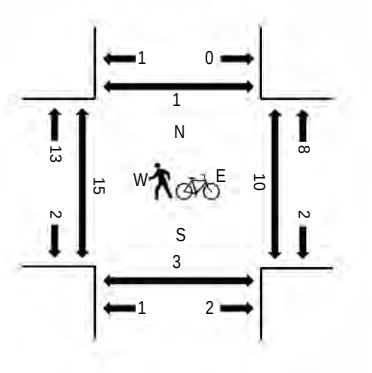
Location: 1 LAWRENCE EXPY & KIFER RD AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	10	14	38	0	11	43	32	0	44	531	80	1	34	278	82	1,198	6,072	1	0	0	0
7:15 AM	0	16	12	34	0	16	54	33	0	51	661	82	2	35	276	78	1,350	6,621	0	2	0	0
7:30 AM	0	26	17	23	0	18	85	47	0	44	937	108	2	33	284	92	1,716	7,059	3	1	0	0
7:45 AM	0	22	28	26	0	18	83	48	0	61	962	89	1	30	334	106	1,808	7,167	0	0	0	0
8:00 AM	1	21	29	29	0	24	77	46	0	69	879	91	0	56	319	106	1,747	7,274	5	5	0	0
8:15 AM	0	33	39	33	0	19	86	60	0	52	975	77	0	43	275	96	1,788		3	3	0	1
8:30 AM	0	28	36	26	0	21	88	68	0	51	946	112	0	33	292	123	1,824		0	1	0	0
8:45 AM	0	32	37	28	0	6	94	64	0	66	1,077	94	0	44	248	125	1,915		4	1	2	0

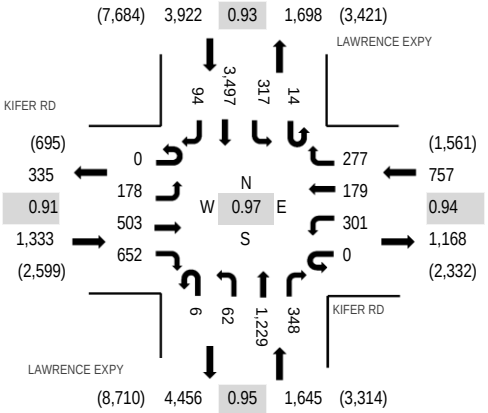
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	3	0	0	0	0	0	1	0	0	5	1	0	0	5	0	15
Lights	1	107	137	112	0	60	338	230	0	237	3,851	371	0	175	1,095	438	7,152
Mediums	0	4	4	4	0	10	7	7	0	1	21	2	0	1	34	12	107
Total	1	114	141	116	0	70	345	238	0	238	3,877	374	0	176	1,134	450	7,274

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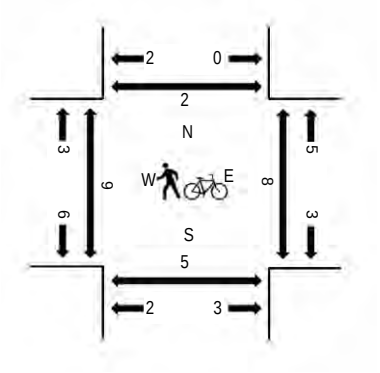
Location: 1 LAWRENCE EXPY & KIFER RD PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	37	162	185	0	67	38	74	2	16	289	97	0	69	782	30	1,848	7,572	3	1	2	0
4:15 PM	0	37	114	156	0	63	40	75	2	7	356	99	2	94	845	27	1,917	7,657	1	1	0	0
4:30 PM	0	48	130	161	0	74	28	68	1	13	300	90	5	87	935	28	1,968	7,650	1	0	2	1
4:45 PM	0	45	147	175	0	77	48	57	2	20	272	66	3	68	838	21	1,839	7,542	3	1	1	1
5:00 PM	0	48	112	160	0	87	63	77	1	22	301	93	4	68	879	18	1,933	7,586	1	2	0	0
5:15 PM	0	38	117	139	0	66	66	80	0	10	344	87	4	60	879	20	1,910		5	1	2	0
5:30 PM	0	38	110	133	0	71	48	82	1	11	297	102	2	74	857	34	1,860		4	4	0	0
5:45 PM	0	47	131	129	0	75	55	82	0	15	303	95	6	60	868	17	1,883		3	2	2	0

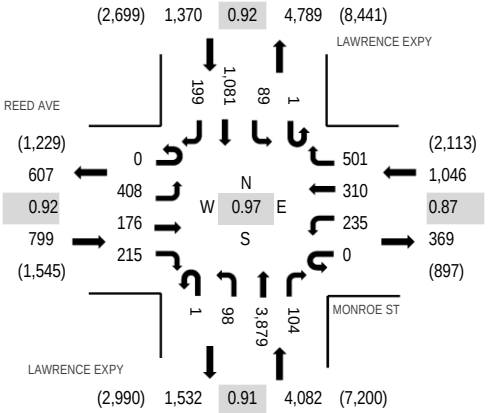
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	1	0	0	3	0	0	0	3	0	9
Lights	0	175	499	651	0	301	175	273	6	62	1,214	339	14	315	3,475	86	7,585
Mediums	0	2	3	1	0	0	4	3	0	0	12	9	0	2	19	8	63
Total	0	178	503	652	0	301	179	277	6	62	1,229	348	14	317	3,497	94	7,657

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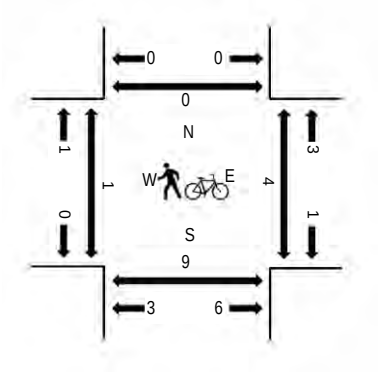
Location: 2 LAWRENCE EXPY & MONROE ST AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	REED AVE Eastbound				MONROE ST Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	52	76	39	0	33	54	106	1	28	510	39	1	47	175	41	1,202	6,260	1	0	7	0
7:15 AM	0	88	99	27	0	69	110	143	0	21	612	66	0	32	266	38	1,571	6,936	0	4	4	0
7:30 AM	0	85	34	44	0	83	82	116	0	43	854	22	0	26	329	37	1,755	7,193	0	1	1	0
7:45 AM	0	112	33	57	0	55	90	126	1	48	847	26	0	28	279	30	1,732	7,140	1	0	3	0
8:00 AM	0	111	44	65	0	53	82	106	1	31	988	26	0	25	302	44	1,878	7,297	0	0	1	0
8:15 AM	0	78	42	62	0	57	78	129	0	28	987	33	0	34	249	51	1,828		0	1	2	0
8:30 AM	0	130	50	44	0	67	71	152	0	19	829	19	1	14	259	47	1,702		0	3	2	0
8:45 AM	0	89	40	44	0	58	79	114	0	20	1,075	26	0	16	271	57	1,889		1	0	1	0

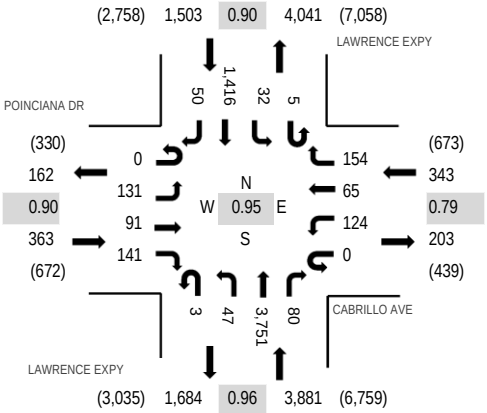
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	0	2	0	0	0	2	0	2	2	0	0	0	4	5	19
Lights	0	401	173	210	0	231	304	496	1	95	3,860	100	1	89	1,039	190	7,190
Mediums	0	5	3	3	0	4	6	3	0	1	17	4	0	0	38	4	88
Total	0	408	176	215	0	235	310	501	1	98	3,879	104	1	89	1,081	199	7,297

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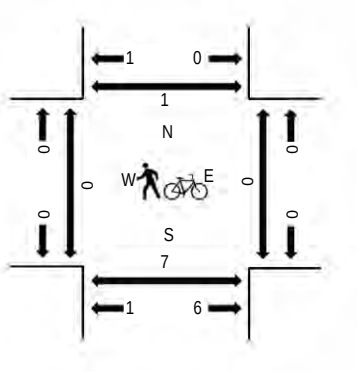
Location: 3 LAWRENCE EXPY & CABRILLO AVE AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	POINCIANA DR Eastbound				CABRILLO AVE Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	36	14	17	0	24	10	24	0	2	528	23	0	5	206	5	894	4,772	0	0	0	0
7:15 AM	0	30	25	21	0	45	20	22	1	3	671	37	0	14	307	20	1,216	5,477	0	0	0	0
7:30 AM	0	48	16	15	0	49	27	37	1	11	751	12	1	18	312	20	1,318	5,802	0	0	0	0
7:45 AM	0	42	24	21	0	28	19	25	3	7	802	26	0	22	301	24	1,344	5,960	0	0	4	0
8:00 AM	0	33	12	38	0	30	23	33	0	14	975	21	4	11	388	17	1,599	6,090	0	0	2	0
8:15 AM	0	40	26	35	0	33	13	38	0	14	971	23	0	9	329	10	1,541		0	0	3	0
8:30 AM	0	27	21	30	0	34	10	45	1	11	892	15	0	7	369	14	1,476		0	0	0	0
8:45 AM	0	31	32	38	0	27	19	38	2	8	913	21	1	5	330	9	1,474		0	0	1	1

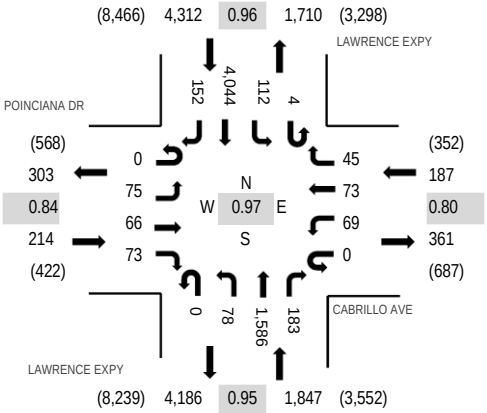
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	12
Lights	0	129	87	141	0	122	65	154	3	47	3,726	77	5	31	1,373	46	6,006
Mediums	0	2	4	0	0	2	0	0	0	0	21	3	0	1	35	4	72
Total	0	131	91	141	0	124	65	154	3	47	3,751	80	5	32	1,416	50	6,090

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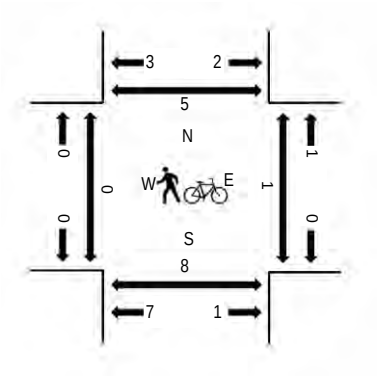
Location: 3 LAWRENCE EXPY & CABRILLO AVE PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	POINCIANA DR Eastbound				CABRILLO AVE Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	25	9	14	0	13	8	7	4	21	378	33	2	25	954	33	1,526	6,232	0	2	2	0
4:15 PM	0	24	11	13	0	16	10	17	3	23	396	42	1	24	944	32	1,556	6,311	0	0	0	0
4:30 PM	0	17	18	32	0	21	21	9	4	17	323	47	2	31	952	33	1,527	6,343	0	0	2	0
4:45 PM	0	16	13	16	0	17	14	12	0	20	356	38	3	35	1,050	33	1,623	6,485	1	0	0	0
5:00 PM	0	20	15	18	0	15	13	7	0	19	384	45	1	29	1,012	27	1,605	6,560	0	0	2	1
5:15 PM	0	18	19	23	0	20	26	13	0	25	379	45	2	28	952	38	1,588		0	0	2	0
5:30 PM	0	24	19	17	0	22	20	10	0	16	397	49	1	28	1,032	34	1,669		0	0	0	0
5:45 PM	0	13	13	15	0	12	14	15	0	18	426	44	0	27	1,048	53	1,698		0	0	3	2

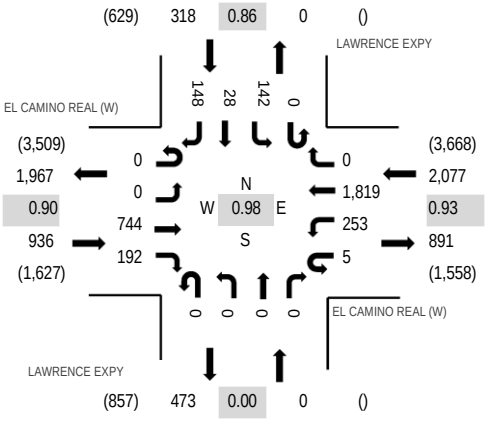
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	74	66	73	0	69	73	45	0	76	1,568	182	4	109	4,030	151	6,520
Mediums	0	1	0	0	0	0	0	0	0	2	18	1	0	3	14	1	40
Total	0	75	66	73	0	69	73	45	0	78	1,586	183	4	112	4,044	152	6,560

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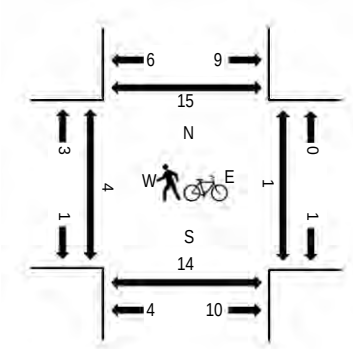
Location: 37 LAWRENCE EXPY & EL CAMINO REAL (W) AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL (W) Eastbound				EL CAMINO REAL (W) Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	110	25	0	37	215	0	0	0	0	0	0	11	5	32	435	2,647	0	0	1	1
7:15 AM	0	0	122	37	0	43	309	0	0	0	0	0	0	24	9	53	597	3,061	1	0	0	3
7:30 AM	0	0	166	38	0	63	411	0	0	0	0	0	0	39	13	50	780	3,268	0	0	3	1
7:45 AM	0	0	206	53	0	61	442	0	0	0	0	0	0	29	8	36	835	3,331	2	0	3	2
8:00 AM	0	0	174	51	1	61	476	0	0	0	0	0	0	38	11	37	849	3,277	0	0	4	5
8:15 AM	0	0	189	52	0	57	416	0	0	0	0	0	0	47	3	40	804		0	0	3	5
8:30 AM	0	0	175	36	4	74	485	0	0	0	0	0	0	28	6	35	843		1	1	4	1
8:45 AM	0	0	154	39	4	67	442	0	0	0	0	0	0	37	8	30	781		2	0	3	7

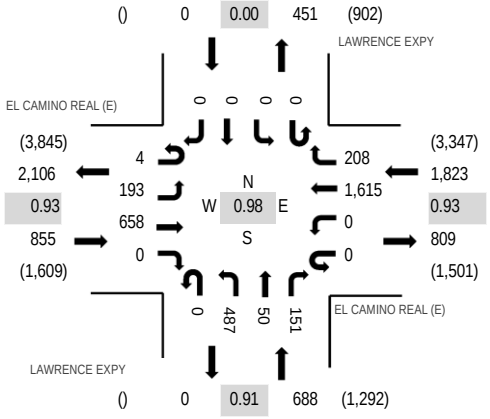
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	1	0	0	6	0	0	0	0	0	0	1	0	2	11
Lights	0	0	727	183	5	248	1,772	0	0	0	0	0	0	140	28	142	3,245
Mediums	0	0	16	8	0	5	41	0	0	0	0	0	0	1	0	4	75
Total	0	0	744	192	5	253	1,819	0	0	0	0	0	0	142	28	148	3,331

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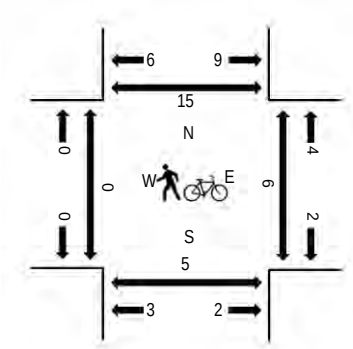
Location: 38 LAWRENCE EXPY & EL CAMINO REAL (E) AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL (E) Eastbound				EL CAMINO REAL (E) Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	52	103	0	0	0	238	54	0	67	14	16	0	0	0	0	544	2,962	0	0	3	1
7:15 AM	0	56	125	0	0	0	357	62	0	86	11	18	0	0	0	0	715	3,252	0	2	1	1
7:30 AM	0	75	149	0	0	0	404	56	0	111	13	34	0	0	0	0	842	3,366	0	1	1	1
7:45 AM	2	45	170	0	0	0	437	51	0	105	14	37	0	0	0	0	861	3,344	0	2	1	7
8:00 AM	0	38	191	0	0	0	389	52	0	125	10	29	0	0	0	0	834	3,286	0	0	1	3
8:15 AM	2	35	148	0	0	0	385	49	0	146	13	51	0	0	0	0	829		0	1	2	3
8:30 AM	0	34	166	0	0	0	381	44	0	143	11	41	0	0	0	0	820		0	2	2	4
8:45 AM	1	40	177	0	0	0	335	53	0	131	20	46	0	0	0	0	803		0	4	2	5

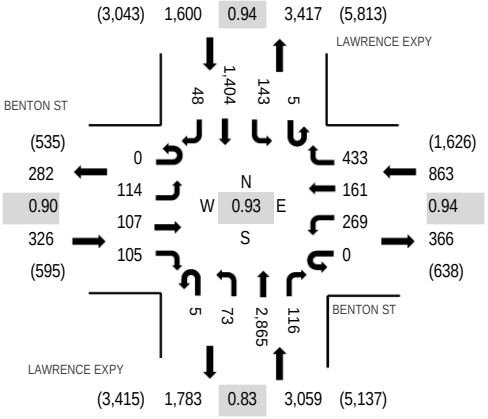
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	3	0	0	0	4	0	0	2	0	2	0	0	0	0	12
Lights	4	191	642	0	0	0	1,577	204	0	479	50	147	0	0	0	0	3,294
Mediums	0	1	13	0	0	0	34	4	0	6	0	2	0	0	0	0	60
Total	4	193	658	0	0	0	1,615	208	0	487	50	151	0	0	0	0	3,366

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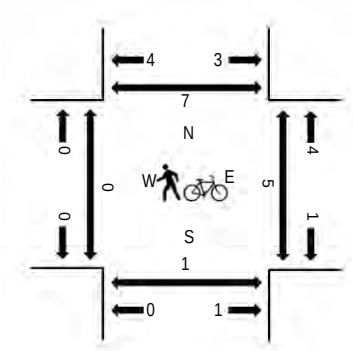
Location: 39 LAWRENCE EXPY & BENTON ST AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	BENTON ST Eastbound				BENTON ST Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	28	12	13	0	46	12	73	0	13	479	14	2	30	229	8	959	5,254	0	0	0	2
7:15 AM	0	39	20	26	0	65	22	96	2	15	614	27	0	24	277	28	1,255	5,835	0	0	0	1
7:30 AM	0	35	27	20	0	68	48	80	3	23	755	25	2	29	321	24	1,460	5,848	0	0	0	1
7:45 AM	0	22	30	21	0	67	30	115	0	14	925	27	1	36	289	3	1,580	5,666	0	4	0	0
8:00 AM	0	36	29	27	0	66	36	118	1	15	725	30	0	41	409	7	1,540	5,147	0	0	0	3
8:15 AM	0	21	21	37	0	68	47	120	1	21	460	34	2	37	385	14	1,268		0	0	0	1
8:30 AM	0	22	27	24	0	70	56	117	2	19	447	29	2	22	437	4	1,278		0	0	0	1
8:45 AM	0	20	20	18	0	72	53	81	3	18	373	23	3	24	348	5	1,061		1	0	0	1

Peak Rolling Hour Flow Rates

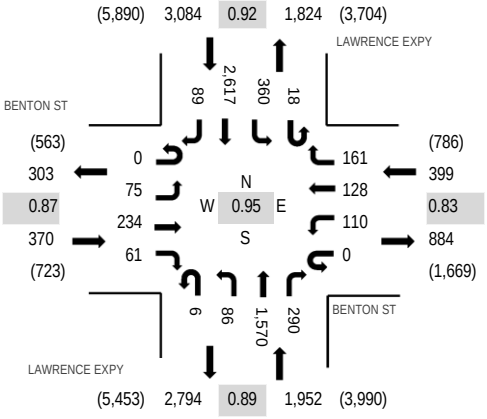
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	5	0	0	1	4	0	11
Lights	0	114	106	105	0	262	161	429	4	72	2,829	115	5	140	1,359	48	5,749
Mediums	0	0	1	0	0	7	0	3	1	1	31	1	0	2	41	0	88
Total	0	114	107	105	0	269	161	433	5	73	2,865	116	5	143	1,404	48	5,848

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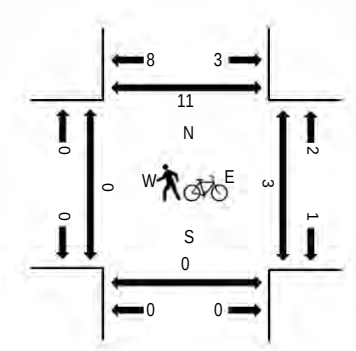
Location: 39 LAWRENCE EXPY & BENTON ST PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	BENTON ST Eastbound				BENTON ST Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	9	42	7	0	30	24	28	2	18	398	55	5	51	652	18	1,339	5,591	0	0	0	5
4:15 PM	0	8	25	8	0	21	17	33	1	22	385	70	2	71	784	15	1,462	5,787	1	2	0	6
4:30 PM	0	19	47	14	0	26	27	34	1	19	356	67	4	81	711	24	1,430	5,805	0	0	0	6
4:45 PM	0	23	51	12	0	28	42	43	1	24	361	69	3	74	612	17	1,360	5,752	0	1	0	2
5:00 PM	0	19	50	14	0	27	27	41	3	23	441	73	8	102	680	27	1,535	5,798	0	0	0	1
5:15 PM	0	14	86	21	0	29	32	43	1	20	412	81	3	103	614	21	1,480		0	2	0	0
5:30 PM	0	23	81	27	0	45	38	51	2	21	398	67	4	69	536	15	1,377		0	1	0	4
5:45 PM	0	24	81	18	0	35	32	33	0	26	471	102	8	71	491	14	1,406		0	0	0	2

Peak Rolling Hour Flow Rates

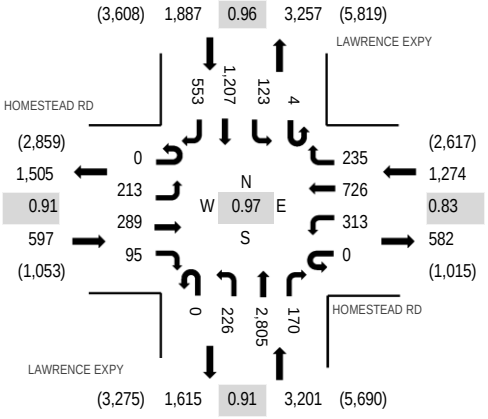
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3
Lights	0	75	233	61	0	110	128	159	6	86	1,550	288	18	358	2,606	89	5,767
Mediums	0	0	1	0	0	0	0	2	0	0	19	2	0	2	9	0	35
Total	0	75	234	61	0	110	128	161	6	86	1,570	290	18	360	2,617	89	5,805

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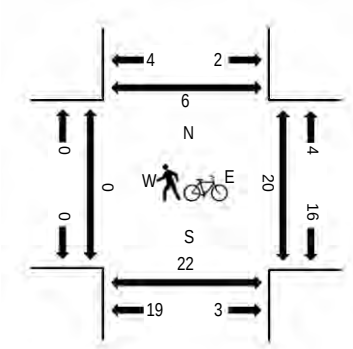
Location: 40 LAWRENCE EXPY & HOMESTEAD RD AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound				HOMESTEAD RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	28	20	15	0	70	121	53	0	38	432	33	0	14	244	67	1,135	6,009	0	1	1	0
7:15 AM	0	39	28	28	0	75	200	68	0	52	563	33	0	18	338	99	1,541	6,662	0	0	0	0
7:30 AM	0	62	55	43	0	95	231	100	0	62	540	44	2	20	329	127	1,710	6,753	0	1	4	1
7:45 AM	0	41	68	29	0	78	187	65	0	61	569	62	0	38	316	109	1,623	6,837	0	1	4	7
8:00 AM	0	58	61	22	0	81	176	55	0	45	754	41	2	42	312	139	1,788	6,959	0	3	2	0
8:15 AM	0	65	76	25	0	76	191	61	0	47	589	51	1	44	278	128	1,632		0	3	4	3
8:30 AM	0	43	89	27	0	86	205	70	0	57	698	37	0	20	320	142	1,794		0	5	6	2
8:45 AM	0	47	63	21	0	70	154	49	0	77	764	41	1	17	297	144	1,745		0	9	10	0

Peak Rolling Hour Flow Rates

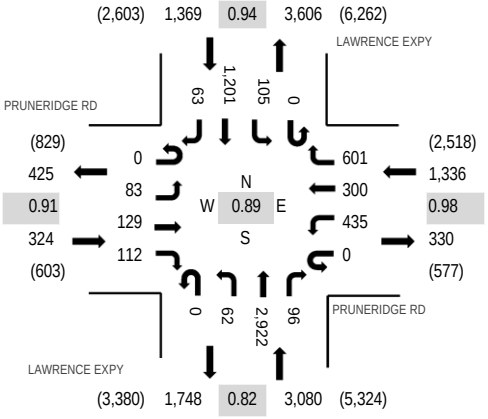
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	2	0	1	1	0	0	1	2	0	0	1	2	2	12
Lights	0	210	284	93	0	310	716	232	0	222	2,792	168	3	119	1,173	535	6,857
Mediums	0	3	5	0	0	2	9	3	0	3	11	2	1	3	32	16	90
Total	0	213	289	95	0	313	726	235	0	226	2,805	170	4	123	1,207	553	6,959

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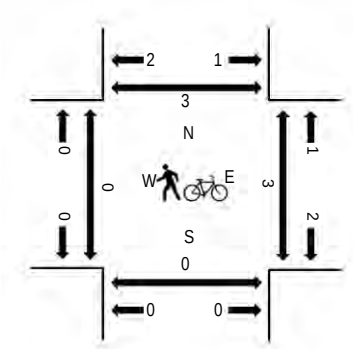
Location: 41 LAWRENCE EXPY & PRUNERIDGE RD AM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	PRUNERIDGE RD Eastbound				PRUNERIDGE RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	22	5	11	0	106	26	102	0	8	466	8	0	7	232	12	1,005	5,467	0	0	0	1
7:15 AM	0	17	18	43	0	127	75	124	2	18	518	30	1	16	253	12	1,254	5,916	0	0	0	0
7:30 AM	0	18	22	24	0	112	74	137	0	10	718	19	0	27	321	9	1,491	6,109	0	0	0	1
7:45 AM	0	28	17	20	0	135	50	158	0	14	908	22	0	28	329	8	1,717	5,941	0	0	0	1
8:00 AM	0	17	34	47	0	102	92	146	0	11	660	25	0	19	282	19	1,454	5,581	0	2	0	1
8:15 AM	0	20	56	21	0	86	84	160	0	27	636	30	0	31	269	27	1,447		0	1	0	0
8:30 AM	0	34	20	29	0	101	107	117	0	24	526	31	0	28	283	23	1,323		0	0	4	1
8:45 AM	0	32	18	30	0	94	57	146	2	15	551	45	0	21	319	27	1,357		0	0	0	1

Peak Rolling Hour Flow Rates

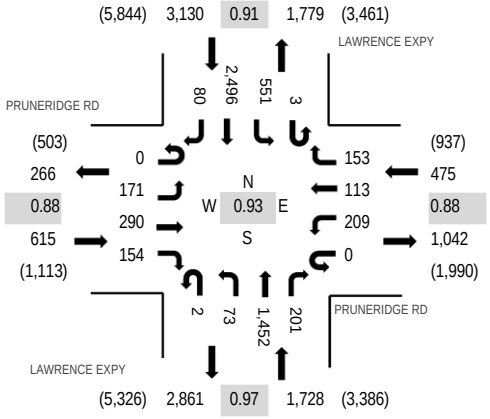
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	8
Lights	0	82	124	111	0	432	296	595	0	62	2,899	94	0	104	1,177	63	6,039
Mediums	0	1	5	1	0	3	4	6	0	0	17	2	0	1	22	0	62
Total	0	83	129	112	0	435	300	601	0	62	2,922	96	0	105	1,201	63	6,109

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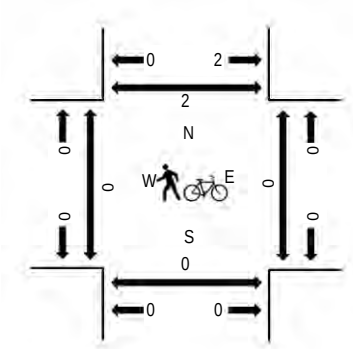
Location: 41 LAWRENCE EXPY & PRUNERIDGE RD PM
Date and Start Time: Tuesday, November 14, 2017
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	PRUNERIDGE RD Eastbound				PRUNERIDGE RD Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	39	44	16	0	40	16	27	0	12	366	46	0	123	454	11	1,194	5,362	0	0	0	0
4:15 PM	0	31	41	21	0	26	15	18	0	18	374	45	0	148	543	21	1,301	5,771	0	2	0	5
4:30 PM	0	41	56	24	0	47	16	34	0	18	370	46	2	125	602	19	1,400	5,948	0	0	0	0
4:45 PM	0	48	76	34	0	51	26	34	0	15	373	35	1	162	596	16	1,467	5,945	0	0	0	0
5:00 PM	0	31	67	48	0	61	44	41	1	24	353	69	0	154	687	23	1,603	5,918	0	0	0	0
5:15 PM	0	51	91	48	0	50	27	44	1	16	356	51	0	110	611	22	1,478		0	0	0	1
5:30 PM	0	41	82	48	0	72	36	45	2	13	316	37	0	95	586	24	1,397		0	0	0	0
5:45 PM	0	23	78	34	0	85	34	48	5	16	354	54	0	155	533	21	1,440		0	0	0	0

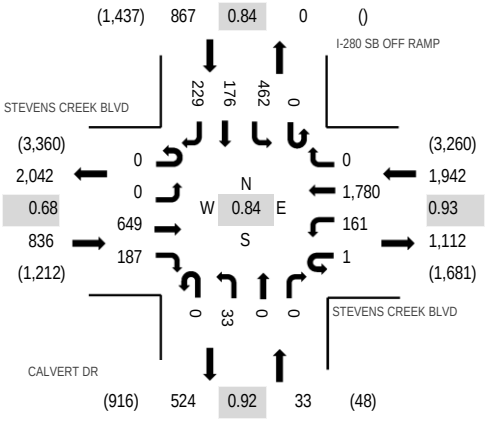
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights	0	170	290	154	0	206	113	152	2	73	1,441	201	3	549	2,489	80	5,923
Mediums	0	1	0	0	0	3	0	1	0	0	10	0	0	2	7	0	24
Total	0	171	290	154	0	209	113	153	2	73	1,452	201	3	551	2,496	80	5,948

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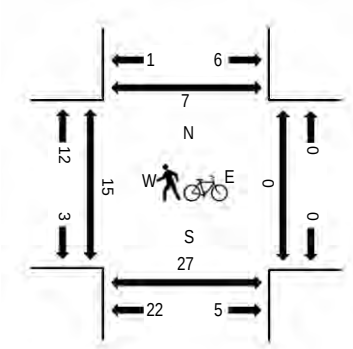
Location: 14 CALVERT DR & STEVENS CREEK BLVD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	STEVENS CREEK BLVD Eastbound				STEVENS CREEK BLVD Westbound				CALVERT DR Northbound				I-280 SB OFF RAMP Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	49	23	0	21	254	0	0	4	0	0	0	47	24	26	448	2,279	0	0	0	0
7:15 AM	0	0	62	25	0	33	283	0	0	3	0	0	0	67	34	26	533	2,641	1	0	1	1
7:30 AM	0	0	77	25	0	24	293	0	0	2	0	0	0	88	43	31	583	2,955	2	0	2	0
7:45 AM	0	0	79	36	0	51	359	0	0	6	0	0	0	100	53	31	715	3,297	3	0	2	2
8:00 AM	0	0	99	25	0	46	445	0	0	8	0	0	0	91	53	43	810	3,678	4	0	2	0
8:15 AM	0	0	130	45	0	36	425	0	0	9	0	0	0	102	45	55	847		5	0	2	1
8:30 AM	0	0	185	44	0	31	436	0	0	8	0	0	0	125	39	57	925		3	0	7	4
8:45 AM	0	0	235	73	1	48	474	0	0	8	0	0	0	144	39	74	1,096		3	0	10	1

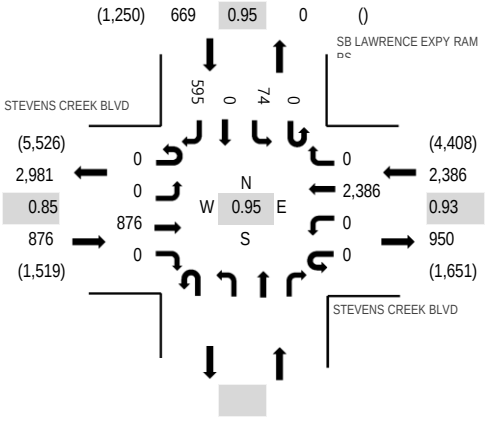
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	2	0	0	0	0	0	0	0	2	1	0	6
Lights	0	0	635	182	1	152	1,747	0	0	32	0	0	0	454	173	226	3,602
Mediums	0	0	14	4	0	7	33	0	0	1	0	0	0	6	2	3	70
Total	0	0	649	187	1	161	1,780	0	0	33	0	0	0	462	176	229	3,678

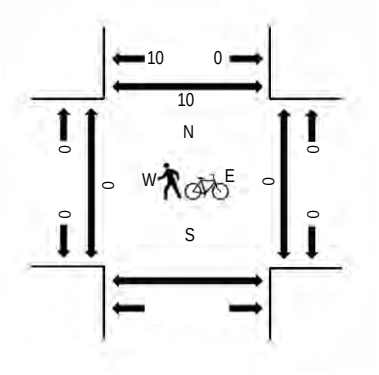
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Location: 36 SB LAWRENCE EXPY RAMPS & STEVENS CREEK BLVD AM
Date and Start Time: Thursday, May 10, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	STEVENS CREEK BLVD Eastbound				STEVENS CREEK BLVD Westbound				Northbound				SB LAWRENCE EXPY RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	67	0	0	0	468	0					0	11	0	108	654	3,246	0	0		1
7:15 AM	0	0	165	0	0	0	526	0					0	11	0	148	850	3,521	0	0		0
7:30 AM	0	0	223	0	0	0	508	0					0	26	0	143	900	3,673	0	0		0
7:45 AM	0	0	188	0	0	0	520	0					0	10	0	124	842	3,812	0	0		1
8:00 AM	0	0	192	0	0	0	578	0					0	15	0	144	929	3,931	0	0		1
8:15 AM	0	0	199	0	0	0	644	0					0	17	0	142	1,002		0	0		0
8:30 AM	0	0	258	0	0	0	605	0					0	15	0	161	1,039		0	0		5
8:45 AM	0	0	227	0	0	0	559	0					0	27	0	148	961		0	0		1

Peak Rolling Hour Flow Rates

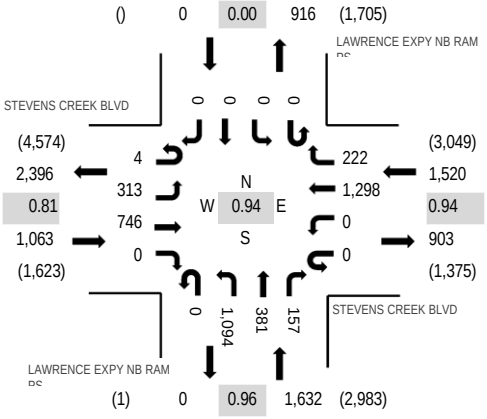
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	3	0	0	0	3	0					0	0	0	10	16
Lights	0	0	851	0	0	0	2,344	0					0	73	0	573	3,841
Mediums	0	0	22	0	0	0	39	0					0	1	0	12	74
Total	0	0	876	0	0	0	2,386	0					0	74	0	595	3,931

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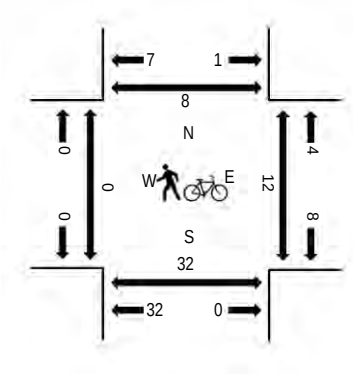
Location: 16 LAWRENCE EXPY NB RAMPS & STEVENS CREEK BLVD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	STEVENS CREEK BLVD Eastbound				STEVENS CREEK BLVD Westbound				LAWRENCE EXPY NB RAMPS Northbound				LAWRENCE EXPY NB RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	30	69	0	0	0	273	64	0	164	79	20	0	0	0	0	699	3,440	0	1	0	0
7:15 AM	2	41	88	0	0	0	325	42	0	209	88	29	0	0	0	0	824	3,733	0	2	3	0
7:30 AM	3	63	101	0	0	0	358	50	1	209	88	31	0	0	0	0	904	3,929	0	0	0	0
7:45 AM	2	62	99	0	0	0	365	52	0	268	130	35	0	0	0	0	1,013	4,102	0	0	0	0
8:00 AM	0	57	134	0	0	0	323	51	0	282	94	51	0	0	0	0	992	4,215	0	7	1	2
8:15 AM	0	84	155	0	0	0	322	55	0	272	90	42	0	0	0	0	1,020		0	0	3	3
8:30 AM	3	81	220	0	0	0	319	58	0	270	97	29	0	0	0	0	1,077		0	1	0	2
8:45 AM	1	91	237	0	0	0	334	58	0	270	100	35	0	0	0	0	1,126		0	0	1	1

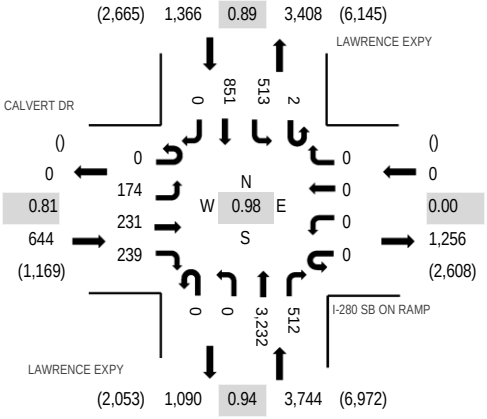
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	1	0	0	0	1	0	0	1	3	0	0	0	0	0	8
Lights	4	309	725	0	0	0	1,274	218	0	1,072	371	153	0	0	0	0	4,126
Mediums	0	2	20	0	0	0	23	4	0	21	7	4	0	0	0	0	81
Total	4	313	746	0	0	0	1,298	222	0	1,094	381	157	0	0	0	0	4,215

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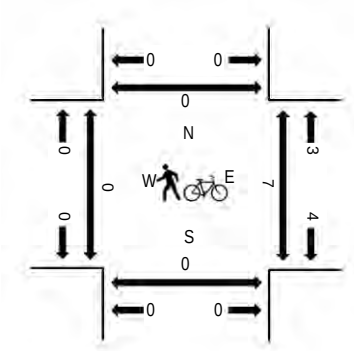
Location: 17 LAWRENCE EXPY & I-280 SB ON RAMP AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CALVERT DR Eastbound				I-280 SB ON RAMP Westbound				LAWRENCE EXPY Northbound				LAWRENCE EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	12	53	34	0	0	0	0	0	0	532	130	1	118	121	0	1,001	5,052	0	0	0	0
7:15 AM	0	20	36	59	0	0	0	0	0	0	659	170	2	134	176	0	1,256	5,487	0	1	0	0
7:30 AM	0	33	43	70	0	0	0	0	0	0	681	157	1	164	193	0	1,342	5,672	0	1	0	0
7:45 AM	0	33	50	82	0	0	0	0	0	0	762	137	1	160	228	0	1,453	5,739	0	0	0	0
8:00 AM	0	46	49	65	0	0	0	0	0	0	824	147	0	113	192	0	1,436	5,754	0	1	0	0
8:15 AM	0	25	52	48	0	0	0	0	0	0	861	133	0	126	196	0	1,441		0	1	0	0
8:30 AM	0	45	56	59	0	0	0	0	0	0	751	134	1	127	236	0	1,409		0	0	0	0
8:45 AM	0	58	74	67	0	0	0	0	0	0	796	98	1	147	227	0	1,468		0	0	0	0

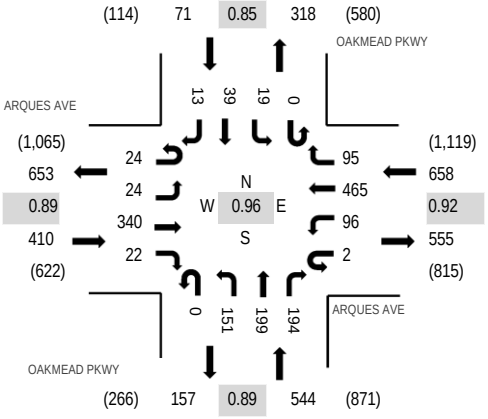
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	2	1	0	0	0	0	0	0	2	2	0	2	1	0	11
Lights	0	171	224	237	0	0	0	0	0	0	3,208	507	2	498	845	0	5,692
Mediums	0	2	5	1	0	0	0	0	0	0	22	3	0	13	5	0	51
Total	0	174	231	239	0	0	0	0	0	0	3,232	512	2	513	851	0	5,754

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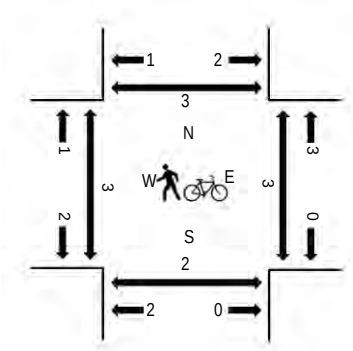
Location: 18 OAKMEAD PKWY & ARQUES AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				OAKMEAD PKWY Northbound				OAKMEAD PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	25	4	0	8	40	13	0	19	21	10	0	1	5	1	149	1,043	0	0	0	2
7:15 AM	3	6	47	2	1	16	73	19	1	20	39	18	0	1	7	1	254	1,275	0	2	0	3
7:30 AM	1	6	45	2	0	9	101	24	0	19	34	18	0	2	6	0	267	1,455	0	0	0	1
7:45 AM	2	7	54	6	0	30	96	31	0	34	60	34	0	4	13	2	373	1,618	5	1	1	1
8:00 AM	6	7	81	4	0	30	103	24	0	33	36	40	0	1	14	2	381	1,683	0	0	0	1
8:15 AM	5	5	81	5	1	31	121	27	0	38	53	46	0	4	14	3	434		1	0	1	1
8:30 AM	5	5	85	6	1	16	129	24	0	40	60	46	0	5	2	6	430		1	2	1	0
8:45 AM	8	7	93	7	0	19	112	20	0	40	50	62	0	9	9	2	438		1	0	0	1

Peak Rolling Hour Flow Rates

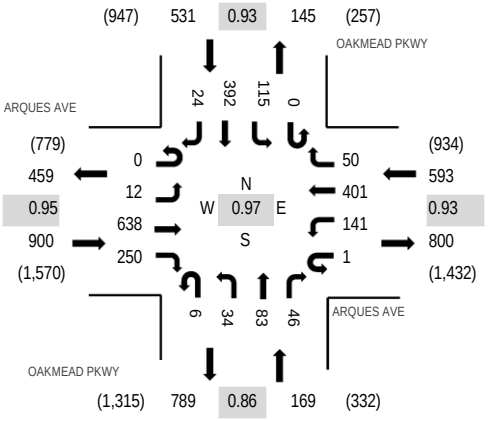
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Lights	24	23	336	21	2	95	453	93	0	150	193	191	0	19	37	13	1,650
Mediums	0	1	4	1	0	1	11	2	0	1	5	3	0	0	2	0	31
Total	24	24	340	22	2	96	465	95	0	151	199	194	0	19	39	13	1,683

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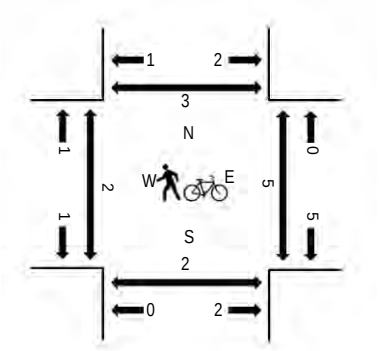
Location: 18 OAKMEAD PKWY & ARQUES AVE PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	ARQUES AVE Eastbound				ARQUES AVE Westbound				OAKMEAD PKWY Northbound				OAKMEAD PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	1	3	132	47	0	9	55	11	1	15	11	12	0	22	60	7	386	1,590	0	2	0	1
4:15 PM	1	2	110	45	1	19	56	9	0	10	11	18	0	16	56	4	358	1,771	0	0	0	1
4:30 PM	1	2	129	45	0	12	68	9	0	5	18	12	0	28	100	17	446	1,965	0	2	1	0
4:45 PM	0	2	113	37	0	21	59	12	1	14	22	13	0	26	73	7	400	2,087	0	0	0	4
5:00 PM	0	4	158	74	0	26	112	10	1	10	25	15	0	26	97	9	567	2,193	1	3	2	1
5:15 PM	0	4	173	58	0	44	93	20	3	9	16	9	0	28	89	6	552		0	2	0	0
5:30 PM	0	3	150	80	0	39	106	14	1	7	17	8	0	24	112	7	568		0	0	0	0
5:45 PM	0	1	157	38	1	32	90	6	1	8	25	14	0	37	94	2	506		1	0	0	2

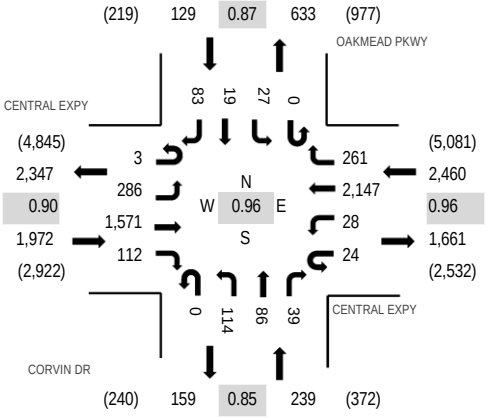
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Lights	0	11	631	248	1	139	401	49	6	34	81	43	0	115	390	24	2,173
Mediums	0	1	7	2	0	1	0	1	0	0	2	3	0	0	2	0	19
Total	0	12	638	250	1	141	401	50	6	34	83	46	0	115	392	24	2,193

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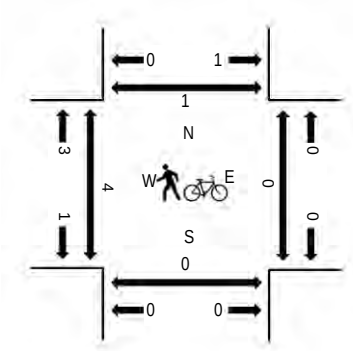
Location: 19 CORVIN DR & CENTRAL EXPY AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				CORVIN DR Northbound				OAKMEAD PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	9	139	5	6	10	565	40	0	8	4	7	0	2	4	6	806	3,794	0	0	0	0
7:15 AM	1	20	169	6	6	6	626	47	0	5	9	13	0	5	3	11	927	4,162	0	1	0	0
7:30 AM	1	28	218	14	4	6	618	48	0	15	8	9	0	4	1	12	986	4,449	1	0	0	0
7:45 AM	3	44	274	18	4	2	565	68	0	30	19	6	0	5	6	31	1,075	4,622	4	0	0	0
8:00 AM	1	70	351	20	8	4	569	57	0	23	16	14	0	8	2	31	1,174	4,800	0	0	0	0
8:15 AM	2	71	395	32	3	5	546	55	0	36	25	6	0	9	5	24	1,214		1	0	0	0
8:30 AM	0	73	391	19	7	11	509	75	0	20	18	11	0	3	8	14	1,159		2	0	0	1
8:45 AM	0	72	434	41	6	8	523	74	0	35	27	8	0	7	4	14	1,253		1	0	0	0

Peak Rolling Hour Flow Rates

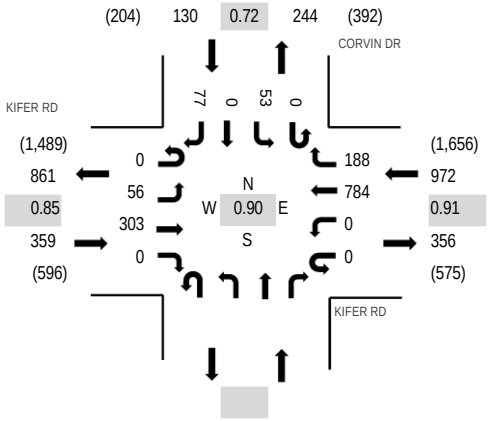
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	5	1	0	0	10	0	0	0	1	2	0	0	0	0	19
Lights	3	283	1,542	111	24	28	2,094	259	0	113	81	37	0	26	17	83	4,701
Mediums	0	3	24	0	0	0	43	2	0	1	4	0	0	1	2	0	80
Total	3	286	1,571	112	24	28	2,147	261	0	114	86	39	0	27	19	83	4,800

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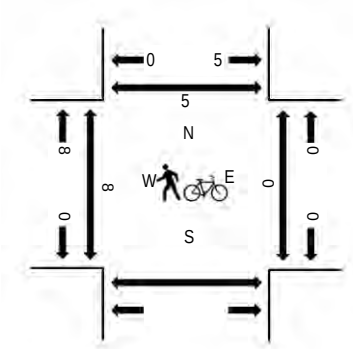
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Location: 20 CORVIN DR & KIFER RD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				CORVIN DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	41	0	0	0	92	18					0	4	0	10	170	995	0	0		0
7:15 AM	0	9	50	0	0	0	98	15					0	4	0	7	183	1,147	0	0		0
7:30 AM	0	15	41	0	0	0	170	30					0	6	0	13	275	1,323	1	0		0
7:45 AM	0	16	60	0	0	0	221	40					0	13	0	17	367	1,424	0	0		0
8:00 AM	0	13	57	0	0	0	180	49					0	11	0	12	322	1,461	1	0		0
8:15 AM	0	13	79	0	0	0	187	40					0	16	0	24	359		6	0		4
8:30 AM	0	19	87	0	0	0	208	40					0	7	0	15	376		0	0		0
8:45 AM	0	11	80	0	0	0	209	59					0	19	0	26	404		0	0		0

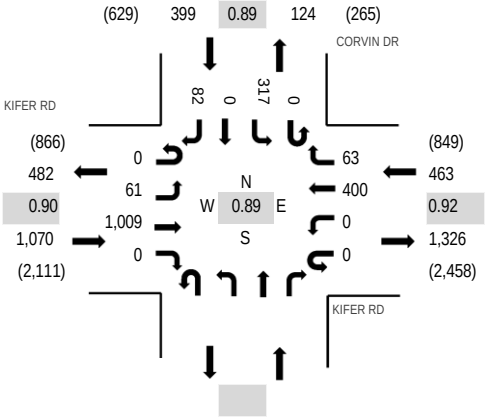
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	4	0	0	0	6	2					0	0	0	1	14
Lights	0	54	291	0	0	0	763	183					0	53	0	73	1,417
Mediums	0	1	8	0	0	0	15	3					0	0	0	3	30
Total	0	56	303	0	0	0	784	188					0	53	0	77	1,461

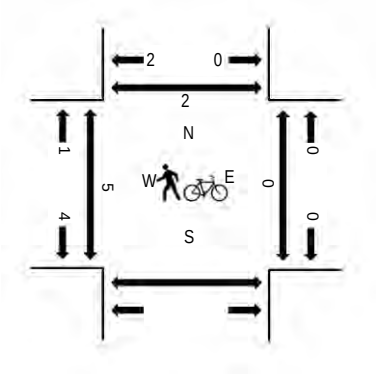
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Location: 20 CORVIN DR & KIFER RD PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				Northbound				CORVIN DR Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	13	222	0	0	0	87	16					0	41	0	11	390	1,657	2	0		0
4:15 PM	0	14	237	0	0	0	68	11					0	33	0	13	376	1,809	0	0		0
4:30 PM	0	26	242	0	0	0	85	16					0	47	0	12	428	1,892	2	0		2
4:45 PM	0	29	258	0	0	0	87	16					0	52	0	21	463	1,922	0	0		0
5:00 PM	0	21	291	0	0	0	107	19					0	86	0	18	542	1,932	2	0		1
5:15 PM	0	5	235	0	0	0	110	13					0	73	0	23	459		2	0		0
5:30 PM	0	20	258	0	0	0	80	13					0	71	0	16	458		1	0		0
5:45 PM	0	15	225	0	0	0	103	18					0	87	0	25	473		0	0		0

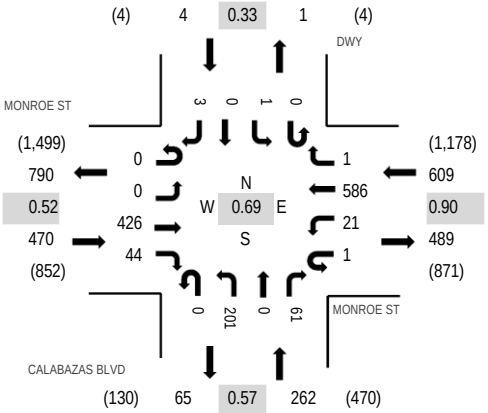
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0					0	0	0	1	2
Lights	0	59	1,005	0	0	0	393	60					0	315	0	80	1,912
Mediums	0	1	4	0	0	0	7	3					0	2	0	1	18
Total	0	61	1,009	0	0	0	400	63					0	317	0	82	1,932

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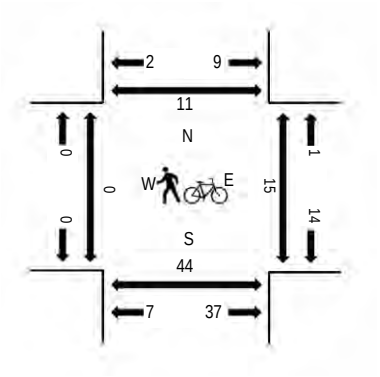
Location: 1 CALABAZAS BLVD & MONROE ST AM
Date and Start Time: Thursday, December 14, 2017
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MONROE ST Eastbound				MONROE ST Westbound				CALABAZAS BLVD Northbound				DWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	61	14	0	5	97	0	0	27	0	8	0	0	0	0	213	1,309	0	3	7	1
7:15 AM	0	0	203	23	1	5	143	0	0	90	0	24	0	0	0	0	489	1,345	0	7	23	7
7:30 AM	0	0	86	10	0	7	169	0	0	56	0	19	0	1	0	2	350	1,149	0	3	10	1
7:45 AM	0	0	70	5	0	8	140	0	0	25	0	9	0	0	0	0	257	1,101	0	0	4	0
8:00 AM	0	0	67	6	0	1	134	1	0	30	0	9	0	0	0	1	249	1,195	0	5	2	2
8:15 AM	0	0	64	11	0	6	167	0	0	34	0	11	0	0	0	0	293		0	0	4	0
8:30 AM	0	0	94	5	0	2	153	1	0	39	0	8	0	0	0	0	302		0	1	0	1
8:45 AM	0	1	115	16	0	6	132	0	0	60	0	21	0	0	0	0	351		0	1	6	2

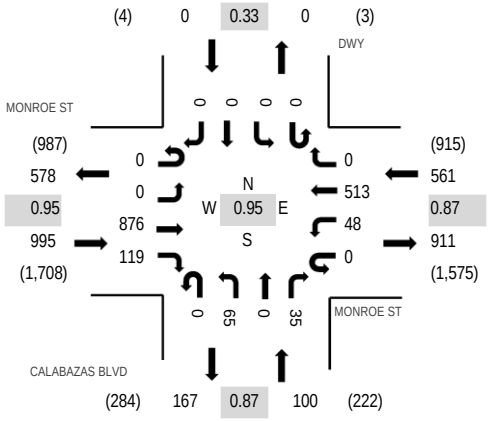
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	420	44	1	21	573	1	0	200	0	59	0	1	0	3	1,323
Mediums	0	0	6	0	0	0	13	0	0	1	0	2	0	0	0	0	22
Total	0	0	426	44	1	21	586	1	0	201	0	61	0	1	0	3	1,345

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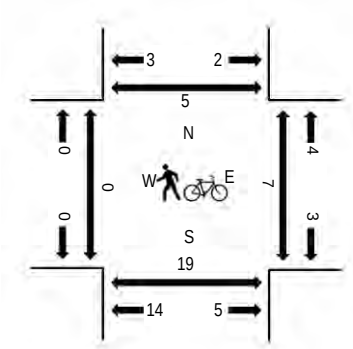
Location: 21 CALABAZAS BLVD & MONROE ST PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MONROE ST Eastbound				MONROE ST Westbound				CALABAZAS BLVD Northbound				DWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	127	18	0	5	78	0	0	10	0	6	0	0	0	0	244	1,193	0	0	6	1
4:15 PM	0	1	148	30	0	7	65	0	0	26	0	13	0	0	0	0	290	1,327	0	1	1	2
4:30 PM	0	0	175	20	0	4	83	1	0	23	0	9	0	2	0	1	318	1,452	0	2	2	1
4:45 PM	0	0	169	25	0	8	102	1	0	21	0	14	0	1	0	0	341	1,570	0	0	3	0
5:00 PM	0	0	204	17	0	12	115	0	0	21	0	9	0	0	0	0	378	1,656	0	2	3	2
5:15 PM	0	0	227	34	0	9	123	0	0	13	0	9	0	0	0	0	415		0	2	9	0
5:30 PM	0	0	221	31	0	13	148	0	0	16	0	7	0	0	0	0	436		0	0	3	0
5:45 PM	0	0	224	37	0	14	127	0	0	15	0	10	0	0	0	0	427		0	3	4	3

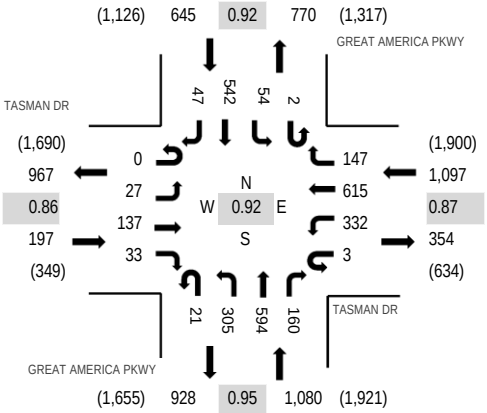
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	872	119	0	48	508	0	0	65	0	35	0	0	0	0	1,647
Mediums	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	9
Total	0	0	876	119	0	48	513	0	0	65	0	35	0	0	0	0	1,656

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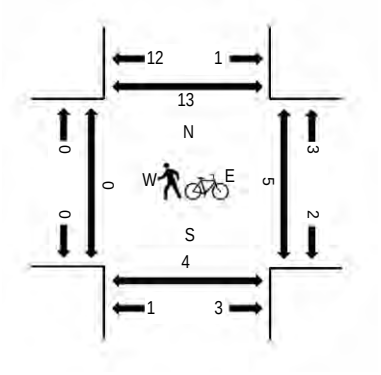
Location: 6 GREAT AMERICA PKWY & TASMAN DR AM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	TASMAN DR Eastbound				TASMAN DR Westbound				GREAT AMERICA PKWY Northbound				GREAT AMERICA PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	1	19	4	0	62	75	23	0	50	100	22	0	5	105	4	471	2,277	0	5	0	1
7:15 AM	0	2	22	5	1	39	95	17	8	59	104	17	0	13	96	4	482	2,508	0	1	0	0
7:30 AM	0	8	26	5	4	76	123	25	8	63	108	43	0	6	104	7	606	2,850	2	1	2	4
7:45 AM	0	16	34	9	5	85	162	11	7	73	132	47	0	16	114	7	718	2,976	2	0	0	4
8:00 AM	0	7	28	8	1	69	150	27	6	71	134	36	0	13	140	12	702	3,019	0	1	0	6
8:15 AM	0	7	41	6	2	107	166	40	7	83	147	42	2	15	141	18	824		0	1	0	3
8:30 AM	0	6	31	9	0	71	141	41	3	67	167	34	0	14	140	8	732		0	1	0	1
8:45 AM	0	7	37	10	0	85	158	39	5	84	146	48	0	12	121	9	761		0	1	1	2

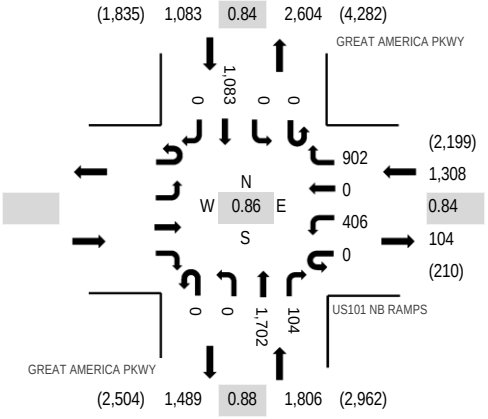
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	1	2	0	0	0	1	0	0	0	3	0	8
Lights	0	26	129	27	3	317	588	140	21	295	570	148	2	43	526	45	2,880
Mediums	0	1	8	5	0	14	25	7	0	10	23	12	0	11	13	2	131
Total	0	27	137	33	3	332	615	147	21	305	594	160	2	54	542	47	3,019

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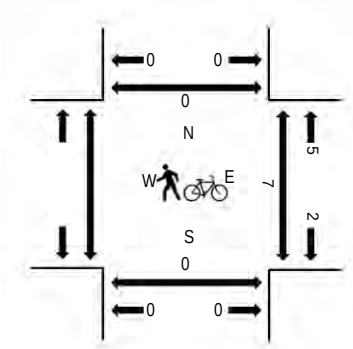
Location: 28 GREAT AMERICA PKWY & US101 NB RAMPS AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				US101 NB RAMPS Westbound				GREAT AMERICA PKWY Northbound				GREAT AMERICA PKWY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM					0	69	0	168	0	0	159	27	0	0	130	0	553	2,799		0	0	0
7:15 AM					0	52	0	152	0	0	242	26	0	0	158	0	630	3,179		3	0	0
7:30 AM					0	71	0	132	0	0	309	24	0	0	217	0	753	3,464		1	0	0
7:45 AM					0	71	0	176	0	0	340	29	0	0	247	0	863	3,836		0	0	0
8:00 AM					0	87	0	190	0	0	388	30	0	0	238	0	933	4,197		4	0	0
8:15 AM					0	98	0	200	0	0	365	25	0	0	227	0	915			3	0	0
8:30 AM					0	116	0	228	0	0	458	26	0	0	297	0	1,125			0	0	0
8:45 AM					0	105	0	284	0	0	491	23	0	0	321	0	1,224			0	0	0

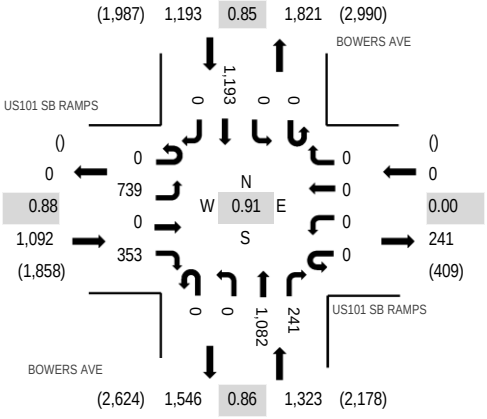
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	1	0	0	0	0	5	1	0	0	5	0	12
Lights					0	405	0	895	0	0	1,668	98	0	0	1,038	0	4,104
Mediums					0	0	0	7	0	0	29	5	0	0	40	0	81
Total					0	406	0	902	0	0	1,702	104	0	0	1,083	0	4,197

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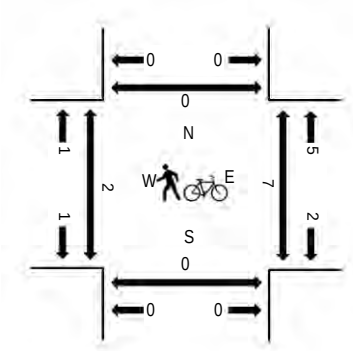
Location: 29 BOWERS AVE & US101 SB RAMPS AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	US101 SB RAMPS Eastbound				US101 SB RAMPS Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	80	0	54	0	0	0	0	0	0	104	45	0	0	161	0	444	2,415	1	1	0	0
7:15 AM	0	107	0	71	0	0	0	0	0	0	172	37	0	0	156	0	543	2,776	1	2	0	0
7:30 AM	0	123	0	78	0	0	0	0	0	0	211	34	0	0	231	0	677	3,054	1	1	0	0
7:45 AM	0	172	0	81	0	0	0	0	0	0	200	52	0	0	246	0	751	3,365	1	1	0	0
8:00 AM	0	170	0	98	0	0	0	0	0	0	227	52	0	0	258	0	805	3,608	0	4	0	0
8:15 AM	0	169	0	93	0	0	0	0	0	0	228	66	0	0	265	0	821		1	1	0	0
8:30 AM	0	173	0	80	0	0	0	0	0	0	316	67	0	0	352	0	988		0	0	0	0
8:45 AM	0	227	0	82	0	0	0	0	0	0	311	56	0	0	318	0	994		1	0	0	0

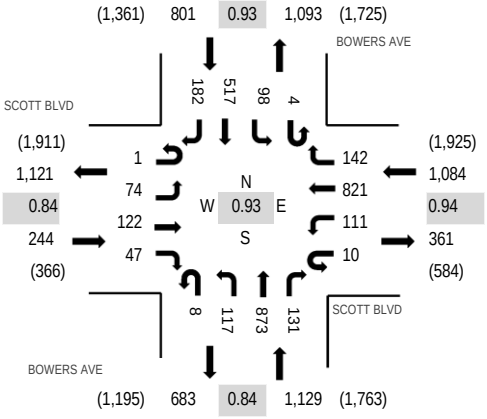
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	2	0	0	0	0	0	0	8	5	0	0	2	0	17
Lights	0	727	0	346	0	0	0	0	0	0	1,054	232	0	0	1,162	0	3,521
Mediums	0	12	0	5	0	0	0	0	0	0	20	4	0	0	29	0	70
Total	0	739	0	353	0	0	0	0	0	0	1,082	241	0	0	1,193	0	3,608

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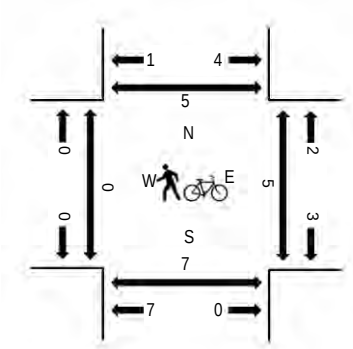
Location: 22 BOWERS AVE & SCOTT BLVD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	SCOTT BLVD Eastbound				SCOTT BLVD Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	8	6	6	3	15	69	13	0	13	94	21	0	17	62	26	353	2,157	0	3	0	0
7:15 AM	0	8	4	10	0	25	134	23	0	13	117	17	1	19	84	25	480	2,493	0	0	1	1
7:30 AM	0	7	19	4	1	41	173	33	0	11	126	17	0	18	116	35	601	2,861	0	1	0	0
7:45 AM	1	16	20	13	7	34	233	37	1	29	149	26	0	28	101	28	723	3,135	0	0	0	5
8:00 AM	0	17	27	7	1	27	216	41	1	20	143	26	0	18	114	31	689	3,258	0	1	0	0
8:15 AM	0	16	26	15	3	28	229	28	5	28	225	34	2	27	129	53	848		0	1	2	1
8:30 AM	0	26	29	8	3	37	207	40	1	38	240	30	1	17	149	49	875		0	2	5	1
8:45 AM	1	15	40	17	3	19	169	33	1	31	265	41	1	36	125	49	846		0	1	0	3

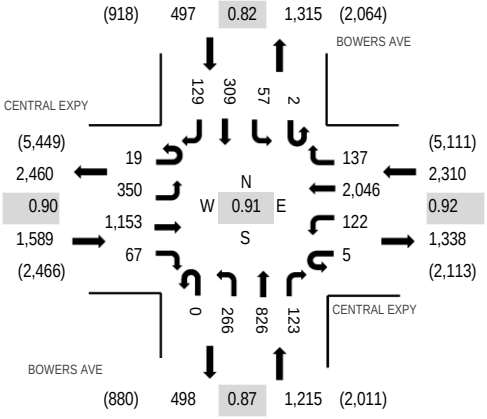
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	2	0	0	0	7	0	0	2	3	0	15
Lights	1	71	120	45	10	107	809	138	8	115	852	127	3	92	493	177	3,168
Mediums	0	2	2	2	0	4	10	4	0	2	14	4	1	4	21	5	75
Total	1	74	122	47	10	111	821	142	8	117	873	131	4	98	517	182	3,258

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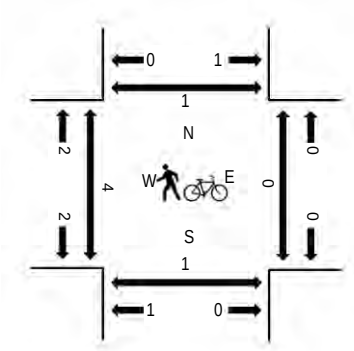
Location: 23 BOWERS AVE & CENTRAL EXPY AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	CENTRAL EXPY Eastbound				CENTRAL EXPY Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	1	16	117	8	4	30	686	44	0	34	78	17	0	5	44	17	1,101	4,895	0	0	0	0
7:15 AM	6	30	127	13	1	27	640	41	0	61	100	21	0	10	40	47	1,164	5,015	0	0	0	0
7:30 AM	9	37	185	16	2	25	636	21	0	80	114	19	0	7	43	60	1,254	5,243	0	0	0	0
7:45 AM	9	56	220	27	1	26	583	34	0	69	178	25	0	14	83	51	1,376	5,445	1	0	0	0
8:00 AM	2	63	255	19	2	24	487	25	0	60	154	25	0	13	66	26	1,221	5,611	1	0	1	0
8:15 AM	3	92	311	21	2	34	504	31	0	67	190	27	1	10	70	29	1,392		1	0	0	1
8:30 AM	7	93	271	13	0	37	524	38	0	75	226	41	1	16	77	37	1,456		1	0	0	0
8:45 AM	7	102	316	14	1	27	531	43	0	64	256	30	0	18	96	37	1,542		1	0	0	0

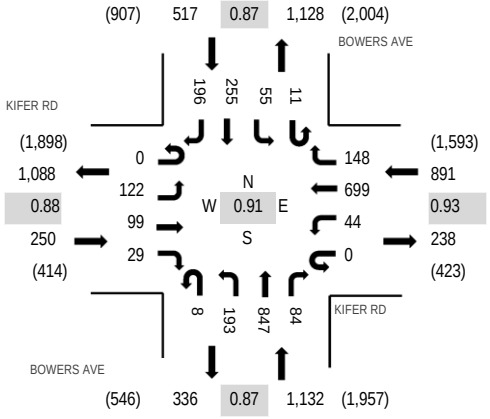
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	0	7	0	0	0	5	2	0	0	2	0	22
Lights	19	349	1,124	66	5	119	1,997	136	0	265	801	119	2	47	295	125	5,469
Mediums	0	1	23	1	0	3	42	1	0	1	20	2	0	10	12	4	120
Total	19	350	1,153	67	5	122	2,046	137	0	266	826	123	2	57	309	129	5,611

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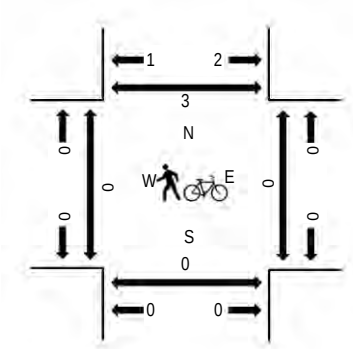
Location: 24 BOWERS AVE & KIFER RD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	19	16	3	0	2	83	15	1	14	134	11	0	14	30	39	381	2,081	0	0	0	0
7:15 AM	0	20	20	5	0	3	105	21	1	21	154	6	0	18	38	28	440	2,314	2	0	2	0
7:30 AM	0	12	12	6	0	6	175	40	3	31	194	12	5	12	40	41	589	2,553	1	0	0	2
7:45 AM	0	16	27	8	0	7	197	48	2	30	198	13	0	24	55	46	671	2,732	2	1	2	3
8:00 AM	0	30	14	5	0	9	195	40	1	33	159	19	2	13	55	39	614	2,790	0	0	0	0
8:15 AM	0	32	30	9	0	9	161	29	4	36	228	14	3	13	59	52	679		0	0	0	0
8:30 AM	0	30	30	7	0	14	185	44	1	65	234	25	3	13	71	46	768		0	0	0	3
8:45 AM	0	30	25	8	0	12	158	35	2	59	226	26	3	16	70	59	729		0	0	0	0

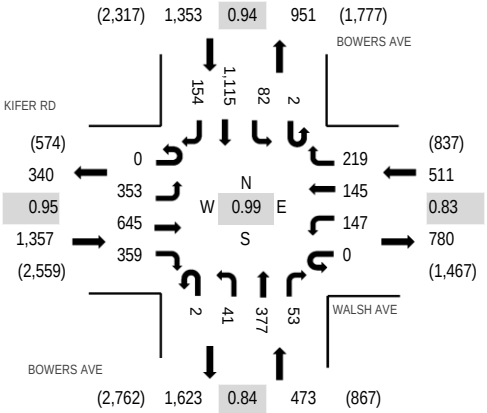
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	3	1	0	0	0	4	1	0	0	2	0	0	0	0	3	14
Lights	0	112	95	29	0	42	685	138	8	192	837	83	11	51	250	188	2,721
Mediums	0	7	3	0	0	2	10	9	0	1	8	1	0	4	5	5	55
Total	0	122	99	29	0	44	699	148	8	193	847	84	11	55	255	196	2,790

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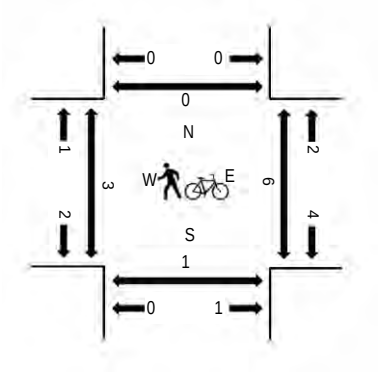
Location: 8 BOWERS AVE & WALSH AVE PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	KIFER RD Eastbound				WALSH AVE Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	97	123	57	0	17	25	24	2	4	85	11	1	9	150	14	619	2,886	0	0	1	1
4:15 PM	0	97	124	46	0	18	30	22	1	8	85	8	2	14	199	18	672	3,190	1	0	1	0
4:30 PM	0	89	169	71	3	12	30	45	1	11	72	6	0	21	198	21	749	3,443	0	0	1	0
4:45 PM	0	97	153	79	1	26	37	36	1	11	74	14	0	31	261	25	846	3,626	0	1	0	1
5:00 PM	0	92	176	77	0	36	41	76	1	9	87	17	0	17	260	34	923	3,694	0	2	0	0
5:15 PM	0	96	169	96	0	43	49	49	1	14	71	10	1	24	273	29	925		1	1	0	0
5:30 PM	0	78	171	88	0	30	28	41	0	10	116	15	1	20	292	42	932		0	2	1	0
5:45 PM	0	87	129	98	0	38	27	53	0	8	103	11	0	21	290	49	914		2	0	0	0

Peak Rolling Hour Flow Rates

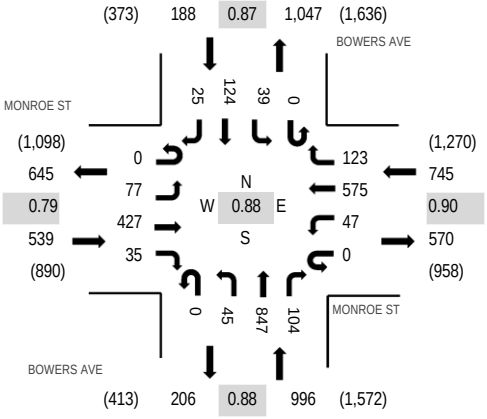
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	349	643	359	0	145	143	218	2	41	370	52	2	81	1,111	151	3,667
Mediums	0	3	2	0	0	2	2	1	0	0	7	1	0	1	4	3	26
Total	0	353	645	359	0	147	145	219	2	41	377	53	2	82	1,115	154	3,694

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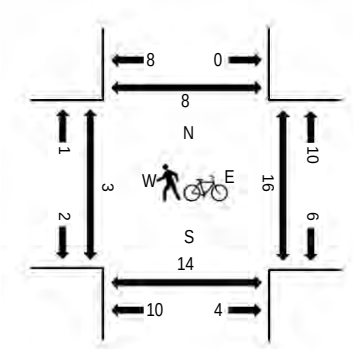
Location: 25 BOWERS AVE & MONROE ST AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MONROE ST Eastbound				MONROE ST Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	11	42	6	0	5	62	17	0	5	71	15	0	6	19	2	261	1,637	1	1	1	1
7:15 AM	0	6	63	5	0	4	92	24	0	8	96	13	0	8	25	4	348	1,890	0	4	0	1
7:30 AM	0	17	82	13	0	12	109	24	0	11	129	31	0	11	38	9	486	2,118	5	1	3	1
7:45 AM	0	9	77	20	0	15	131	30	0	16	155	26	0	14	45	4	542	2,312	3	0	1	0
8:00 AM	0	16	84	8	0	19	129	24	0	13	151	25	0	10	30	5	514	2,468	0	8	2	1
8:15 AM	0	17	86	8	0	13	120	32	0	8	215	25	0	8	33	11	576		3	4	3	0
8:30 AM	0	19	125	5	0	9	160	33	0	12	234	36	0	12	29	6	680		0	1	5	5
8:45 AM	0	25	132	14	0	6	166	34	0	12	247	18	0	9	32	3	698		0	3	2	1

Peak Rolling Hour Flow Rates

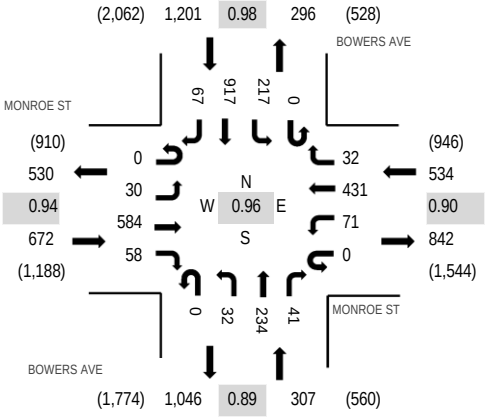
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Lights	0	77	419	35	0	44	561	123	0	45	842	103	0	39	119	25	2,432
Mediums	0	0	8	0	0	3	13	0	0	0	4	1	0	0	5	0	34
Total	0	77	427	35	0	47	575	123	0	45	847	104	0	39	124	25	2,468

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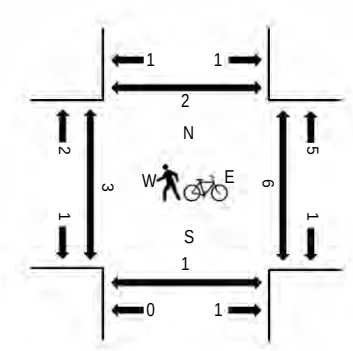
Location: 25 BOWERS AVE & MONROE ST PM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MONROE ST Eastbound				MONROE ST Westbound				BOWERS AVE Northbound				BOWERS AVE Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	6	96	10	0	16	64	11	0	7	41	19	0	42	148	11	471	2,042	1	0	1	0
4:15 PM	0	4	109	14	0	15	74	11	0	12	34	10	0	46	157	8	494	2,243	2	3	2	0
4:30 PM	0	5	143	8	0	17	70	11	0	8	47	11	0	45	134	9	508	2,431	3	3	1	0
4:45 PM	0	4	107	10	0	15	92	16	0	11	42	11	0	63	184	14	569	2,627	0	0	1	2
5:00 PM	0	4	158	13	0	19	89	8	0	8	66	12	0	63	218	14	672	2,714	0	0	0	0
5:15 PM	0	8	146	11	0	14	106	11	0	11	60	8	0	62	227	18	682		1	5	1	1
5:30 PM	0	7	149	23	0	19	121	8	0	8	55	11	0	46	240	17	704		1	0	0	1
5:45 PM	0	11	131	11	0	19	115	5	0	5	53	10	0	46	232	18	656		0	0	0	0

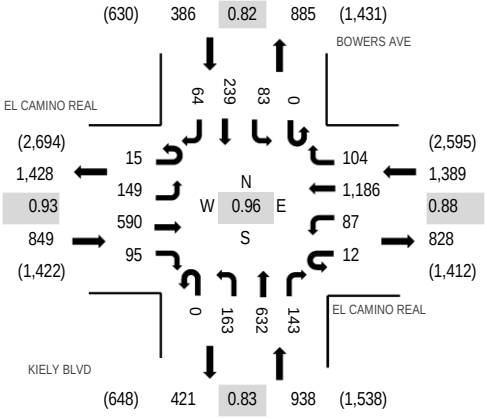
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	30	582	58	0	71	426	28	0	31	230	40	0	215	912	67	2,690
Mediums	0	0	2	0	0	0	5	4	0	1	4	1	0	2	4	0	23
Total	0	30	584	58	0	71	431	32	0	32	234	41	0	217	917	67	2,714

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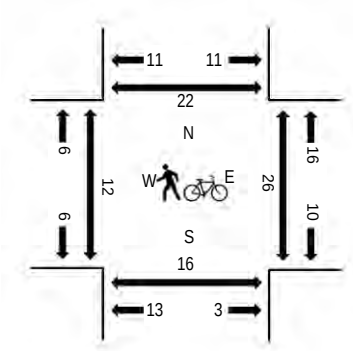
Location: 33 KIELY BLVD & EL CAMINO REAL AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				KIELY BLVD Northbound				BOWERS AVE Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	3	6	69	5	0	15	177	14	0	14	38	20	0	4	20	11	396	2,652	1	4	3	1
7:15 AM	2	18	79	15	3	11	275	14	0	21	53	21	0	15	22	8	557	3,088	1	5	1	2
7:30 AM	1	27	118	12	2	9	386	21	0	23	105	29	0	14	24	28	799	3,438	1	4	3	0
7:45 AM	3	41	142	11	1	26	377	25	0	30	120	25	0	26	54	19	900	3,562	2	5	2	6
8:00 AM	6	36	136	25	0	24	307	26	0	31	113	33	0	22	59	14	832	3,533	2	3	2	2
8:15 AM	4	41	156	33	5	17	236	26	0	53	178	41	0	19	82	16	907		3	11	3	8
8:30 AM	2	31	156	26	6	20	266	27	0	49	221	44	0	16	44	15	923		4	7	9	6
8:45 AM	6	49	144	19	6	21	228	24	0	64	177	35	0	25	54	19	871		2	6	5	8

Peak Rolling Hour Flow Rates

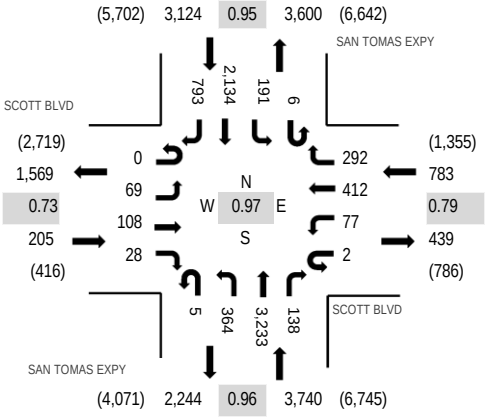
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	1	8	1	0	0	0	0	0	0	0	0	11
Lights	15	148	577	92	12	83	1,143	101	0	161	624	142	0	82	230	63	3,473
Mediums	0	1	12	3	0	3	35	2	0	2	8	1	0	1	9	1	78
Total	15	149	590	95	12	87	1,186	104	0	163	632	143	0	83	239	64	3,562

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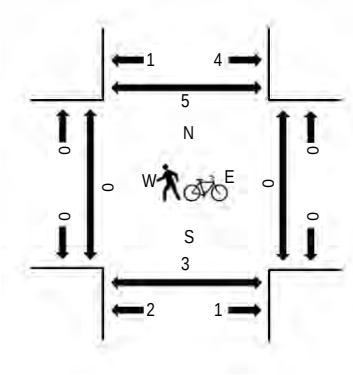
Location: 30 SAN TOMAS EXPY & SCOTT BLVD AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	SCOTT BLVD Eastbound				SCOTT BLVD Westbound				SAN TOMAS EXPY Northbound				SAN TOMAS EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	4	22	5	0	7	45	51	1	29	487	10	0	40	386	123	1,210	6,503	0	0	0	0
7:15 AM	0	5	15	3	0	7	69	62	2	50	568	22	2	45	431	148	1,429	7,279	0	0	0	2
7:30 AM	0	8	19	7	0	17	88	62	0	89	743	35	2	39	544	184	1,837	7,852	0	0	0	3
7:45 AM	0	20	39	9	1	38	114	94	2	75	756	60	2	62	558	197	2,027	7,828	0	0	2	0
8:00 AM	0	15	20	5	0	17	94	71	2	91	879	19	1	52	525	195	1,986	7,715	0	0	0	0
8:15 AM	0	26	30	7	1	5	116	65	1	109	855	24	1	38	507	217	2,002		0	0	0	1
8:30 AM	1	32	24	11	0	9	89	62	0	65	807	19	2	47	467	178	1,813		0	0	0	1
8:45 AM	0	30	44	15	0	8	99	64	2	72	863	8	3	51	473	182	1,914		0	0	0	2

Peak Rolling Hour Flow Rates

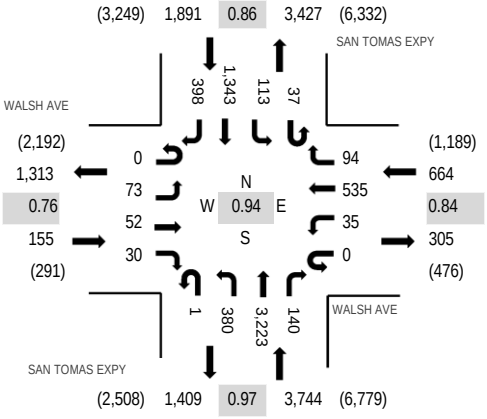
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	2	3	0	1	9	0	1	1	15	3	36
Lights	0	63	102	28	2	77	399	276	5	360	3,197	136	5	184	2,073	773	7,680
Mediums	0	6	5	0	0	0	11	13	0	3	27	2	0	6	46	17	136
Total	0	69	108	28	2	77	412	292	5	364	3,233	138	6	191	2,134	793	7,852

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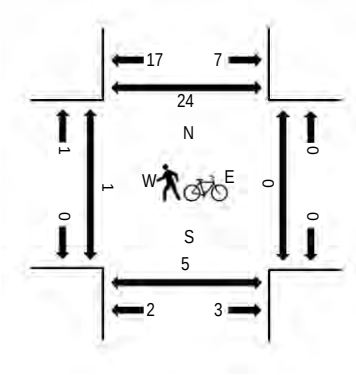
Location: 31 SAN TOMAS EXPY & WALSH AVE AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	WALSH AVE Eastbound				WALSH AVE Westbound				SAN TOMAS EXPY Northbound				SAN TOMAS EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	11	8	8	0	3	64	10	0	37	567	24	0	14	196	68	1,010	5,054	0	0	0	1
7:15 AM	0	22	11	8	0	5	103	3	0	19	661	22	0	6	186	42	1,088	5,694	0	0	0	0
7:30 AM	0	9	5	5	0	8	123	16	0	57	742	14	0	13	301	52	1,345	6,066	0	0	1	0
7:45 AM	1	29	15	4	0	8	162	20	1	57	815	19	0	20	366	94	1,611	6,446	1	0	1	1
8:00 AM	0	15	13	9	0	6	117	32	1	120	815	29	9	24	363	97	1,650	6,454	0	0	1	1
8:15 AM	0	12	9	1	0	17	111	23	0	100	757	36	4	13	297	80	1,460		0	0	1	3
8:30 AM	0	20	16	9	0	6	131	24	0	74	846	43	11	25	394	126	1,725		0	0	2	8
8:45 AM	0	26	14	11	0	6	176	15	0	86	805	32	13	51	289	95	1,619		1	0	0	11

Peak Rolling Hour Flow Rates

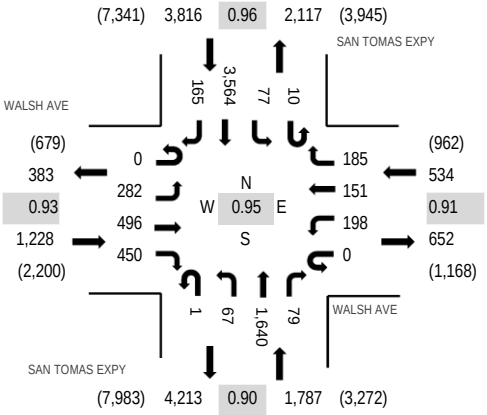
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	1	0	0	0	2	0	1	6	0	0	0	8	2	21
Lights	0	69	49	29	0	35	523	87	1	379	3,200	140	37	110	1,297	391	6,347
Mediums	0	3	3	0	0	0	12	5	0	0	17	0	0	3	38	5	86
Total	0	73	52	30	0	35	535	94	1	380	3,223	140	37	113	1,343	398	6,454

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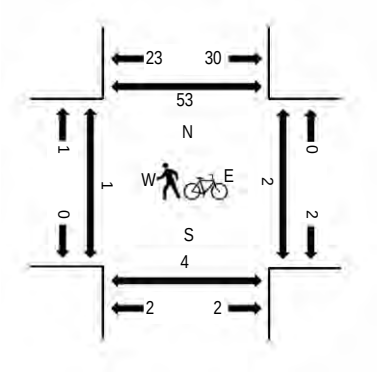
Location: 9 SAN TOMAS EXPY & WALSH AVE PM
Date and Start Time: Wednesday, March 7, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	WALSH AVE Eastbound				WALSH AVE Westbound				SAN TOMAS EXPY Northbound				SAN TOMAS EXPY Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	57	74	77	0	36	31	50	2	6	323	14	3	19	728	24	1,444	6,410	0	0	1	21
4:15 PM	0	57	73	87	0	25	32	41	0	15	333	18	0	12	917	42	1,652	6,752	0	0	2	9
4:30 PM	0	77	97	78	0	28	21	49	0	12	346	14	1	22	825	27	1,597	7,042	0	0	1	14
4:45 PM	0	65	140	90	0	34	30	51	1	11	374	16	1	17	842	45	1,717	7,285	0	1	2	13
5:00 PM	0	69	125	108	0	50	42	40	0	15	343	19	2	24	906	43	1,786	7,365	0	1	1	22
5:15 PM	0	78	133	121	0	46	51	51	0	20	430	21	4	30	916	41	1,942		1	0	1	9
5:30 PM	0	75	123	111	0	59	33	49	1	18	405	17	3	11	891	44	1,840		0	0	0	10
5:45 PM	0	60	115	110	0	43	25	45	0	14	462	22	1	12	851	37	1,797		0	0	0	8

Peak Rolling Hour Flow Rates

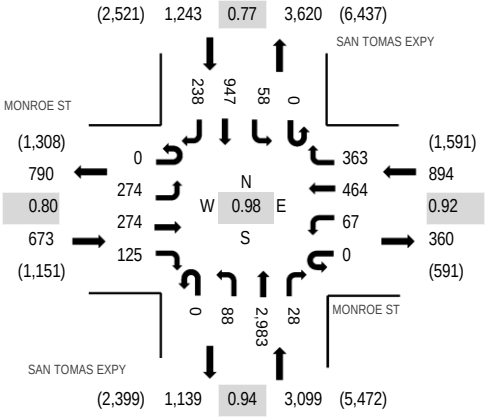
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lights	0	282	488	449	0	196	146	183	1	67	1,629	78	10	75	3,555	161	7,320
Mediums	0	0	8	1	0	2	5	2	0	0	11	1	0	1	9	4	44
Total	0	282	496	450	0	198	151	185	1	67	1,640	79	10	77	3,564	165	7,365

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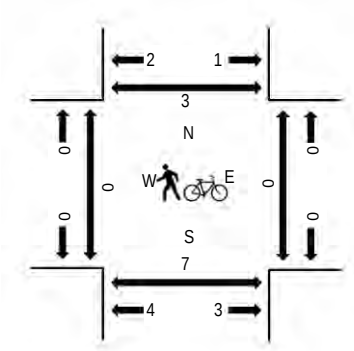
Location: 32 SAN TOMAS EXPY & MONROE ST AM
Date and Start Time: Wednesday, November 15, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	MONROE ST Eastbound				MONROE ST Westbound				SAN TOMAS EXPY Northbound				SAN TOMAS EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	33	26	18	0	17	38	77	0	5	548	6	0	9	194	31	1,002	4,826	0	0	0	0
7:15 AM	0	47	26	17	0	19	59	81	0	20	594	6	0	16	195	32	1,112	5,339	0	0	0	1
7:30 AM	0	58	53	26	0	21	93	81	0	24	593	5	0	16	269	37	1,276	5,701	0	0	0	2
7:45 AM	0	73	60	41	0	28	100	83	0	22	548	2	1	6	415	57	1,436	5,849	0	0	0	0
8:00 AM	0	51	45	32	0	20	93	78	0	27	789	8	0	14	292	66	1,515	5,909	0	0	1	0
8:15 AM	0	69	49	33	0	21	124	78	0	19	764	8	0	9	246	54	1,474		0	0	0	3
8:30 AM	0	83	92	35	0	14	118	104	0	18	692	5	0	17	187	59	1,424		0	0	2	0
8:45 AM	0	71	88	25	0	12	129	103	0	24	738	7	0	18	222	59	1,496		0	0	0	0

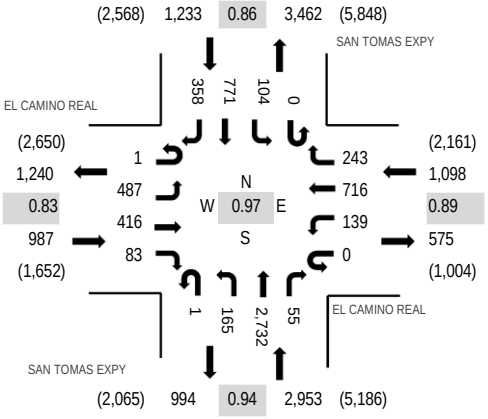
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	6	0	0	0	2	0	9
Lights	0	268	268	124	0	60	456	360	0	87	2,966	28	0	55	919	231	5,822
Mediums	0	6	6	1	0	7	7	3	0	1	11	0	0	3	26	7	78
Total	0	274	274	125	0	67	464	363	0	88	2,983	28	0	58	947	238	5,909

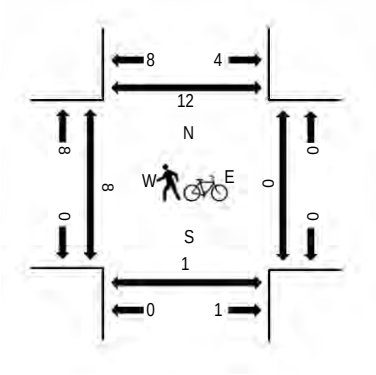
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Location: 6 SAN TOMAS EXPY & EL CAMINO REAL AM
Date and Start Time: Tuesday, November 28, 2017
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				SAN TOMAS EXPY Northbound				SAN TOMAS EXPY Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	50	55	11	7	37	179	39	0	44	449	17	0	17	171	74	1,150	5,296	0	0	0	1
7:15 AM	0	66	93	17	0	28	196	39	0	68	451	39	0	16	226	105	1,344	5,726	1	0	0	0
7:30 AM	0	86	81	19	0	30	210	41	1	49	494	4	0	5	209	92	1,321	5,993	1	0	0	2
7:45 AM	0	91	75	21	0	22	199	36	0	66	544	7	0	13	279	128	1,481	6,237	0	0	0	1
8:00 AM	1	119	96	21	0	41	184	42	0	56	654	12	0	21	213	120	1,580	6,271	0	0	0	3
8:15 AM	0	95	91	22	0	30	178	53	0	49	720	12	0	30	221	110	1,611		0	0	1	1
8:30 AM	0	144	137	18	0	36	192	80	1	21	622	17	0	32	190	75	1,565		3	0	0	2
8:45 AM	0	129	92	22	0	32	162	68	0	39	736	14	0	21	147	53	1,515		0	0	0	3

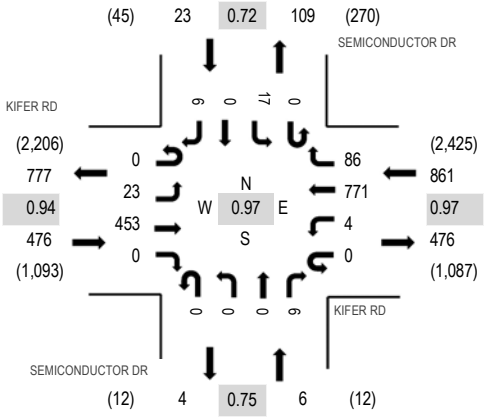
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	4	1	0	2	9	0	0	0	1	0	0	0	0	1	18
Lights	1	485	404	81	0	136	679	242	1	164	2,712	55	0	100	761	352	6,173
Mediums	0	2	8	1	0	1	28	1	0	1	19	0	0	4	10	5	80
Total	1	487	416	83	0	139	716	243	1	165	2,732	55	0	104	771	358	6,271

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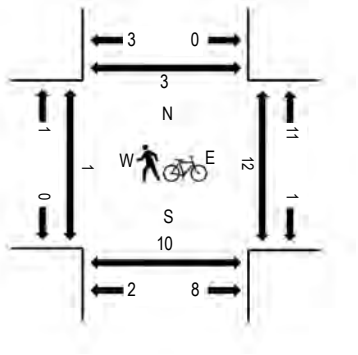
Location: 1 SEMICONDUCTOR DR & KIFER RD AM
Date: Tuesday, September 11, 2018
Peak Hour: 08:45 AM - 09:45 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



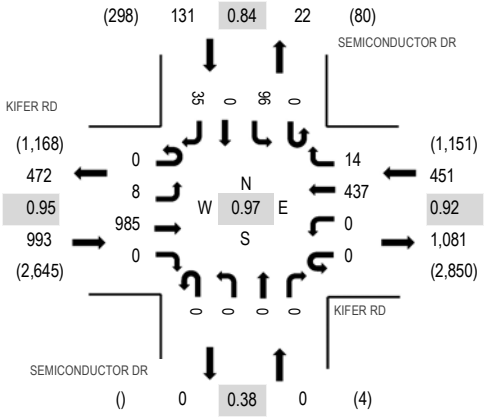
Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				SEMICONDUCTOR DR Northbound				SEMICONDUCTOR DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	26	1	0	0	121	10	0	0	0	1	0	3	0	0	162	966	1	0	4	0
7:15 AM	0	2	42	0	0	1	168	14	0	0	0	0	0	0	0	1	228	1,123	0	5	3	1
7:30 AM	0	2	62	0	0	1	184	15	0	0	0	2	0	1	0	1	268	1,196	0	1	3	2
7:45 AM	0	1	65	0	0	0	220	16	0	0	0	1	0	2	0	3	308	1,225	0	1	2	0
8:00 AM	0	7	90	1	0	0	192	26	0	0	0	2	0	1	0	0	319	1,269	1	1	0	0
8:15 AM	0	6	93	1	0	1	184	14	0	0	0	0	0	1	0	1	301	1,290	1	4	1	1
8:30 AM	0	5	84	0	0	0	190	15	0	0	0	0	0	3	0	0	297	1,324	0	1	1	3
8:45 AM	0	7	112	0	0	2	200	21	0	0	0	2	0	7	0	1	352	1,366	1	1	2	0
9:00 AM	0	7	118	0	0	1	188	22	0	0	0	2	0	1	0	1	340	1,340	0	8	0	3
9:15 AM	0	4	112	0	0	1	191	19	0	0	0	1	0	5	0	2	335		0	1	0	0
9:30 AM	0	5	111	0	0	0	192	24	0	0	0	1	0	4	0	2	339		0	2	5	0
9:45 AM	0	2	127	0	0	2	164	26	0	0	0	0	0	5	0	0	326		1	3	6	0
Count Total	0	48	1,042	3	0	9	2,194	222	0	0	0	12	0	33	0	12	3,575		5	28	27	10
Peak Hour	0	23	453	0	0	4	771	86	0	0	0	6	0	17	0	6	#####		1	12	7	3

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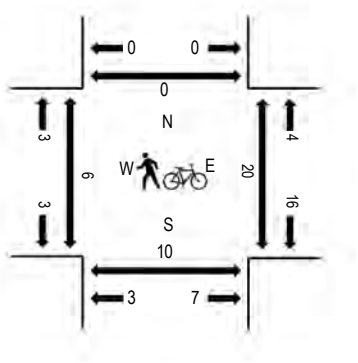
Location: 1 SEMICONDUCTOR DR & KIFER RD PM
Date: Tuesday, September 11, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



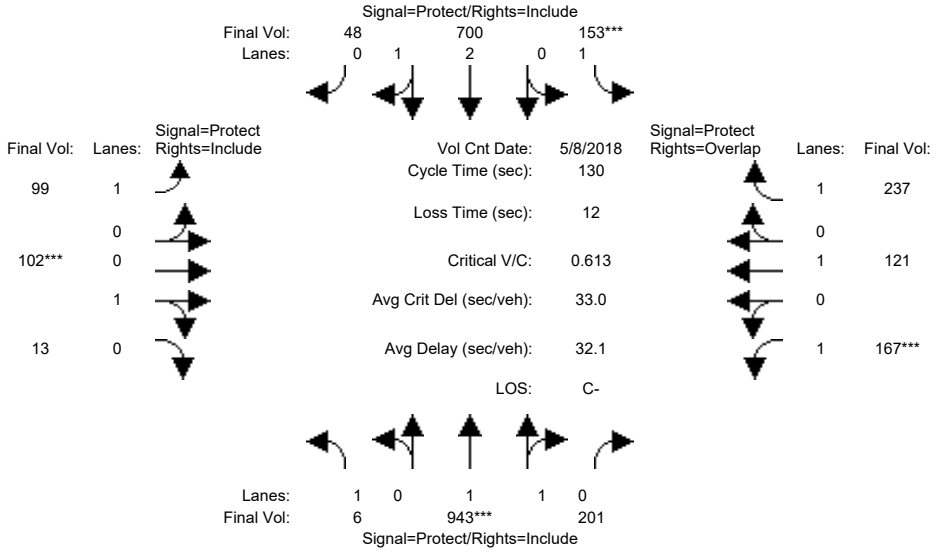
Traffic Counts

Interval Start Time	KIFER RD Eastbound				KIFER RD Westbound				SEMICONDUCTOR DR Northbound				SEMICONDUCTOR DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	236	0	1	0	85	4	0	1	0	1	0	24	0	3	355	1,426	4	6	7	0
4:15 PM	0	2	238	0	0	0	82	2	0	0	0	1	0	14	0	1	340	1,462	0	4	3	0
4:30 PM	0	1	235	0	0	0	89	8	0	0	0	0	0	14	0	5	352	1,530	1	6	2	1
4:45 PM	0	3	235	0	0	0	111	2	0	0	0	0	0	21	0	7	379	1,575	2	1	1	0
5:00 PM	0	1	236	0	0	0	114	1	0	0	0	0	0	27	0	12	391	1,545	1	8	2	0
5:15 PM	0	3	257	0	0	0	117	5	0	0	0	0	0	19	0	7	408	1,489	0	5	0	0
5:30 PM	0	1	257	0	0	0	95	6	0	0	0	0	0	29	0	9	397	1,363	3	5	4	0
5:45 PM	0	1	237	0	0	0	83	9	0	0	0	0	0	12	0	7	349	1,247	1	2	2	0
6:00 PM	1	3	206	0	0	0	90	11	0	0	0	1	0	17	0	6	335	1,127	2	5	3	1
6:15 PM	0	0	173	0	0	0	84	8	0	0	0	0	0	13	0	4	282		0	1	0	0
6:30 PM	0	1	171	0	0	0	76	8	0	0	0	0	0	17	0	8	281		1	6	2	2
6:45 PM	0	0	147	0	0	0	60	0	0	0	0	0	0	11	0	11	229		0	1	1	0
Count Total	1	16	2,628	0	1	0	1,086	64	0	1	0	3	0	218	0	80	4,098		15	50	27	4
Peak Hour	0	8	985	0	0	0	437	14	0	0	0	0	0	96	0	35	#####		6	19	7	0

Appendix B
Level of Service Calculations

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #41: Fair Oaks Ave & Duane Ave



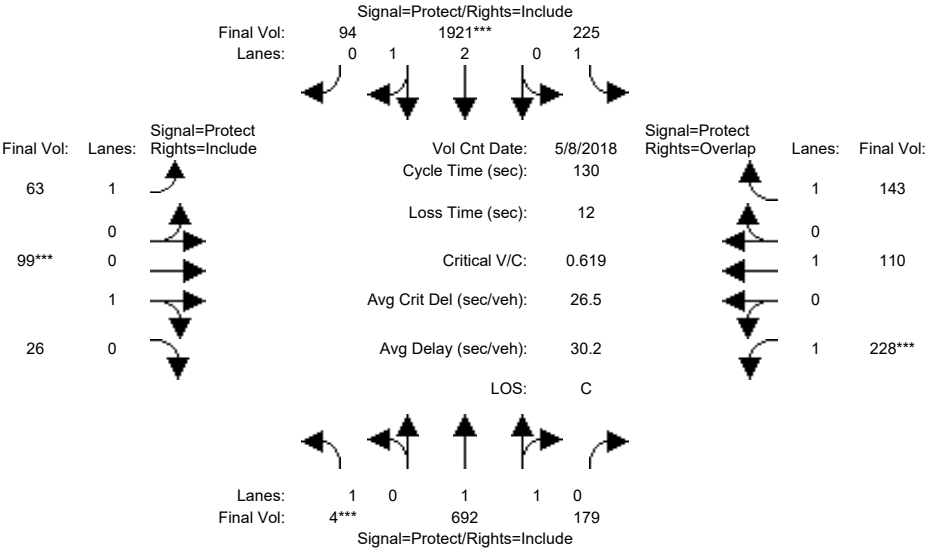
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	6	943	201	153	700	48	99	102	13	167	121	237
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	943	201	153	700	48	99	102	13	167	121	237
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	943	201	153	700	48	99	102	13	167	121	237
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	943	201	153	700	48	99	102	13	167	121	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	943	201	153	700	48	99	102	13	167	121	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	943	201	153	700	48	99	102	13	167	121	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	2.80	0.20	1.00	0.89	0.11	1.00	1.00	1.00
Final Sat.:	1750	3049	650	1750	5240	359	1750	1597	203	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.09	0.13	0.13	0.06	0.06	0.06	0.10	0.06	0.14
Crit Moves:		****		****				****		****		
Green Time:	24.2	65.6	65.6	18.6	60.0	60.0	14.3	13.6	13.6	20.3	19.5	38.0
Volume/Cap:	0.02	0.61	0.61	0.61	0.29	0.29	0.51	0.61	0.61	0.61	0.42	0.46
Uniform Del:	43.2	23.1	23.1	52.3	21.8	21.8	54.5	55.7	55.7	51.2	50.2	37.6
IncremntDel:	0.0	0.6	0.6	4.4	0.1	0.1	2.3	5.9	5.9	4.1	1.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	23.7	23.7	56.8	21.8	21.8	56.9	61.6	61.6	55.3	51.2	38.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	23.7	23.7	56.8	21.8	21.8	56.9	61.6	61.6	55.3	51.2	38.3
LOS by Move:	D	C	C	E+	C+	C+	E+	E	E	E+	D-	D+
HCM2kAvgQ:	0	16	16	6	6	6	5	6	6	8	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #41: Fair Oaks Ave & Duane Ave



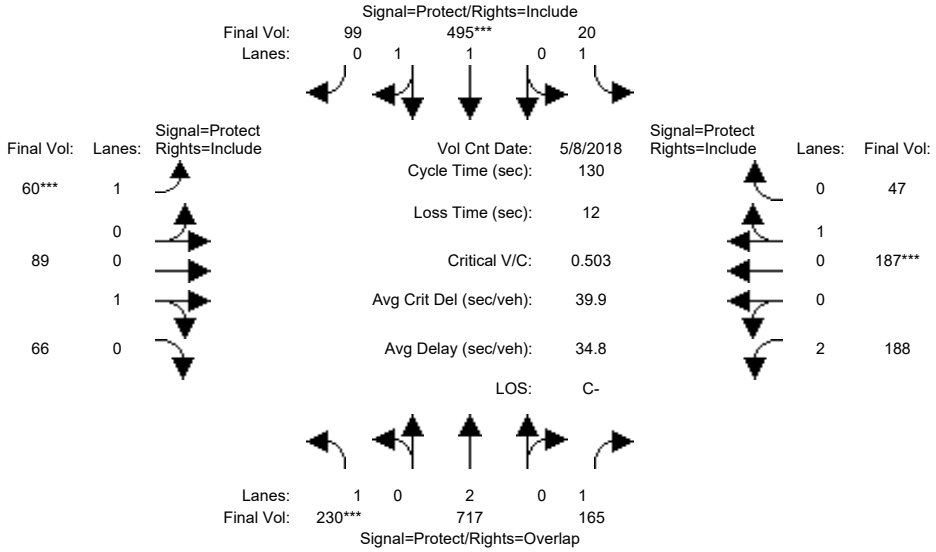
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	4	692	179	225	1921	94	63	99	26	228	110	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	692	179	225	1921	94	63	99	26	228	110	143
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	692	179	225	1921	94	63	99	26	228	110	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	692	179	225	1921	94	63	99	26	228	110	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	692	179	225	1921	94	63	99	26	228	110	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	692	179	225	1921	94	63	99	26	228	110	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.58	0.42	1.00	2.85	0.15	1.00	0.79	0.21	1.00	1.00	1.00
Final Sat.:	1750	2939	760	1750	5338	261	1750	1426	374	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.13	0.36	0.36	0.04	0.07	0.07	0.13	0.06	0.08
Crit Moves:	****				****			****			****	
Green Time:	7.0	50.7	50.7	27.7	71.4	71.4	16.3	13.8	13.8	25.8	23.3	51.0
Volume/Cap:	0.04	0.60	0.60	0.60	0.66	0.66	0.29	0.66	0.66	0.66	0.32	0.21
Uniform Del:	58.3	31.6	31.6	46.2	20.6	20.6	51.6	55.8	55.8	48.0	46.5	26.1
IncremntDel:	0.2	0.7	0.7	2.8	0.5	0.5	0.7	8.0	8.0	4.5	0.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	32.4	32.4	49.0	21.2	21.2	52.3	63.8	63.8	52.5	47.0	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	32.4	32.4	49.0	21.2	21.2	52.3	63.8	63.8	52.5	47.0	26.3
LOS by Move:	E+	C-	C-	D	C+	C+	D-	E	E	D-	D	C
HCM2kAvgQ:	0	14	14	9	19	19	3	6	6	10	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #42: Fair Oaks Ave & Arques Ave



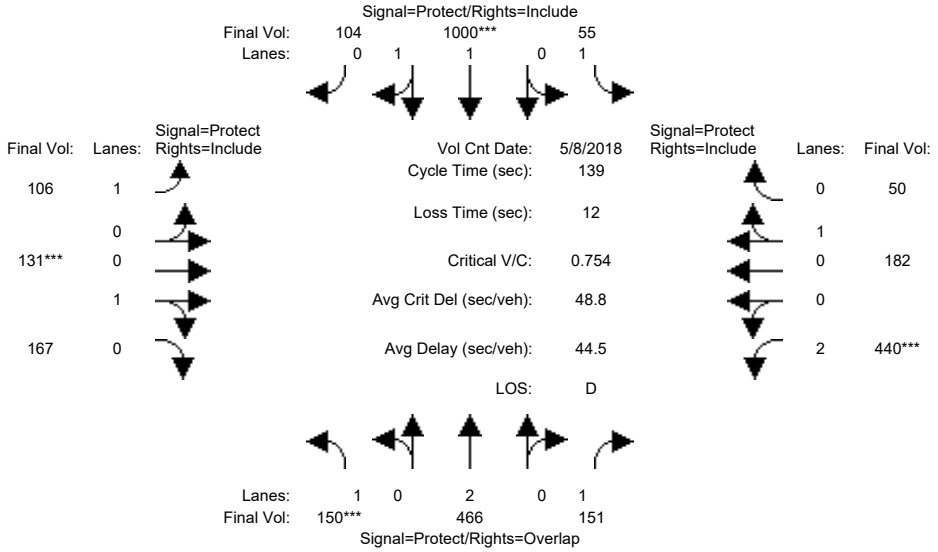
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	230	717	165	20	495	99	60	89	66	188	187	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	717	165	20	495	99	60	89	66	188	187	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	717	165	20	495	99	60	89	66	188	187	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	717	165	20	495	99	60	89	66	188	187	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	717	165	20	495	99	60	89	66	188	187	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	717	165	20	495	99	60	89	66	188	187	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.66	0.34	1.00	0.57	0.43	2.00	0.80	0.20
Final Sat.:	1750	3800	1750	1750	3083	617	1750	1034	766	3150	1438	362
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.09	0.01	0.16	0.16	0.03	0.09	0.09	0.06	0.13	0.13
Crit Moves:	****				****		****				****	
Green Time:	34.0	58.7	76.1	16.8	41.5	41.5	8.9	25.1	25.1	17.4	33.6	33.6
Volume/Cap:	0.50	0.42	0.16	0.09	0.50	0.50	0.50	0.45	0.45	0.45	0.50	0.50
Uniform Del:	40.8	24.1	12.3	49.9	35.9	35.9	58.4	46.3	46.3	51.9	41.1	41.1
IncremntDel:	0.9	0.2	0.1	0.2	0.3	0.3	3.4	0.9	0.9	0.8	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.7	24.2	12.4	50.1	36.2	36.2	61.8	47.2	47.2	52.6	41.9	41.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	24.2	12.4	50.1	36.2	36.2	61.8	47.2	47.2	52.6	41.9	41.9
LOS by Move:	D	C	B	D	D+	D+	E	D	D	D-	D	D
HCM2kAvgQ:	8	9	3	1	10	10	3	6	6	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #42: Fair Oaks Ave & Arques Ave



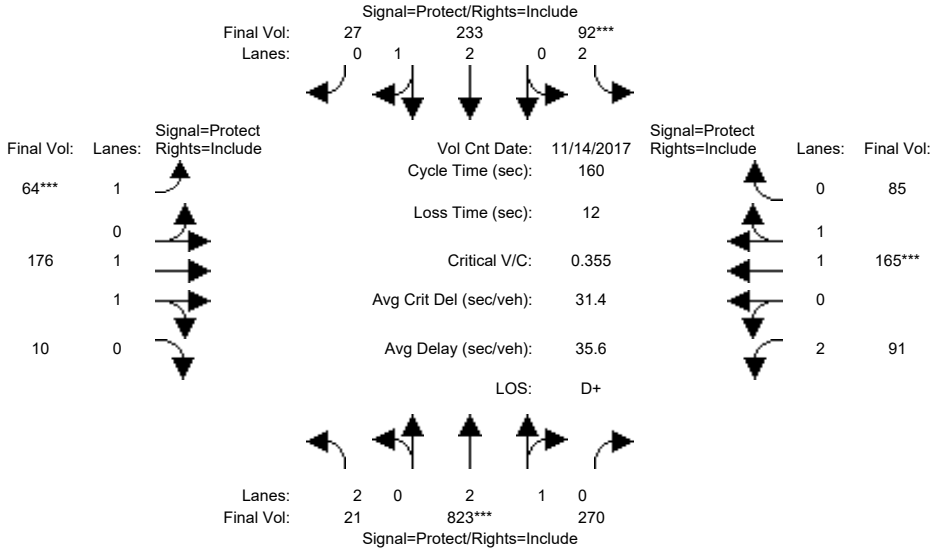
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	150	466	151	55	1000	104	106	131	167	440	182	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	466	151	55	1000	104	106	131	167	440	182	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	466	151	55	1000	104	106	131	167	440	182	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	466	151	55	1000	104	106	131	167	440	182	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	466	151	55	1000	104	106	131	167	440	182	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	466	151	55	1000	104	106	131	167	440	182	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	0.44	0.56	2.00	0.78	0.22
Final Sat.:	1750	3800	1750	1750	3351	349	1750	791	1009	3150	1412	388
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.09	0.03	0.30	0.30	0.06	0.17	0.17	0.14	0.13	0.13
Crit Moves:	****				****			****		****		
Green Time:	15.8	50.2	75.9	20.6	55.0	55.0	18.0	30.5	30.5	25.7	38.3	38.3
Volume/Cap:	0.75	0.34	0.16	0.21	0.75	0.75	0.47	0.75	0.75	0.75	0.47	0.47
Uniform Del:	59.7	32.4	15.7	52.1	36.2	36.2	56.1	50.7	50.7	53.6	41.9	41.9
IncremntDel:	15.1	0.1	0.1	0.4	2.3	2.3	1.5	8.0	8.0	5.6	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.8	32.5	15.8	52.5	38.5	38.5	57.6	58.8	58.8	59.2	42.6	42.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.8	32.5	15.8	52.5	38.5	38.5	57.6	58.8	58.8	59.2	42.6	42.6
LOS by Move:	E	C-	B	D-	D+	D+	E+	E+	E+	E+	D	D
HCM2kAvgQ:	7	7	3	2	22	22	5	14	14	11	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #43: Wolfe Rd & Arques Ave



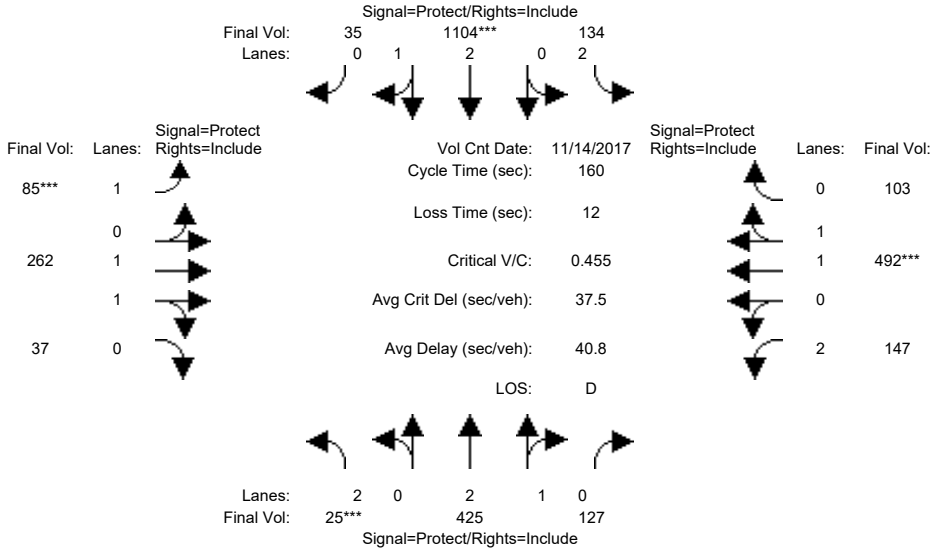
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	21	823	270	92	233	27	64	176	10	91	165	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	823	270	92	233	27	64	176	10	91	165	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	823	270	92	233	27	64	176	10	91	165	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	823	270	92	233	27	64	176	10	91	165	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	823	270	92	233	27	64	176	10	91	165	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	823	270	92	233	27	64	176	10	91	165	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	0.99	0.95
Lanes:	2.00	2.23	0.77	2.00	2.68	0.32	1.00	1.89	0.11	2.00	1.30	0.70
Final Sat.:	3150	4215	1383	3150	5018	581	1750	3501	199	3150	2441	1258
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.03	0.05	0.05	0.04	0.05	0.05	0.03	0.07	0.07
Crit Moves:		****		****			****				****	
Green Time:	41.6	87.9	87.9	13.2	59.5	59.5	16.5	27.6	27.6	19.3	30.4	30.4
Volume/Cap:	0.03	0.36	0.36	0.36	0.12	0.12	0.36	0.29	0.29	0.24	0.36	0.36
Uniform Del:	44.1	20.2	20.2	69.4	33.1	33.1	66.8	57.7	57.7	63.7	56.3	56.3
IncremntDel:	0.0	0.1	0.1	0.8	0.0	0.0	1.2	0.3	0.3	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.1	20.2	20.2	70.3	33.2	33.2	68.0	57.9	57.9	64.0	56.6	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	20.2	20.2	70.3	33.2	33.2	68.0	57.9	57.9	64.0	56.6	56.6
LOS by Move:	D	C+	C+	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	0	10	10	3	3	3	3	4	4	2	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #43: Wolfe Rd & Arques Ave



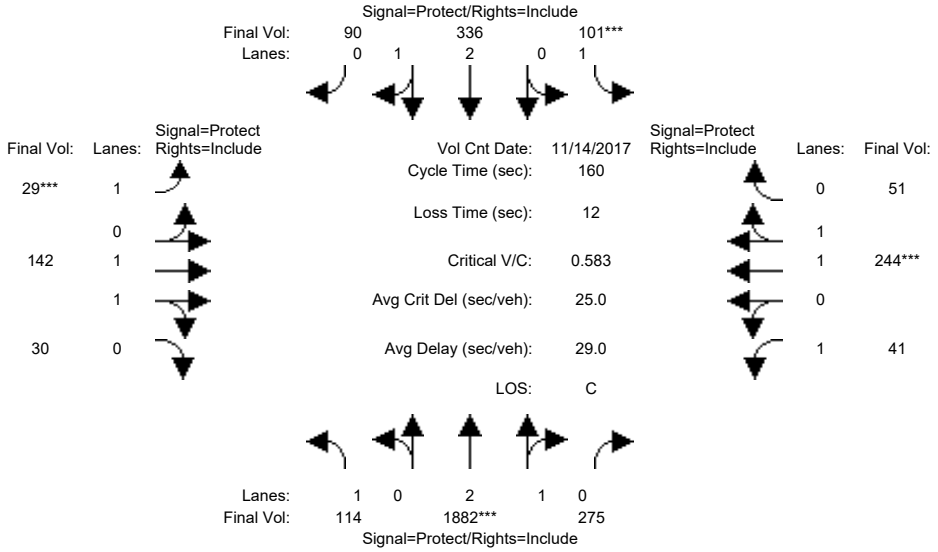
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	25	425	127	134	1104	35	85	262	37	147	492	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	425	127	134	1104	35	85	262	37	147	492	103
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	425	127	134	1104	35	85	262	37	147	492	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	425	127	134	1104	35	85	262	37	147	492	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	425	127	134	1104	35	85	262	37	147	492	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	425	127	134	1104	35	85	262	37	147	492	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.28	0.72	2.00	2.90	0.10	1.00	1.75	0.25	2.00	1.64	0.36
Final Sat.:	3150	4310	1288	3150	5428	172	1750	3242	458	3150	3059	640
Capacity Analysis Module:												
Vol/Sat:	0.01	0.10	0.10	0.04	0.20	0.20	0.05	0.08	0.08	0.05	0.16	0.16
Crit Moves:	****				****		****				****	
Green Time:	7.0	53.0	53.0	23.5	69.5	69.5	16.6	45.3	45.3	26.2	54.9	54.9
Volume/Cap:	0.18	0.30	0.30	0.29	0.47	0.47	0.47	0.29	0.29	0.29	0.47	0.47
Uniform Del:	73.7	39.7	39.7	60.8	32.1	32.1	67.6	44.7	44.7	58.7	41.1	41.1
IncremntDel:	0.6	0.1	0.1	0.3	0.1	0.1	1.9	0.2	0.2	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.4	39.8	39.8	61.2	32.3	32.3	69.5	44.8	44.8	59.0	41.4	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	39.8	39.8	61.2	32.3	32.3	69.5	44.8	44.8	59.0	41.4	41.4
LOS by Move:	E	D	D	E	C-	C-	E	D	D	E+	D	D
HCM2kAvgQ:	1	6	6	3	13	13	4	5	5	4	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #44: Wolfe Rd & Kifer Rd



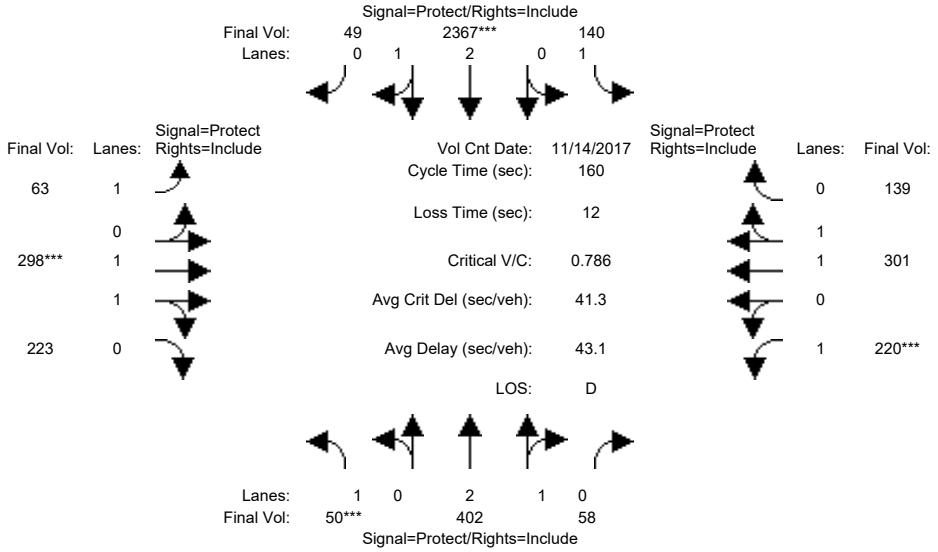
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	114	1882	275	101	336	90	29	142	30	41	244	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	1882	275	101	336	90	29	142	30	41	244	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	1882	275	101	336	90	29	142	30	41	244	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	1882	275	101	336	90	29	142	30	41	244	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	1882	275	101	336	90	29	142	30	41	244	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	1882	275	101	336	90	29	142	30	41	244	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	2.60	0.40	1.00	2.34	0.66	1.00	1.64	0.36	1.00	1.64	0.36
Final Sat.:	1750	4885	714	1750	4415	1183	1750	3054	645	1750	3060	640
Capacity Analysis Module:												
Vol/Sat:	0.07	0.39	0.39	0.06	0.08	0.08	0.02	0.05	0.05	0.02	0.08	0.08
Crit Moves:		****		****			****				****	
Green Time:	55.1	104	103.9	15.6	64.4	64.4	7.0	16.8	16.8	11.7	21.5	21.5
Volume/Cap:	0.19	0.59	0.59	0.59	0.19	0.19	0.38	0.44	0.44	0.32	0.59	0.59
Uniform Del:	36.8	16.0	16.0	69.2	30.9	30.9	74.4	67.2	67.2	70.3	65.1	65.1
IncremntDel:	0.2	0.3	0.3	5.5	0.0	0.0	3.1	0.8	0.8	1.4	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.9	16.3	16.3	74.7	31.0	31.0	77.5	68.0	68.0	71.8	67.1	67.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	16.3	16.3	74.7	31.0	31.0	77.5	68.0	68.0	71.8	67.1	67.1
LOS by Move:	D+	B	B	E	C	C	E-	E	E	E	E	E
HCM2kAvgQ:	4	20	20	5	4	4	1	4	4	2	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #44: Wolfe Rd & Kifer Rd



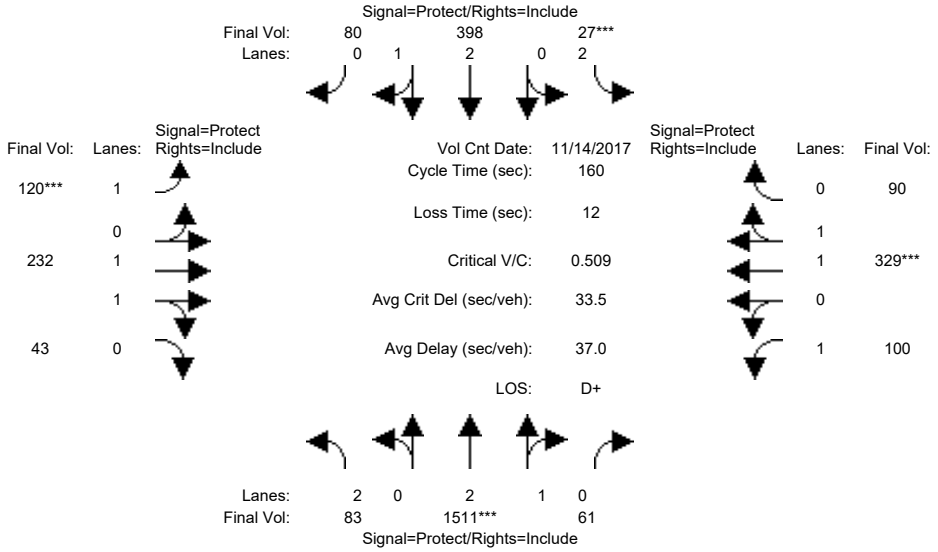
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	50	402	58	140	2367	49	63	298	223	220	301	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	402	58	140	2367	49	63	298	223	220	301	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	402	58	140	2367	49	63	298	223	220	301	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	402	58	140	2367	49	63	298	223	220	301	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	402	58	140	2367	49	63	298	223	220	301	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	402	58	140	2367	49	63	298	223	220	301	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.61	0.39	1.00	2.94	0.06	1.00	1.12	0.88	1.00	1.35	0.65
Final Sat.:	1750	4893	706	1750	5486	114	1750	2115	1583	1750	2530	1168
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.08	0.43	0.43	0.04	0.14	0.14	0.13	0.12	0.12
Crit Moves:	****				****			****		****		
Green Time:	7.0	47.7	47.7	46.4	87.1	87.1	14.5	28.5	28.5	25.4	39.4	39.4
Volume/Cap:	0.65	0.28	0.28	0.28	0.79	0.79	0.40	0.79	0.79	0.79	0.48	0.48
Uniform Del:	75.3	42.9	42.9	43.8	29.2	29.2	68.6	62.9	62.9	64.8	51.6	51.6
IncremntDel:	18.4	0.1	0.1	0.3	1.5	1.5	1.6	6.5	6.5	14.3	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	43.0	43.0	44.1	30.7	30.7	70.3	69.5	69.5	79.1	52.0	52.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	43.0	43.0	44.1	30.7	30.7	70.3	69.5	69.5	79.1	52.0	52.0
LOS by Move:	F	D	D	D	C	C	E	E	E	E-	D-	D-
HCM2kAvgQ:	3	6	6	5	32	32	3	13	13	12	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #45: Wolfe Rd & Reed Ave



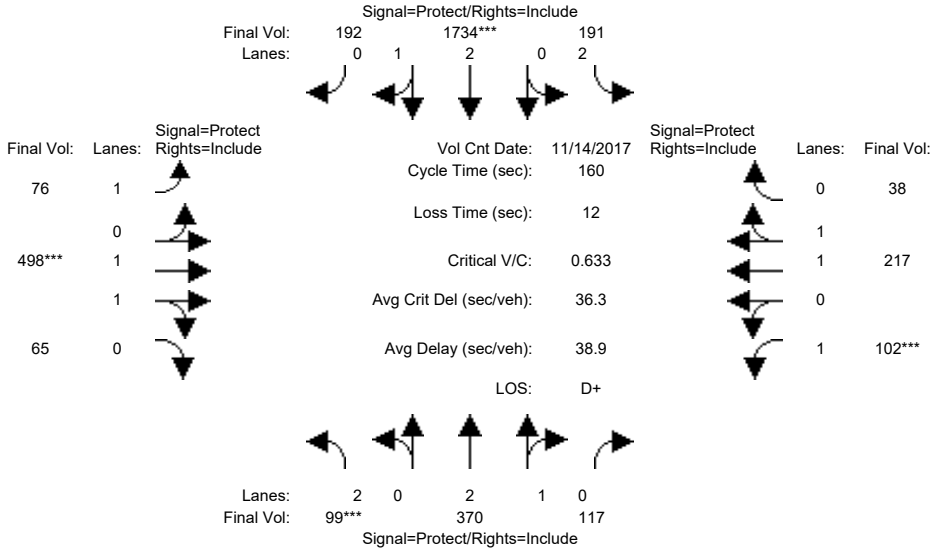
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	1511	61	27	398	80	120	232	43	100	329	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1511	61	27	398	80	120	232	43	100	329	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1511	61	27	398	80	120	232	43	100	329	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1511	61	27	398	80	120	232	43	100	329	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1511	61	27	398	80	120	232	43	100	329	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1511	61	27	398	80	120	232	43	100	329	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.88	0.12	2.00	2.48	0.52	1.00	1.68	0.32	1.00	1.56	0.44
Final Sat.:	3150	5382	217	3150	4662	937	1750	3121	578	1750	2905	795
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.09	0.09	0.07	0.07	0.07	0.06	0.11	0.11
Crit Moves:		****			****			****			****	
Green Time:	31.4	85.6	85.6	7.0	61.2	61.2	20.9	31.3	31.3	24.1	34.5	34.5
Volume/Cap:	0.13	0.52	0.52	0.20	0.22	0.22	0.52	0.38	0.38	0.38	0.52	0.52
Uniform Del:	53.1	24.1	24.1	73.8	33.3	33.3	64.9	55.9	55.9	61.2	55.5	55.5
IncremntDel:	0.1	0.2	0.2	0.7	0.1	0.1	2.2	0.3	0.3	0.9	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.2	24.2	24.2	74.5	33.4	33.4	67.2	56.2	56.2	62.1	56.1	56.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.2	24.2	24.2	74.5	33.4	33.4	67.2	56.2	56.2	62.1	56.1	56.1
LOS by Move:	D-	C	C	E	C-	C-	E	E+	E+	E	E+	E+
HCM2kAvgQ:	2	16	16	1	5	5	6	6	6	5	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #45: Wolfe Rd & Reed Ave



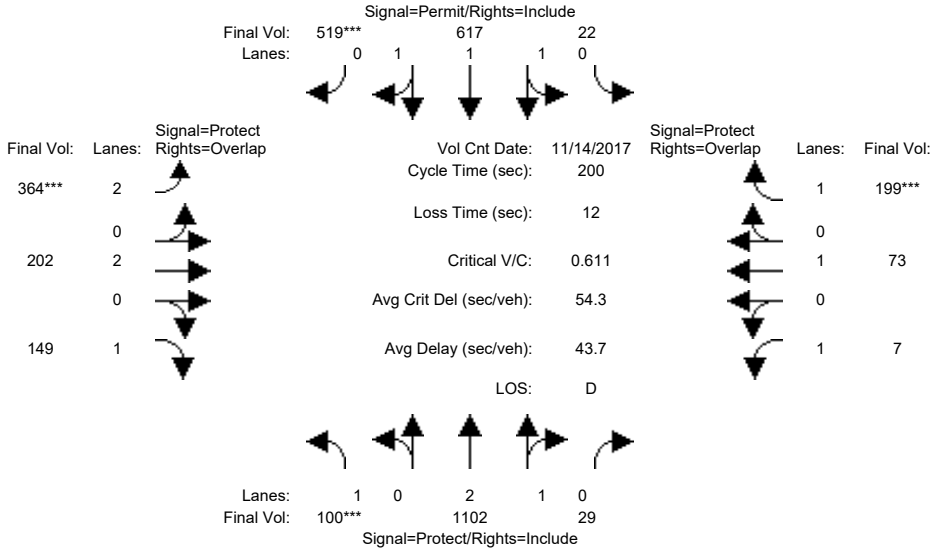
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	370	117	191	1734	192	76	498	65	102	217	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	370	117	191	1734	192	76	498	65	102	217	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	370	117	191	1734	192	76	498	65	102	217	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	370	117	191	1734	192	76	498	65	102	217	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	370	117	191	1734	192	76	498	65	102	217	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	370	117	191	1734	192	76	498	65	102	217	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	2.00	2.25	0.75	2.00	2.69	0.31	1.00	1.76	0.24	1.00	1.69	0.31
Final Sat.:	3150	4253	1345	3150	5041	558	1750	3273	427	1750	3148	551
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.06	0.34	0.34	0.04	0.15	0.15	0.06	0.07	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.9	55.9	55.9	38.9	86.9	86.9	20.6	38.4	38.4	14.7	32.5	32.5
Volume/Cap:	0.63	0.25	0.25	0.25	0.63	0.63	0.34	0.63	0.63	0.63	0.34	0.34
Uniform Del:	74.6	37.1	37.1	48.7	25.5	25.5	63.4	54.5	54.5	70.0	54.5	54.5
IncremntDel:	8.2	0.1	0.1	0.2	0.4	0.4	0.9	1.5	1.5	8.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.8	37.2	37.2	48.9	25.9	25.9	64.3	56.0	56.0	78.0	54.8	54.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.8	37.2	37.2	48.9	25.9	25.9	64.3	56.0	56.0	78.0	54.8	54.8
LOS by Move:	F	D+	D+	D	C	C	E	E+	E+	E-	D-	D-
HCM2kAvgQ:	3	5	5	4	21	21	4	12	12	5	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #46: Wolfe Rd & Fremont Ave



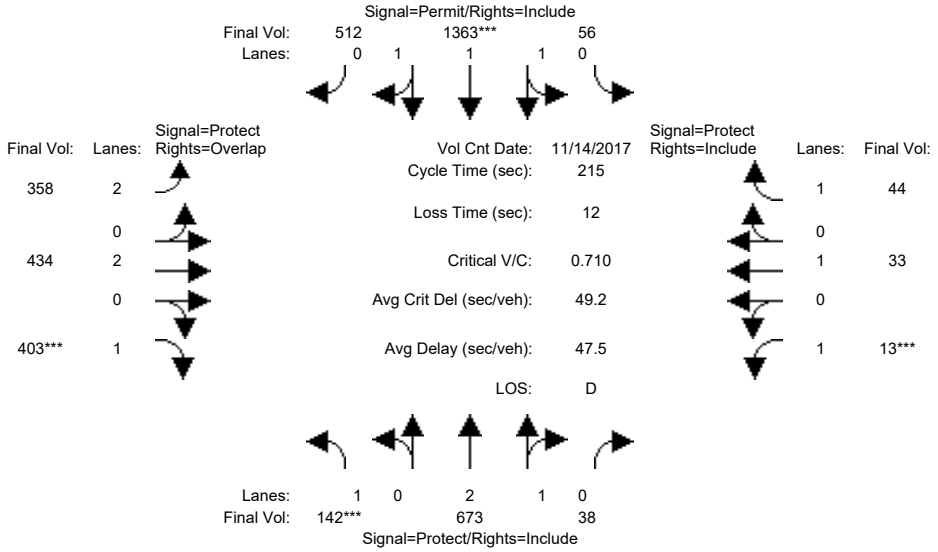
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	100	1102	29	22	617	519	364	202	149	7	73	199
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	1102	29	22	617	519	364	202	149	7	73	199
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	1102	29	22	617	519	364	202	149	7	73	199
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	1102	29	22	617	519	364	202	149	7	73	199
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1102	29	22	617	519	364	202	149	7	73	199
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	1102	29	22	617	519	364	202	149	7	73	199
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.92	0.08	0.07	1.93	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5456	144	128	3593	1800	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.20	0.17	0.17	0.29	0.12	0.05	0.09	0.00	0.04	0.11
Crit Moves:	****					****	****					****
Green Time:	18.7	113	113.0	94.3	94.3	94.3	37.8	45.2	63.9	29.8	37.2	37.2
Volume/Cap:	0.61	0.36	0.36	0.36	0.36	0.61	0.61	0.24	0.27	0.03	0.21	0.61
Uniform Del:	87.2	23.7	23.7	33.7	33.7	39.2	74.4	63.3	50.6	72.7	68.9	74.8
IncremntDel:	6.6	0.1	0.1	0.1	0.1	0.6	1.9	0.1	0.3	0.0	0.3	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.8	23.8	23.8	33.8	33.8	39.8	76.2	63.4	50.9	72.8	69.2	78.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.8	23.8	23.8	33.8	33.8	39.8	76.2	63.4	50.9	72.8	69.2	78.2
LOS by Move:	F	C	C	C-	C-	D	E-	E	D	E	E	E-
HCM2kAvgQ:	6	12	12	12	12	24	12	5	7	0	4	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #46: Wolfe Rd & Fremont Ave



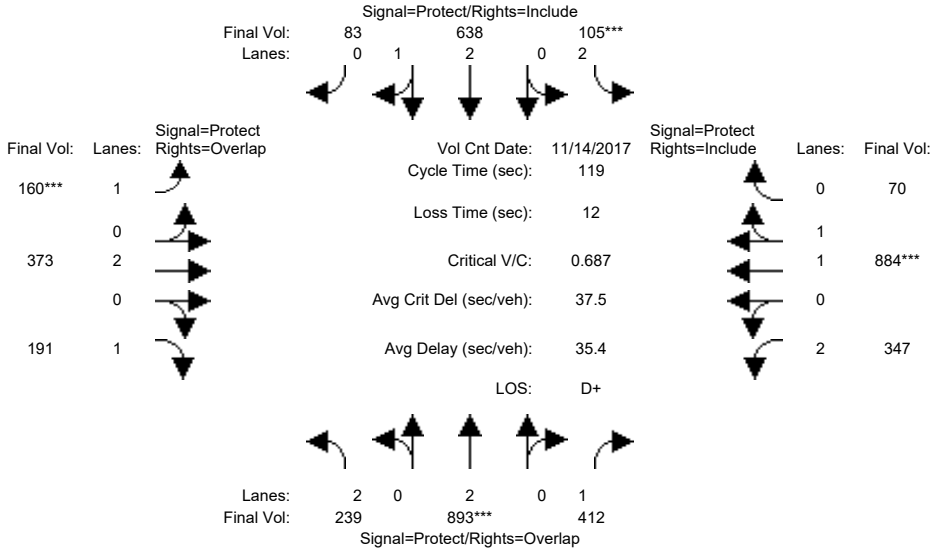
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	142	673	38	56	1363	512	358	434	403	13	33	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	142	673	38	56	1363	512	358	434	403	13	33	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	142	673	38	56	1363	512	358	434	403	13	33	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	142	673	38	56	1363	512	358	434	403	13	33	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	673	38	56	1363	512	358	434	403	13	33	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	673	38	56	1363	512	358	434	403	13	33	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.83	0.17	0.09	2.10	0.81	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5300	299	159	3882	1458	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.13	0.35	0.35	0.35	0.11	0.11	0.23	0.01	0.02	0.03
Crit Moves:	****				****				****	****		
Green Time:	24.0	128	127.9	103.9	104	103.9	53.3	68.1	92.1	7.0	21.8	21.8
Volume/Cap:	0.73	0.21	0.21	0.73	0.73	0.73	0.46	0.36	0.54	0.23	0.17	0.25
Uniform Del:	92.3	20.2	20.2	44.3	44.3	44.3	68.6	56.6	45.6	101.4	88.3	89.0
IncremntDel:	12.8	0.0	0.0	1.0	1.0	1.0	0.4	0.2	0.8	2.0	0.4	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	105.1	20.3	20.3	45.3	45.3	45.3	69.0	56.8	46.4	103.4	88.7	89.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.1	20.3	20.3	45.3	45.3	45.3	69.0	56.8	46.4	103.4	88.7	89.8
LOS by Move:	F	C+	C+	D	D	D	E	E+	D	F	F	F
HCM2kAvgQ:	10	7	7	34	34	34	11	10	20	1	2	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #47: Wolfe Rd & Homestead Rd



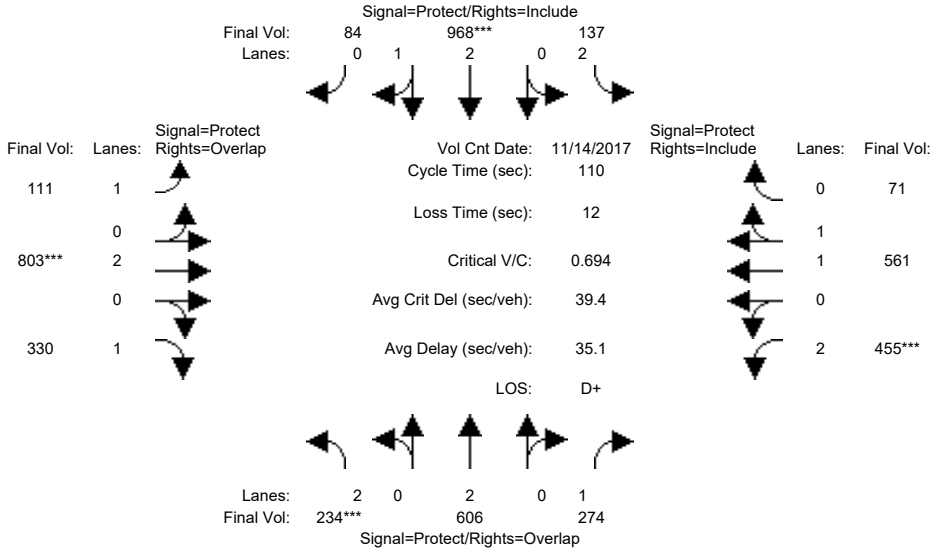
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	239	893	412	105	638	83	160	373	191	347	884	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	893	412	105	638	83	160	373	191	347	884	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	893	412	105	638	83	160	373	191	347	884	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	893	412	105	638	83	160	373	191	347	884	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	893	412	105	638	83	160	373	191	347	884	70
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	893	412	105	638	83	160	373	191	347	884	70
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.64	0.36	1.00	2.00	1.00	2.00	1.85	0.15
Final Sat.:	3150	3800	1750	3150	4954	645	1750	3800	1750	3150	3428	271
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.24	0.03	0.13	0.13	0.09	0.10	0.11	0.11	0.26	0.26
Crit Moves:		****		****			****				****	
Green Time:	17.5	40.2	71.8	7.0	29.7	29.7	15.6	28.2	45.7	31.6	44.1	44.1
Volume/Cap:	0.52	0.70	0.39	0.57	0.52	0.52	0.70	0.41	0.28	0.41	0.70	0.70
Uniform Del:	46.8	34.1	12.2	54.5	38.4	38.4	49.4	38.4	25.4	36.1	31.7	31.7
IncremntDel:	1.0	1.7	0.2	4.1	0.3	0.3	8.9	0.3	0.2	0.3	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.8	35.8	12.5	58.6	38.8	38.8	58.3	38.8	25.6	36.4	33.3	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	35.8	12.5	58.6	38.8	38.8	58.3	38.8	25.6	36.4	33.3	33.3
LOS by Move:	D	D+	B	E+	D+	D+	E+	D+	C	D+	C-	C-
HCM2kAvgQ:	5	14	8	2	7	7	6	6	5	6	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #47: Wolfe Rd & Homestead Rd



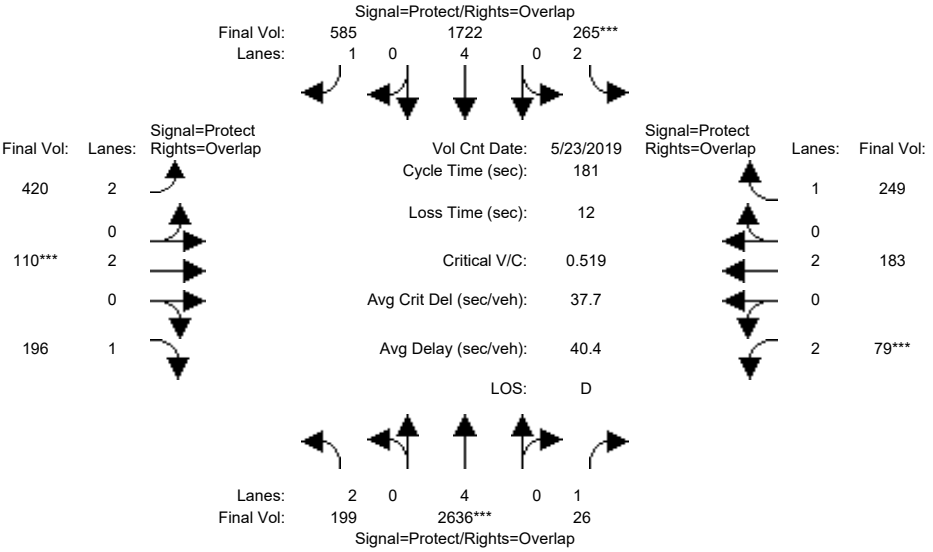
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	234	606	274	137	968	84	111	803	330	455	561	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	606	274	137	968	84	111	803	330	455	561	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	606	274	137	968	84	111	803	330	455	561	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	606	274	137	968	84	111	803	330	455	561	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	606	274	137	968	84	111	803	330	455	561	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	606	274	137	968	84	111	803	330	455	561	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.75	0.25	1.00	2.00	1.00	2.00	1.77	0.23
Final Sat.:	3150	3800	1750	3150	5152	447	1750	3800	1750	3150	3284	416
Capacity Analysis Module:												
Vol/Sat:	0.07	0.16	0.16	0.04	0.19	0.19	0.06	0.21	0.19	0.14	0.17	0.17
Crit Moves:	****				****			****			****	
Green Time:	11.8	29.7	52.6	11.9	29.8	29.8	15.3	33.5	45.3	22.9	41.1	41.1
Volume/Cap:	0.69	0.59	0.33	0.40	0.69	0.69	0.46	0.69	0.46	0.69	0.46	0.46
Uniform Del:	47.4	34.9	17.7	45.8	36.0	36.0	43.5	33.7	23.5	40.3	26.0	26.0
IncremntDel:	6.1	0.9	0.2	0.8	1.4	1.4	1.4	1.8	0.5	3.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.5	35.8	18.0	46.6	37.4	37.4	44.9	35.6	23.9	43.5	26.3	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.5	35.8	18.0	46.6	37.4	37.4	44.9	35.6	23.9	43.5	26.3	26.3
LOS by Move:	D-	D+	B	D	D+	D+	D	D+	C	D	C	C
HCM2kAvgQ:	5	9	6	2	10	10	4	12	8	9	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



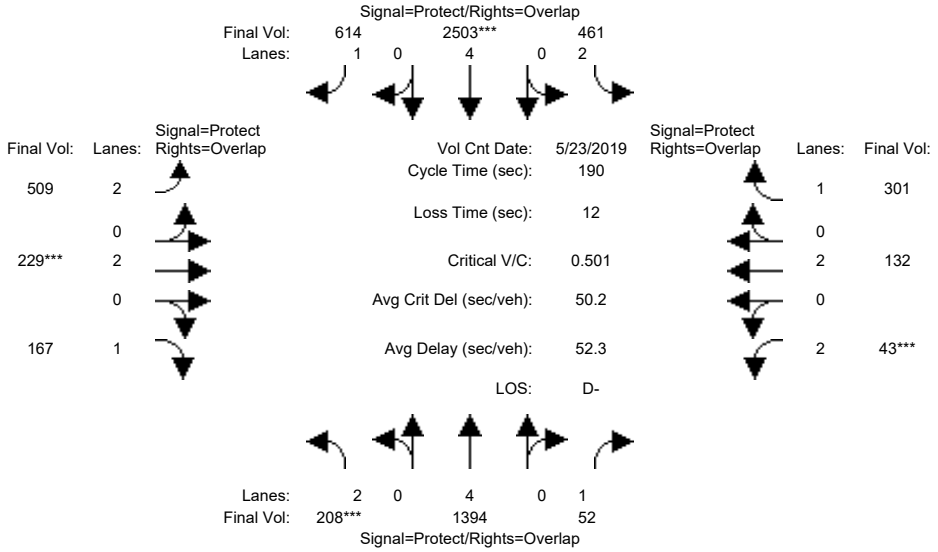
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	199	2636	26	265	1722	585	420	110	196	79	183	249
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	2636	26	265	1722	585	420	110	196	79	183	249
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	2636	26	265	1722	585	420	110	196	79	183	249
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	2636	26	265	1722	585	420	110	196	79	183	249
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	2636	26	265	1722	585	420	110	196	79	183	249
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	2636	26	265	1722	585	420	110	196	79	183	249
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.01	0.08	0.23	0.33	0.13	0.03	0.11	0.03	0.05	0.14
Crit Moves:		****		****				****		****		
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	0.66	0.72	0.03	0.75	0.46	0.53	1.01	0.13	0.36	0.43	0.34	0.56
Uniform Del:	79.1	37.5	19.6	77.9	29.6	18.8	78.6	57.1	48.2	82.4	69.8	58.5
IncremntDel:	5.6	0.7	0.0	8.6	0.1	0.5	47.8	0.1	0.4	1.6	0.4	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.7	30.5	13.8	86.5	23.0	9.9	126.4	57.2	48.6	84.0	70.2	60.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.7	30.5	13.8	86.5	23.0	9.9	126.4	57.2	48.6	84.0	70.2	60.1
LOS by Move:	F	C	B	F	C+	A	F	E+	D	F	E	E
HCM2kAvgQ:	6	23	0	10	11	10	19	2	9	3	5	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



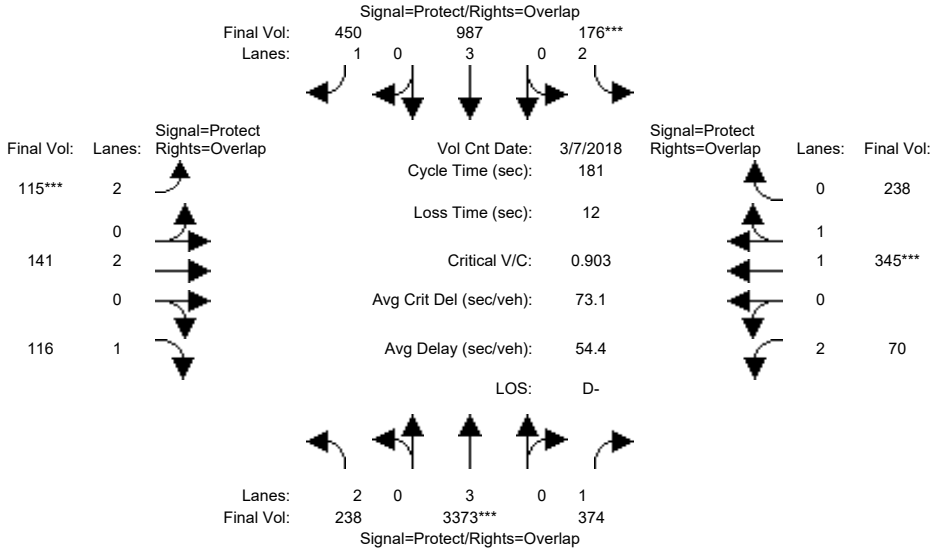
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	208	1394	52	461	2503	614	509	229	167	43	132	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1394	52	461	2503	614	509	229	167	43	132	301
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	1394	52	461	2503	614	509	229	167	43	132	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1394	52	461	2503	614	509	229	167	43	132	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1394	52	461	2503	614	509	229	167	43	132	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1394	52	461	2503	614	509	229	167	43	132	301
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.18	0.03	0.15	0.33	0.35	0.16	0.06	0.10	0.01	0.03	0.17
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	0.62	0.49	0.07	0.88	0.76	0.57	0.89	0.21	0.25	0.26	0.23	0.54
Uniform Del:	81.3	45.6	32.2	77.4	45.4	21.7	76.0	52.2	39.4	86.4	70.7	53.2
IncremntDel:	3.7	0.1	0.0	15.8	1.1	0.7	16.2	0.1	0.2	0.8	0.2	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.0	42.2	27.9	93.1	46.5	22.5	92.2	52.3	39.6	87.3	70.9	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	42.2	27.9	93.1	46.5	22.5	92.2	52.3	39.6	87.3	70.9	54.3
LOS by Move:	F	D	C	F	D	C+	F	D-	D	F	E	D-
HCM2kAvgQ:	7	13	1	18	31	22	20	5	7	2	3	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #51: Lawrence Expwy & Kifer Rd



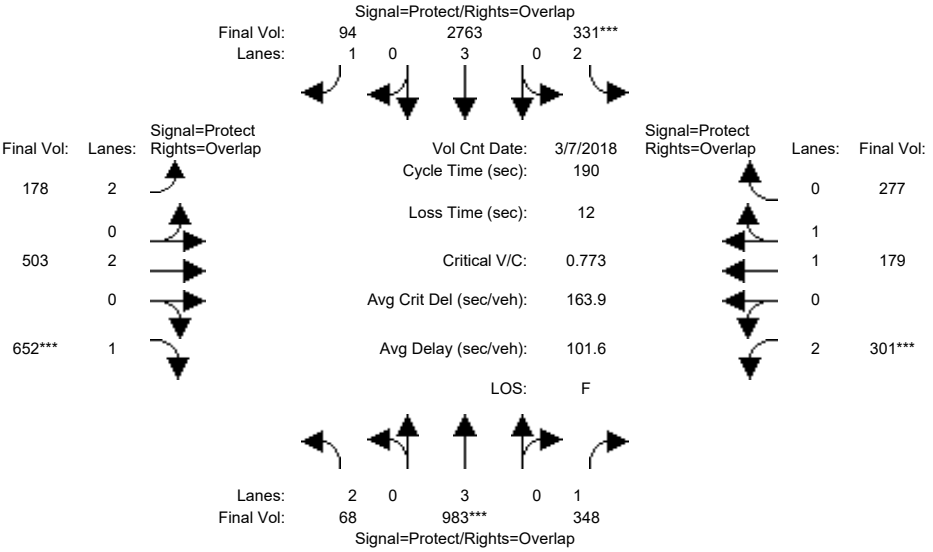
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	238	3877	374	176	1134	450	115	141	116	70	345	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	3877	374	176	1134	450	115	141	116	70	345	238
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	3877	374	176	1134	450	115	141	116	70	345	238
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	238	3373	374	176	987	450	115	141	116	70	345	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	3373	374	176	987	450	115	141	116	70	345	238
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	3373	374	176	987	450	115	141	116	70	345	238
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.94
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.16	0.84
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2173	1499
Capacity Analysis Module:												
Vol/Sat:	0.08	0.59	0.21	0.06	0.17	0.26	0.04	0.04	0.07	0.02	0.16	0.16
Crit Moves:		****		****			****				****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	0.54	1.06	0.35	0.59	0.34	0.44	0.52	0.23	0.22	0.37	1.07	0.65
Uniform Del:	72.5	40.0	16.8	78.6	25.8	21.0	81.1	66.5	47.7	81.8	77.1	61.6
IncremntDel:	1.4	34.9	0.2	3.1	0.1	0.3	2.1	0.2	0.2	1.2	58.1	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.9	61.6	9.1	81.7	19.3	13.1	83.2	66.7	47.9	83.1	135	63.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.9	61.6	9.1	81.7	19.3	13.1	83.2	66.7	47.9	83.1	135	63.4
LOS by Move:	E	E	A	F	B-	B	F	E	D	F	F	E
HCM2kAvgQ:	7	66	5	6	7	9	4	3	5	2	21	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #51: Lawrence Expwy & Kifer Rd



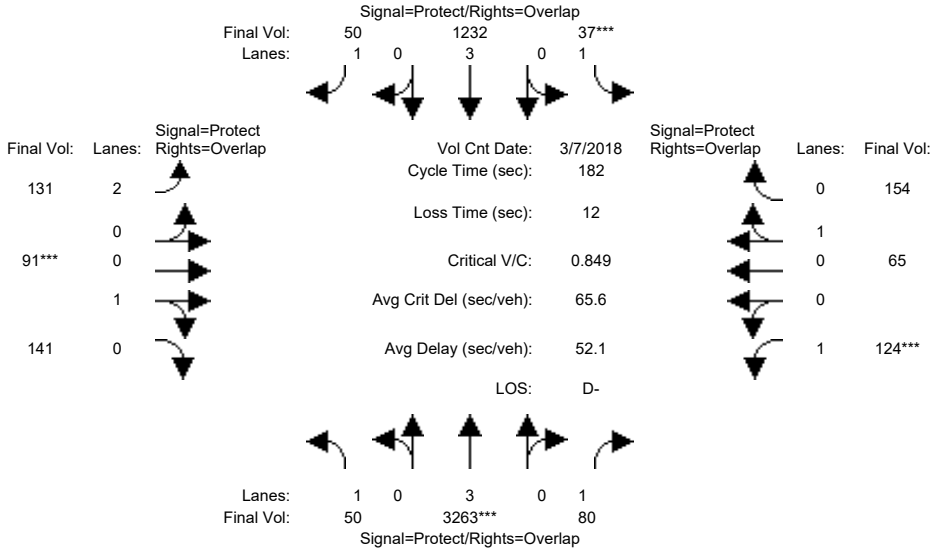
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	68	1229	348	331	3497	94	178	503	652	301	179	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1229	348	331	3497	94	178	503	652	301	179	277
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	1229	348	331	3497	94	178	503	652	301	179	277
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	983	348	331	2763	94	178	503	652	301	179	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	983	348	331	2763	94	178	503	652	301	179	277
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	983	348	331	2763	94	178	503	652	301	179	277
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.17	0.20	0.11	0.48	0.05	0.06	0.13	0.37	0.10	0.09	0.16
Crit Moves:		****		****					****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	0.46	0.39	0.35	0.74	0.89	0.09	0.68	0.76	1.69	0.84	0.46	0.46
Uniform Del:	88.2	35.1	22.9	78.2	38.6	14.1	84.6	74.8	74.1	82.4	66.3	48.2
IncremntDel:	2.3	0.1	0.2	6.6	3.7	0.0	7.0	5.2	321.4	15.6	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.4	54.1	42.5	93.4	72.8	29.8	91.7	80.0	395.4	98.0	66.7	48.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.4	54.1	42.5	93.4	72.8	29.8	91.7	80.0	395.4	98.0	66.7	48.6
LOS by Move:	F	D-	D	F	E	C	F	E-	F	F	E	D
HCM2kAvgQ:	2	16	18	13	53	4	6	14	75	11	9	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #53: Lawrence Expwy & Cabrillo Ave



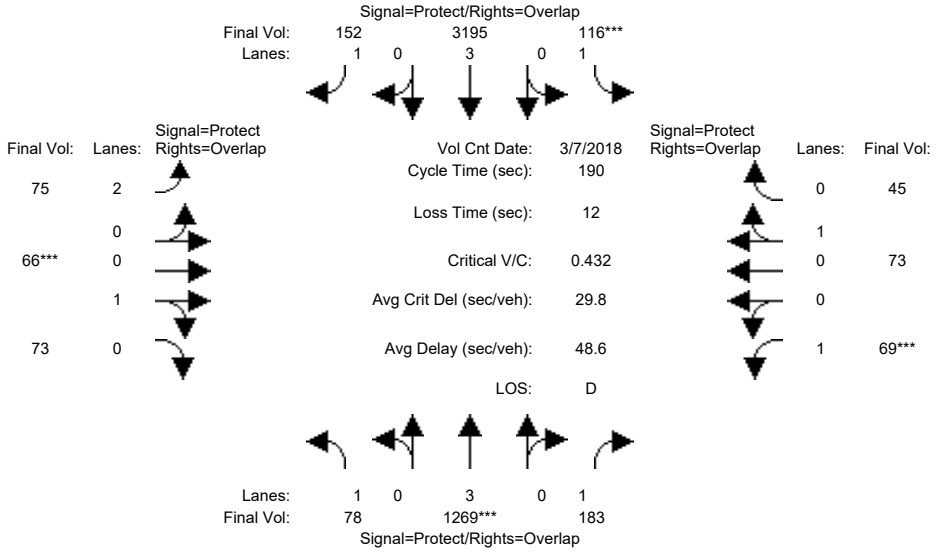
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	11	107	107	11	107	107	15	25	25	15	25	25
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	50	3751	80	37	1416	50	131	91	141	124	65	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	3751	80	37	1416	50	131	91	141	124	65	154
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	3751	80	37	1416	50	131	91	141	124	65	154
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	3263	80	37	1232	50	131	91	141	124	65	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	3263	80	37	1232	50	131	91	141	124	65	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	3263	80	37	1232	50	131	91	141	124	65	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.95	0.95	0.92	0.95	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.39	0.61	1.00	0.30	0.70
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	706	1094	1750	534	1266
Capacity Analysis Module:												
Vol/Sat:	0.03	0.57	0.05	0.02	0.22	0.03	0.04	0.13	0.13	0.07	0.12	0.12
Crit Moves:		****		****				****		****		
Green Time:	10.9	107	122.3	11.1	108	123.2	15.4	25.7	36.6	15.5	25.3	36.4
Volume/Cap:	0.48	0.98	0.07	0.35	0.36	0.04	0.49	0.91	0.64	0.83	0.88	0.61
Uniform Del:	82.8	36.3	10.3	82.0	19.3	9.8	79.6	77.0	66.7	82.0	76.8	66.3
IncremntDel:	3.4	10.6	0.0	2.0	0.1	0.0	1.4	34.1	3.9	30.9	27.2	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.37	1.57	1.00	0.59	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	86.2	60.4	16.1	83.9	11.5	3.4	81.0	111	70.5	112.9	104	69.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.2	60.4	16.1	83.9	11.5	3.4	81.0	111	70.5	112.9	104	69.3
LOS by Move:	F	E	B	F	B+	A	F	F	E	F	F	E
HCM2kAvgQ:	3	64	3	2	7	0	5	16	13	9	15	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #53: Lawrence Expwy & Cabrillo Ave



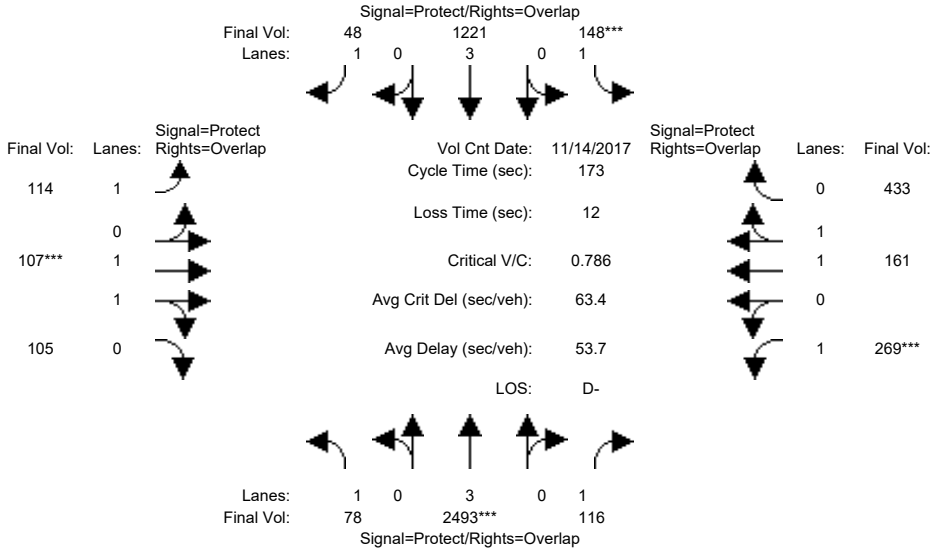
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	107	107	18	111	111	12	30	30	13	31	31
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	78	1586	183	116	4044	152	75	66	73	69	73	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	1586	183	116	4044	152	75	66	73	69	73	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	1586	183	116	4044	152	75	66	73	69	73	45
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	1269	183	116	3195	152	75	66	73	69	73	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1269	183	116	3195	152	75	66	73	69	73	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1269	183	116	3195	152	75	66	73	69	73	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.96	0.96	0.92	0.97	0.97
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.48	0.52	1.00	0.62	0.38
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	863	955	1750	1138	702
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.10	0.07	0.56	0.09	0.02	0.08	0.08	0.04	0.06	0.06
Crit Moves:		****		****				****		****		
Green Time:	13.8	107	120.4	17.9	111	122.7	11.8	29.6	43.4	13.5	30.8	48.7
Volume/Cap:	0.61	0.40	0.17	0.70	0.96	0.13	0.38	0.49	0.33	0.55	0.40	0.25
Uniform Del:	85.5	23.4	14.2	83.5	37.5	13.1	85.6	73.3	61.2	85.3	71.3	56.1
IncremntDel:	8.6	0.1	0.1	12.9	8.3	0.1	1.3	1.3	0.5	5.4	0.9	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.66	0.49	1.00	1.36	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	94.2	15.4	7.0	96.4	59.5	19.6	86.9	74.6	61.7	90.7	72.1	56.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	94.2	15.4	7.0	96.4	59.5	19.6	86.9	74.6	61.7	90.7	72.1	56.4
LOS by Move:	F	B	A	F	E+	B-	F	E	E	F	E	E+
HCM2kAvgQ:	5	8	2	7	62	5	3	8	7	5	7	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #54: Lawrence Expwy & Benton St



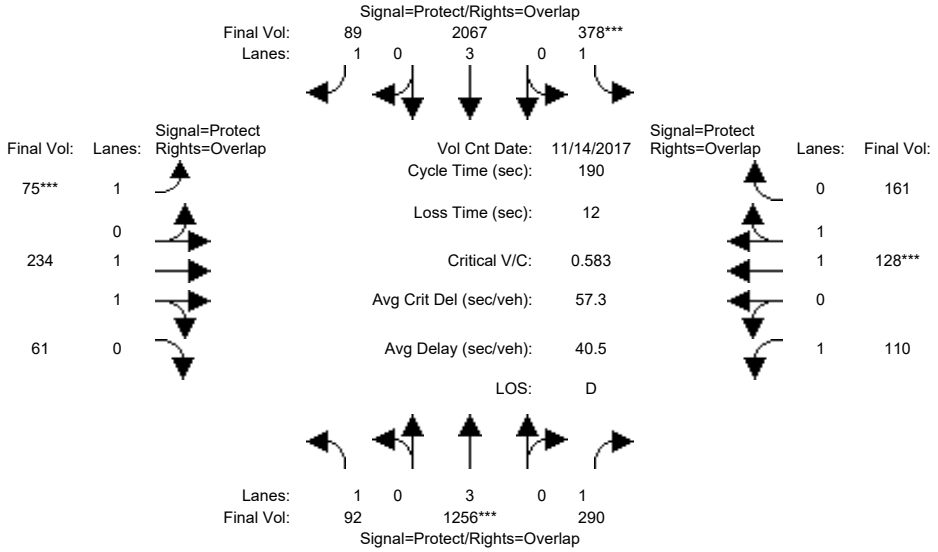
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	16	86	86	19	89	89	19	21	21	25	27	27
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	78	2865	116	148	1404	48	114	107	105	269	161	433
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	2865	116	148	1404	48	114	107	105	269	161	433
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	2865	116	148	1404	48	114	107	105	269	161	433
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	2493	116	148	1221	48	114	107	105	269	161	433
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	2493	116	148	1221	48	114	107	105	269	161	433
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	2493	116	148	1221	48	114	107	105	269	161	433
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	1899	1800	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.44	0.07	0.08	0.21	0.03	0.07	0.06	0.06	0.15	0.08	0.25
Crit Moves:		****		****				****		****		
Green Time:	15.7	86.0	111.0	18.6	89.0	107.8	18.8	20.7	36.4	25.0	27.2	45.8
Volume/Cap:	0.49	0.88	0.10	0.79	0.42	0.04	0.60	0.47	0.28	1.06	0.54	0.93
Uniform Del:	74.8	38.9	11.9	75.3	25.9	12.6	73.5	71.0	57.3	74.0	67.1	62.1
IncremntDel:	2.4	3.5	0.0	19.4	0.1	0.0	5.2	0.8	0.2	74.5	0.5	21.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.24	1.48	1.00	0.74	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	77.2	51.6	17.7	94.7	19.4	6.5	78.7	71.8	57.5	148.5	67.7	83.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.2	51.6	17.7	94.7	19.4	6.5	78.7	71.8	57.5	148.5	67.7	83.3
LOS by Move:	E-	D-	B	F	B-	A	E-	E	E+	F	E	F
HCM2kAvgQ:	4	39	4	8	9	0	7	6	5	21	8	28

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #54: Lawrence Expwy & Benton St



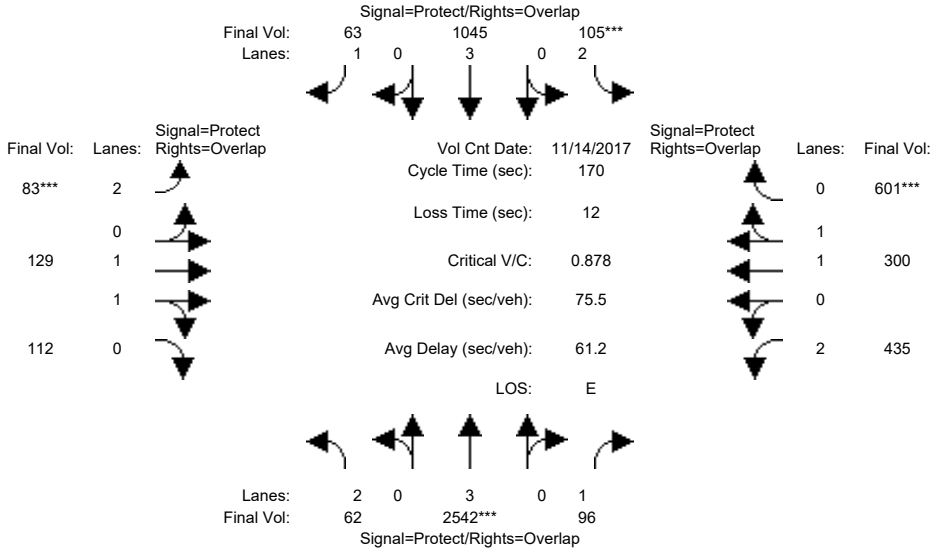
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	83	83	41	104	104	14	28	28	16	30	30
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	92	1570	290	378	2617	89	75	234	61	110	128	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	1570	290	378	2617	89	75	234	61	110	128	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	1570	290	378	2617	89	75	234	61	110	128	161
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	1256	290	378	2067	89	75	234	61	110	128	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	1256	290	378	2067	89	75	234	61	110	128	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	1256	290	378	2067	89	75	234	61	110	128	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.58	0.42	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	2934	765	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.22	0.17	0.22	0.36	0.05	0.04	0.08	0.08	0.06	0.07	0.09
Crit Moves:		****		****			****				****	
Green Time:	19.8	82.5	98.8	41.4	104	118.3	14.0	27.4	47.2	16.3	29.9	71.3
Volume/Cap:	0.50	0.51	0.32	0.99	0.66	0.08	0.58	0.55	0.32	0.73	0.43	0.25
Uniform Del:	80.5	39.0	26.2	74.1	30.3	14.3	85.2	75.6	58.3	84.7	72.3	40.8
IncremntDel:	2.3	0.2	0.2	43.6	0.5	0.0	6.6	1.3	0.2	16.9	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.7	33.6	19.5	117.8	21.3	7.4	91.7	76.9	58.5	101.6	72.8	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	33.6	19.5	117.8	21.3	7.4	91.7	76.9	58.5	101.6	72.8	40.9
LOS by Move:	F	C-	B-	F	C+	A	F	E-	E+	F	E	D
HCM2kAvgQ:	5	14	7	26	20	1	5	9	7	8	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #56: Lawrence Expwy & Pruneridge Ave



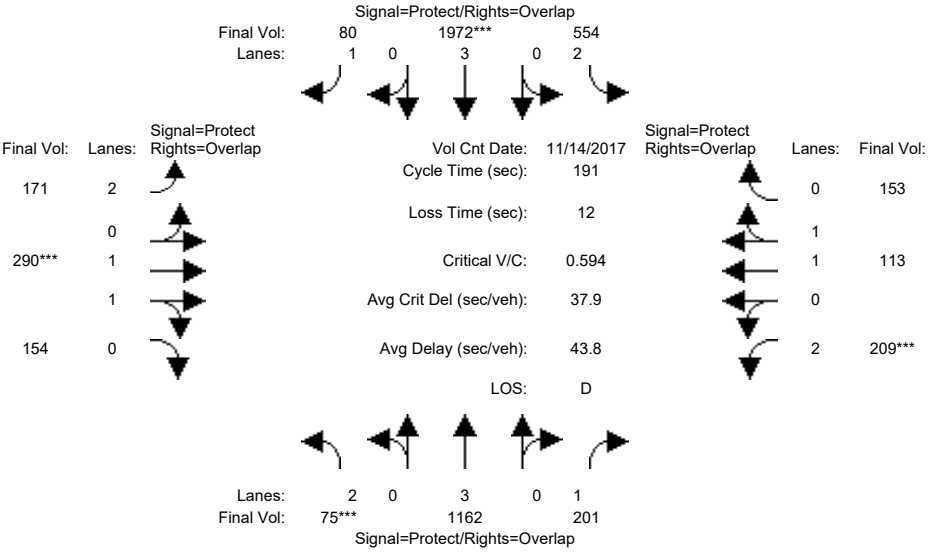
Street Name:	Lawrence Expwy						Pruneridge Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	81	81	16	83	83	13	24	24	26	37	37
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	62	2922	96	105	1201	63	83	129	112	435	300	601
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	2922	96	105	1201	63	83	129	112	435	300	601
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	2922	96	105	1201	63	83	129	112	435	300	601
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	2542	96	105	1045	63	83	129	112	435	300	601
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	2542	96	105	1045	63	83	129	112	435	300	601
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	2542	96	105	1045	63	83	129	112	435	300	601
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.05	0.95	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	1979	1718	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.45	0.05	0.03	0.18	0.04	0.03	0.07	0.07	0.14	0.16	0.34
Crit Moves:		****		****			****					****
Green Time:	13.9	81.4	106.9	15.5	83.0	95.4	12.4	23.6	37.5	25.5	36.8	52.3
Volume/Cap:	0.24	0.93	0.09	0.37	0.38	0.06	0.36	0.47	0.30	0.92	0.73	1.12
Uniform Del:	73.1	41.7	12.4	72.6	27.3	17.0	75.0	67.4	55.2	71.3	62.0	58.8
IncremntDel:	0.5	6.6	0.0	0.8	0.1	0.0	1.0	0.7	0.2	23.3	2.2	68.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.21	1.46	1.00	0.78	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.6	57.2	18.1	73.4	21.5	11.2	76.0	68.1	55.4	94.6	64.2	127.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.6	57.2	18.1	73.4	21.5	11.2	76.0	68.1	55.4	94.6	64.2	127.4
LOS by Move:	E	E+	B-	E	C+	B+	E-	E	E+	F	E	F
HCM2kAvgQ:	2	46	3	3	8	1	3	6	5	17	15	45

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #56: Lawrence Expwy & Pruneridge Ave



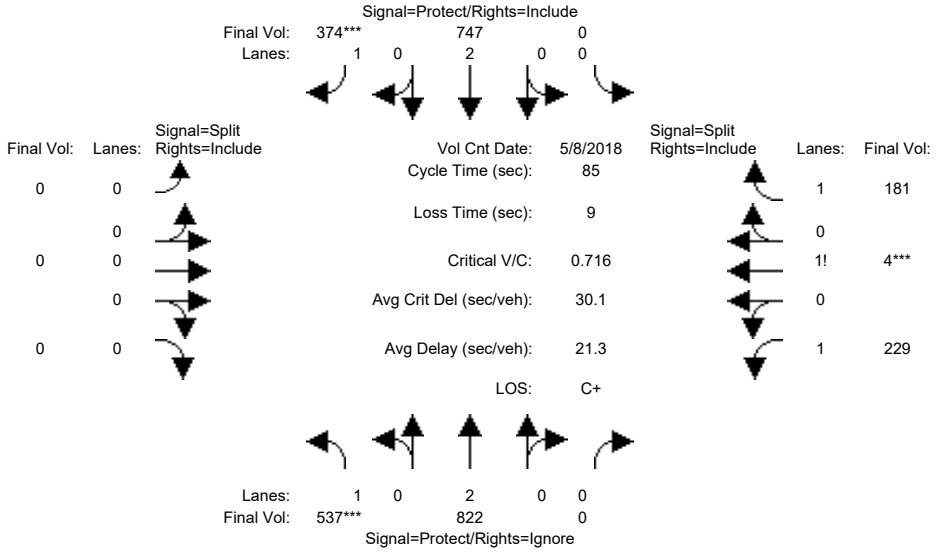
Street Name:	Lawrence Expwy						Pruneridge Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	13	82	82	37	106	106	15	30	30	18	33	33
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	75	1452	201	554	2496	80	171	290	154	209	113	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	1452	201	554	2496	80	171	290	154	209	113	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	1452	201	554	2496	80	171	290	154	209	113	153
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	1162	201	554	1972	80	171	290	154	209	113	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	1162	201	554	1972	80	171	290	154	209	113	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	1162	201	554	1972	80	171	290	154	209	113	153
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.29	0.71	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	2410	1280	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.20	0.11	0.18	0.35	0.05	0.05	0.12	0.12	0.07	0.06	0.09
Crit Moves:	****				****			****			****	
Green Time:	13.0	81.5	99.8	37.1	106	120.8	15.2	29.6	42.6	18.3	32.8	69.9
Volume/Cap:	0.35	0.48	0.22	0.91	0.63	0.07	0.68	0.78	0.54	0.69	0.35	0.24
Uniform Del:	85.0	39.4	24.6	75.2	29.2	13.5	85.5	77.5	65.5	83.6	69.7	42.1
IncremntDel:	1.0	0.1	0.1	17.1	0.4	0.0	7.5	6.6	0.7	6.8	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.9	34.2	18.1	92.3	20.1	6.7	93.0	84.2	66.2	90.4	69.9	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.9	34.2	18.1	92.3	20.1	6.7	93.0	84.2	66.2	90.4	69.9	42.2
LOS by Move:	F	C-	B-	F	C+	A	F	F	E	F	E	D
HCM2kAvgQ:	3	13	4	19	18	1	7	14	12	8	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



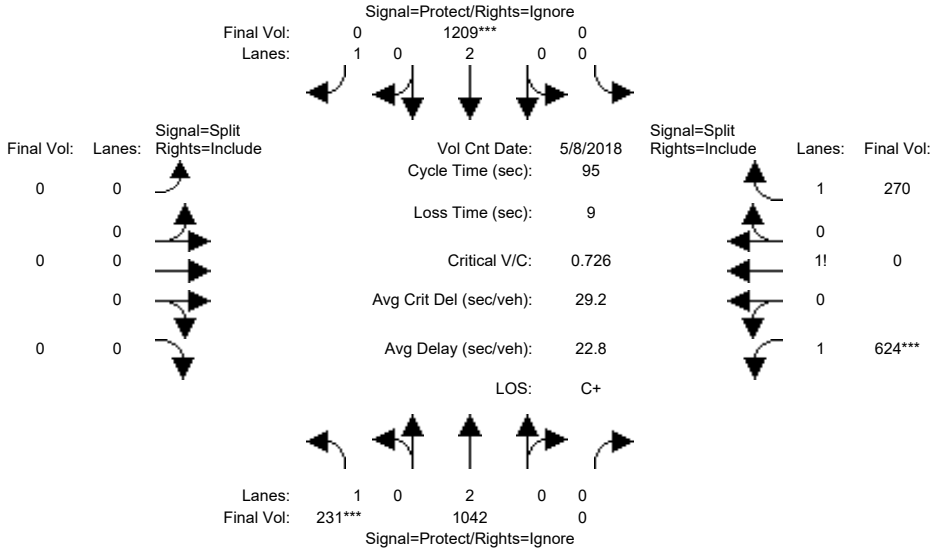
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	537	822	0	0	747	522	0	0	0	229	4	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	537	822	0	0	747	522	0	0	0	229	4	181
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	537	822	0	0	747	522	0	0	0	229	4	181
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	537	822	0	0	747	522	0	0	0	229	4	181
Reduct Vol:	0	0	0	0	0	148	0	0	0	0	0	0
Reduced Vol:	537	822	0	0	747	374	0	0	0	229	4	181
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	537	822	0	0	747	374	0	0	0	229	4	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.55	0.02	1.43
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2709	33	2508
Capacity Analysis Module:												
Vol/Sat:	0.31	0.22	0.00	0.00	0.20	0.21	0.00	0.00	0.00	0.08	0.12	0.07
Crit Moves:	****					****					****	
Green Time:	36.4	61.8	0.0	0.0	25.4	25.4	0.0	0.0	0.0	14.2	14.2	14.2
Volume/Cap:	0.72	0.30	0.00	0.00	0.66	0.72	0.00	0.00	0.00	0.51	0.72	0.43
Uniform Del:	20.0	4.0	0.0	0.0	26.0	26.6	0.0	0.0	0.0	32.2	33.5	31.8
IncremntDel:	3.3	0.1	0.0	0.0	1.4	4.7	0.0	0.0	0.0	0.5	4.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	23.3	4.1	0.0	0.0	27.5	31.3	0.0	0.0	0.0	32.7	37.8	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.3	4.1	0.0	0.0	27.5	31.3	0.0	0.0	0.0	32.7	37.8	32.1
LOS by Move:	C	A	A	A	C	C	A	A	A	C-	D+	C-
HCM2kAvgQ:	14	4	0	0	9	10	0	0	0	4	7	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



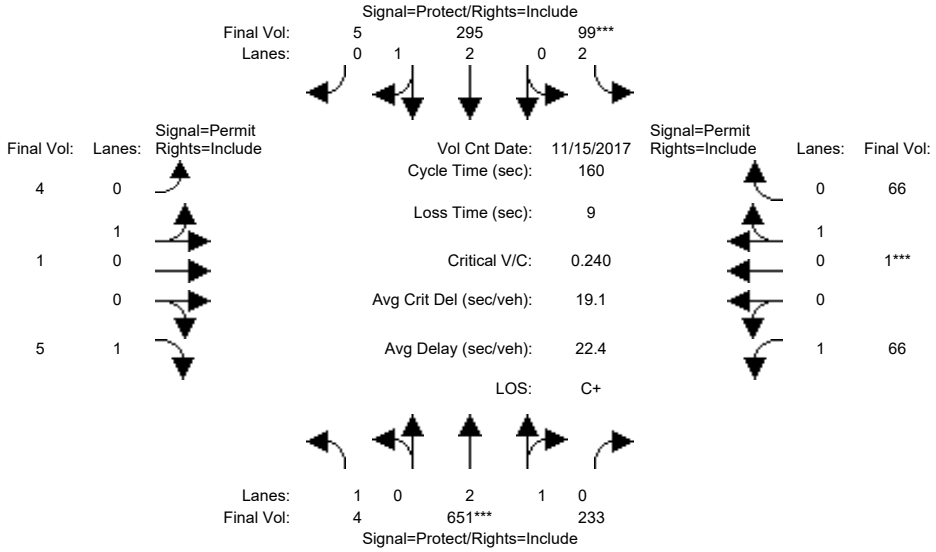
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	231	1042	0	0	1209	190	0	0	0	624	0	270
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	1042	0	0	1209	190	0	0	0	624	0	270
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	231	1042	0	0	1209	190	0	0	0	624	0	270
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	1042	0	0	1209	0	0	0	0	624	0	270
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	1042	0	0	1209	0	0	0	0	624	0	270
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	231	1042	0	0	1209	0	0	0	0	624	0	270
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.93	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.69	0.00	1.31
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	3009	0	2284
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.21	0.00	0.12
Crit Moves:	****				****					****		
Green Time:	17.3	58.9	0.0	0.0	41.6	0.0	0.0	0.0	0.0	27.1	0.0	27.1
Volume/Cap:	0.73	0.44	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.73	0.00	0.41
Uniform Del:	36.6	9.5	0.0	0.0	22.0	0.0	0.0	0.0	0.0	30.6	0.0	27.5
IncremntDel:	8.1	0.1	0.0	0.0	1.6	0.0	0.0	0.0	0.0	2.2	0.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	44.8	9.6	0.0	0.0	23.6	0.0	0.0	0.0	0.0	32.8	0.0	27.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	9.6	0.0	0.0	23.6	0.0	0.0	0.0	0.0	32.8	0.0	27.6
LOS by Move:	D	A	A	A	C	A	A	A	A	C-	A	C
HCM2kAvgQ:	8	8	0	0	15	0	0	0	0	12	0	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #58: Wolfe Rd & Stewart Dr



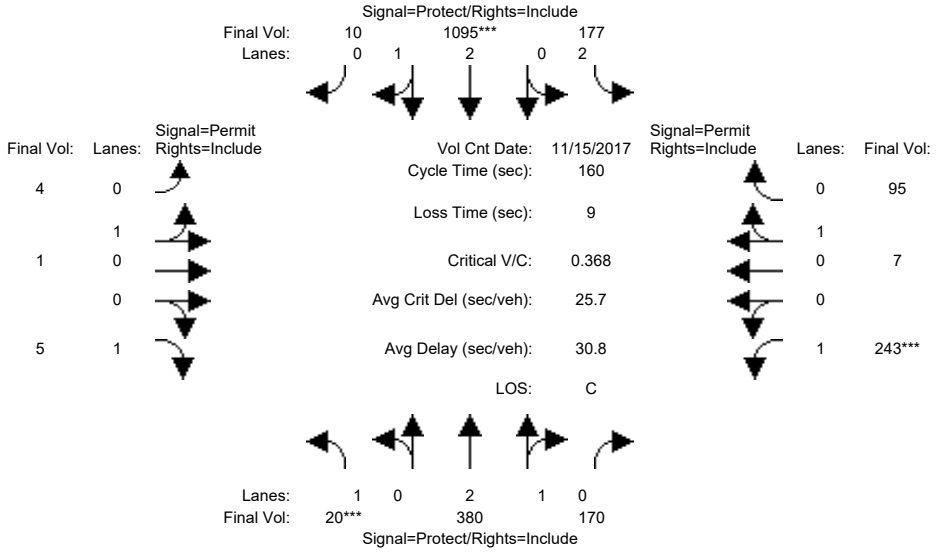
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	651	233	99	295	5	4	1	5	66	1	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	651	233	99	295	5	4	1	5	66	1	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	651	233	99	295	5	4	1	5	66	1	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	651	233	99	295	5	4	1	5	66	1	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	651	233	99	295	5	4	1	5	66	1	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	651	233	99	295	5	4	1	5	66	1	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.18	0.82	2.00	2.95	0.05	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	4122	1475	3150	5507	93	1440	360	1750	1750	27	1773
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.03	0.05	0.05	0.00	0.00	0.00	0.04	0.04	0.04
Crit Moves:		****		****							****	
Green Time:	52.0	105	105.2	20.9	74.2	74.2	24.8	24.8	24.8	24.8	24.8	24.8
Volume/Cap:	0.01	0.24	0.24	0.24	0.12	0.12	0.02	0.02	0.02	0.24	0.24	0.24
Uniform Del:	36.6	11.1	11.1	62.4	24.3	24.3	57.3	57.3	57.3	59.4	59.3	59.3
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.6	11.2	11.2	62.7	24.3	24.3	57.3	57.3	57.3	59.8	59.8	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	11.2	11.2	62.7	24.3	24.3	57.3	57.3	57.3	59.8	59.8	59.8
LOS by Move:	D+	B+	B+	E	C	C	E+	E+	E+	E+	E+	E+
HCM2kAvgQ:	0	6	6	3	3	3	0	0	0	3	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #58: Wolfe Rd & Stewart Dr



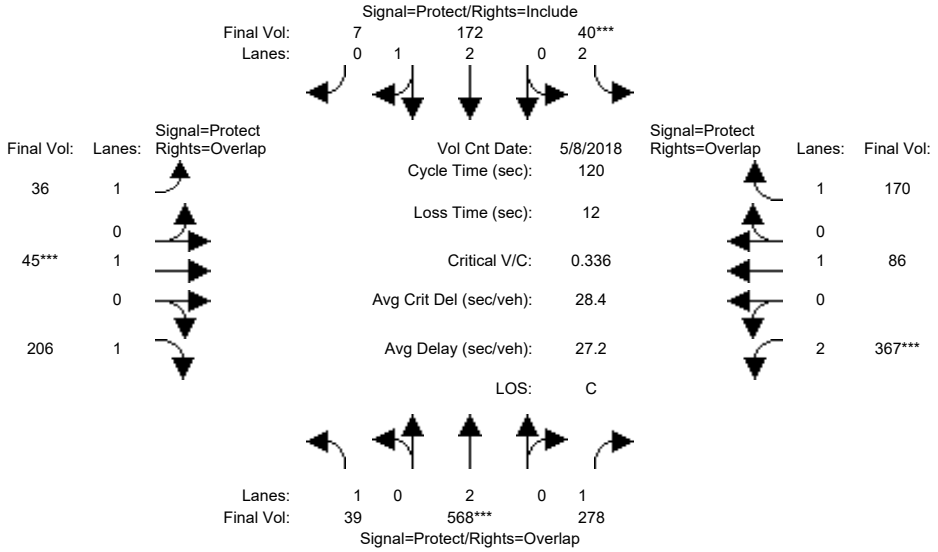
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	20	380	170	177	1095	10	4	1	5	243	7	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	380	170	177	1095	10	4	1	5	243	7	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	380	170	177	1095	10	4	1	5	243	7	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	380	170	177	1095	10	4	1	5	243	7	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	380	170	177	1095	10	4	1	5	243	7	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	380	170	177	1095	10	4	1	5	243	7	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.04	0.96	2.00	2.97	0.03	0.80	0.20	1.00	1.00	0.07	0.93
Final Sat.:	1750	3867	1730	3150	5549	51	1440	360	1750	1750	124	1676
Capacity Analysis Module:												
Vol/Sat:	0.01	0.10	0.10	0.06	0.20	0.20	0.00	0.00	0.00	0.14	0.06	0.06
Crit Moves:	****				****					****		
Green Time:	7.0	58.2	58.2	33.3	84.5	84.5	59.5	59.5	59.5	59.5	59.5	59.5
Volume/Cap:	0.26	0.27	0.27	0.27	0.37	0.37	0.01	0.01	0.01	0.37	0.15	0.15
Uniform Del:	74.0	35.9	35.9	53.2	22.2	22.2	31.7	31.7	31.7	36.7	33.5	33.5
IncremntDel:	1.8	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.8	36.0	36.0	53.4	22.3	22.3	31.7	31.7	31.7	37.0	33.6	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.8	36.0	36.0	53.4	22.3	22.3	31.7	31.7	31.7	37.0	33.6	33.6
LOS by Move:	E-	D+	D+	D-	C+	C+	C	C	C	D+	C-	C-
HCM2kAvgQ:	1	6	6	4	10	10	0	0	0	9	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #59: Fair Oaks Ave & Tasman Dr



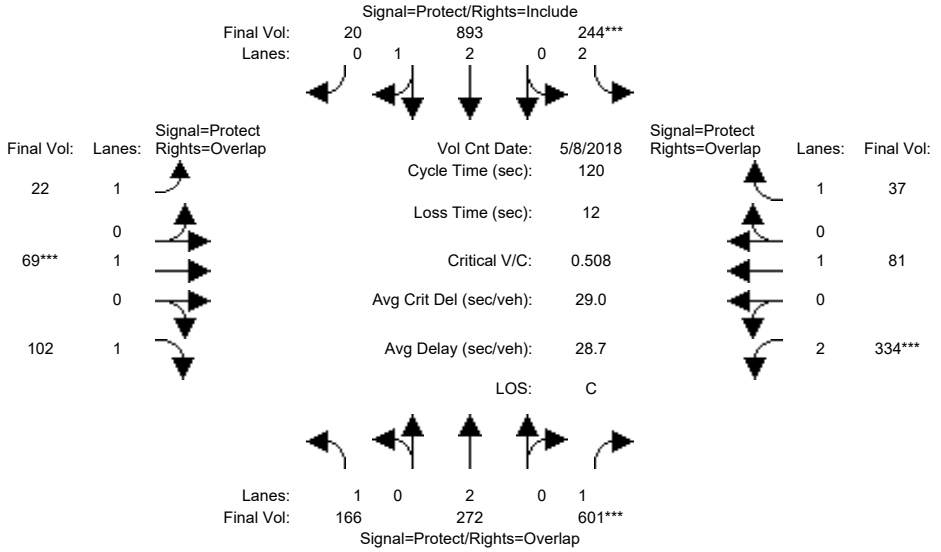
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	39	568	278	40	172	7	36	45	206	367	86	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	568	278	40	172	7	36	45	206	367	86	170
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	568	278	40	172	7	36	45	206	367	86	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	568	278	40	172	7	36	45	206	367	86	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	568	278	40	172	7	36	45	206	367	86	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	568	278	40	172	7	36	45	206	367	86	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.88	0.12	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5381	219	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.16	0.01	0.03	0.03	0.02	0.02	0.12	0.12	0.05	0.10
Crit Moves:		****		****				****		****		
Green Time:	23.9	51.1	91.0	7.0	34.2	34.2	20.4	10.0	33.9	39.9	29.5	36.5
Volume/Cap:	0.11	0.35	0.21	0.22	0.11	0.11	0.12	0.28	0.42	0.35	0.18	0.32
Uniform Del:	39.3	23.2	4.2	53.9	31.7	31.7	42.2	51.6	35.0	30.3	35.8	32.2
IncremntDel:	0.1	0.1	0.1	0.6	0.0	0.0	0.2	1.0	0.6	0.2	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.5	23.4	4.2	54.5	31.7	31.7	42.4	52.6	35.5	30.5	35.9	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.5	23.4	4.2	54.5	31.7	31.7	42.4	52.6	35.5	30.5	35.9	32.5
LOS by Move:	D	C	A	D-	C	C	D	D-	D+	C	D+	C-
HCM2kAvgQ:	1	7	3	1	2	2	1	2	7	6	2	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #59: Fair Oaks Ave & Tasman Dr



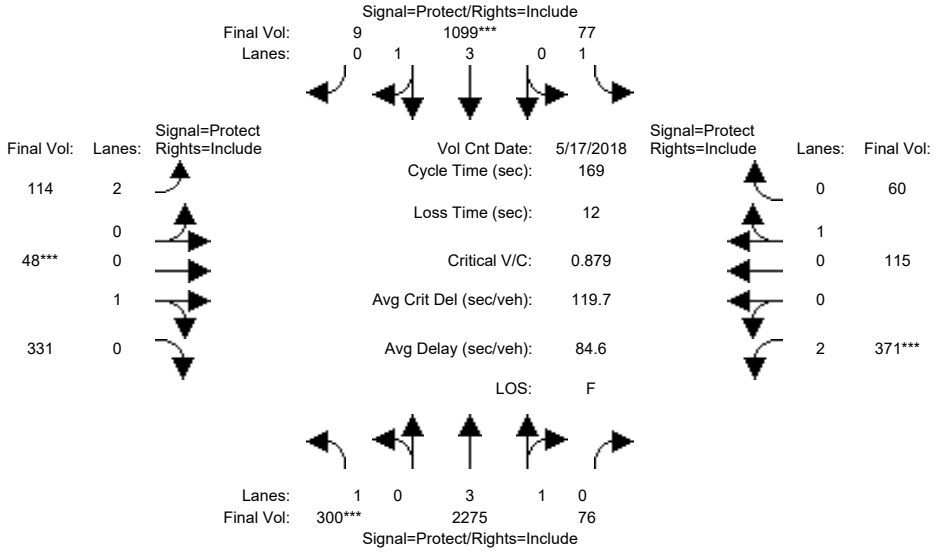
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	166	272	601	244	893	20	22	69	102	334	81	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	272	601	244	893	20	22	69	102	334	81	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	272	601	244	893	20	22	69	102	334	81	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	272	601	244	893	20	22	69	102	334	81	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	272	601	244	893	20	22	69	102	334	81	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	166	272	601	244	893	20	22	69	102	334	81	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.93	0.07	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5477	123	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.07	0.34	0.08	0.16	0.16	0.01	0.04	0.06	0.11	0.04	0.02
Crit Moves:			****	****				****		****		
Green Time:	27.0	55.3	80.0	18.0	46.3	46.3	14.3	10.0	37.0	24.7	20.4	38.4
Volume/Cap:	0.42	0.16	0.52	0.52	0.42	0.42	0.11	0.44	0.19	0.52	0.25	0.07
Uniform Del:	39.8	18.8	10.2	47.0	27.0	27.0	47.2	52.3	30.5	42.3	43.2	28.3
IncremntDel:	0.7	0.0	0.4	1.0	0.1	0.1	0.2	1.9	0.2	0.7	0.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.6	18.8	10.6	47.9	27.1	27.1	47.4	54.2	30.7	43.1	43.6	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	18.8	10.6	47.9	27.1	27.1	47.4	54.2	30.7	43.1	43.6	28.4
LOS by Move:	D	B-	B+	D	C	C	D	D-	C	D	D	C
HCM2kAvgQ:	5	3	12	6	8	8	1	3	3	6	2	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #61: Lawrence Expwy & Lakehaven Dr



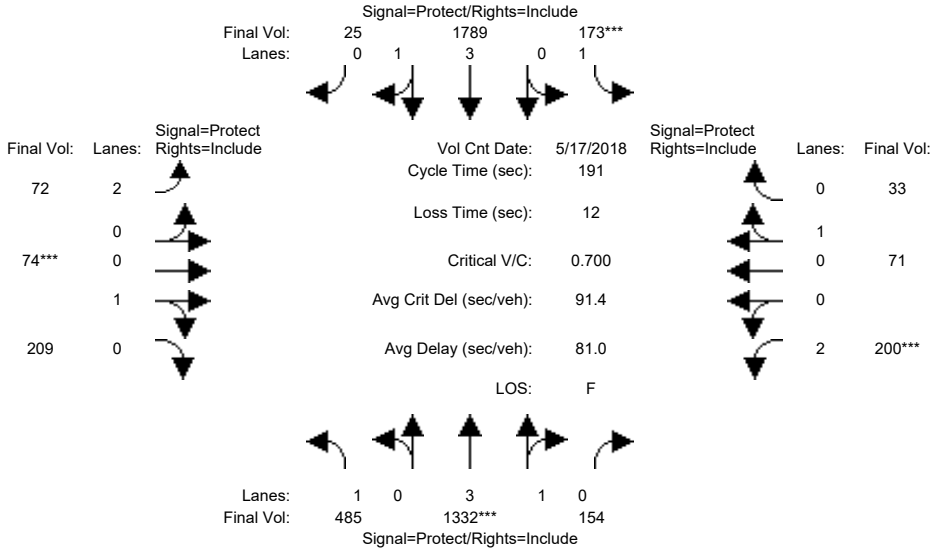
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	33	71	71	12	50	50	12	37	37	26	51	51
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	300	2275	76	77	1099	9	114	48	331	371	115	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	2275	76	77	1099	9	114	48	331	371	115	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	2275	76	77	1099	9	114	48	331	371	115	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	2275	76	77	1099	9	114	48	331	371	115	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	2275	76	77	1099	9	114	48	331	371	115	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	2275	76	77	1099	9	114	48	331	371	115	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.87	0.13	1.00	3.97	0.03	2.00	0.20	0.80	2.00	0.66	0.34
Final Sat.:	1750	7257	242	1750	7439	61	1575	146	1005	2205	473	247
Capacity Analysis Module:												
Vol/Sat:	0.17	0.31	0.31	0.04	0.15	0.15	0.07	0.33	0.33	0.17	0.24	0.24
Crit Moves:	****				****			****			****	
Green Time:	33.1	71.4	71.4	11.7	49.5	49.5	11.5	36.7	36.7	26.3	51.5	51.5
Volume/Cap:	0.88	0.74	0.74	0.64	0.50	0.50	1.06	1.52	1.52	1.08	0.80	0.80
Uniform Del:	65.9	41.0	41.0	76.6	49.6	49.6	78.8	66.1	66.1	71.4	54.0	54.0
IncremntDel:	21.3	1.0	1.0	10.7	0.2	0.2	105.4	252	251.9	72.0	18.2	18.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.01	1.16	1.16	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.6	48.5	48.5	87.2	52.7	52.7	184.1	318	318.0	143.4	72.2	72.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.6	48.5	48.5	87.2	52.7	52.7	184.1	318	318.0	143.4	72.2	72.2
LOS by Move:	F	D	D	F	D-	D-	F	F	F	F	E	E
HCM2kAvgQ:	17	27	27	4	12	12	6	25	42	17	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #61: Lawrence Expwy & Lakehaven Dr



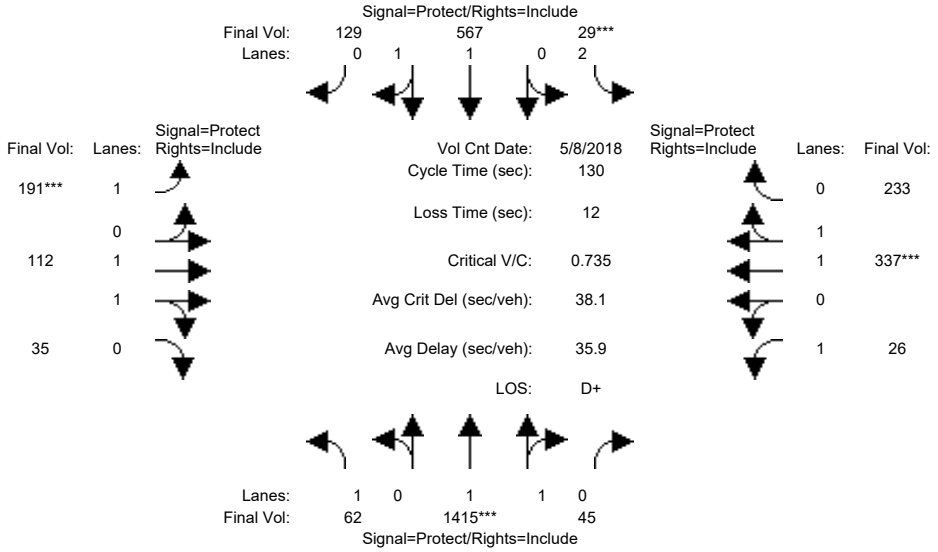
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	59	89	89	28	58	58	13	30	30	20	37	37
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 4:50 PM - 5:50 PM												
Base Vol:	485	1332	154	173	1789	25	72	74	209	200	71	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	1332	154	173	1789	25	72	74	209	200	71	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	485	1332	154	173	1789	25	72	74	209	200	71	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	485	1332	154	173	1789	25	72	74	209	200	71	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	485	1332	154	173	1789	25	72	74	209	200	71	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	485	1332	154	173	1789	25	72	74	209	200	71	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.57	0.43	1.00	3.94	0.06	2.00	0.38	0.62	2.00	0.68	0.32
Final Sat.:	1750	6721	777	1750	7396	103	1575	275	778	2205	492	228
Capacity Analysis Module:												
Vol/Sat:	0.28	0.20	0.20	0.10	0.24	0.24	0.05	0.27	0.27	0.09	0.14	0.14
Crit Moves:		****		****				****		****		
Green Time:	58.6	89.1	89.1	27.7	57.6	57.6	12.9	30.3	30.3	20.2	37.6	37.6
Volume/Cap:	0.90	0.42	0.42	0.68	0.80	0.80	0.68	1.69	1.69	0.86	0.73	0.73
Uniform Del:	63.5	33.9	33.9	77.5	61.4	61.4	87.0	80.4	80.4	84.0	72.0	72.0
IncremntDel:	18.6	0.1	0.1	7.4	2.1	2.1	16.1	337	336.6	25.6	17.9	17.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.98	0.81	0.81	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	80.8	27.7	27.7	84.9	67.5	67.5	103.1	417	417.0	109.6	89.9	89.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.8	27.7	27.7	84.9	67.5	67.5	103.1	417	417.0	109.6	89.9	89.9
LOS by Move:	F	C	C	F	E	E	F	F	F	F	F	F
HCM2kAvgQ:	30	11	11	10	25	25	4	23	39	9	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #62: Fair Oaks Ave & Evelyn Ave



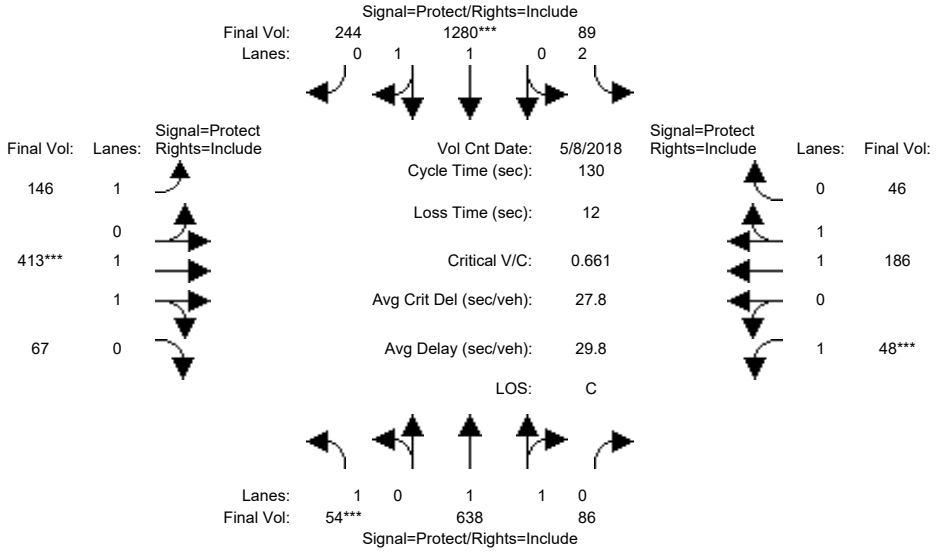
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	62	1415	45	29	567	129	191	112	35	26	337	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	1415	45	29	567	129	191	112	35	26	337	233
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1415	45	29	567	129	191	112	35	26	337	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	1415	45	29	567	129	191	112	35	26	337	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1415	45	29	567	129	191	112	35	26	337	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	1415	45	29	567	129	191	112	35	26	337	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.94	0.06	2.00	1.62	0.38	1.00	1.51	0.49	1.00	1.16	0.84
Final Sat.:	1750	3586	114	3150	3014	686	1750	2818	881	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.04	0.39	0.39	0.01	0.19	0.19	0.11	0.04	0.04	0.01	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	16.4	66.6	66.6	7.0	57.2	57.2	18.4	26.1	26.1	18.3	26.0	26.0
Volume/Cap:	0.28	0.77	0.77	0.17	0.43	0.43	0.77	0.20	0.20	0.11	0.77	0.77
Uniform Del:	51.5	25.6	25.6	58.7	25.1	25.1	53.8	43.2	43.2	48.7	49.2	49.2
IncremntDel:	0.7	2.0	2.0	0.5	0.2	0.2	13.7	0.1	0.1	0.2	5.0	5.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.2	27.6	27.6	59.2	25.3	25.3	67.5	43.3	43.3	48.9	54.2	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.2	27.6	27.6	59.2	25.3	25.3	67.5	43.3	43.3	48.9	54.2	54.2
LOS by Move:	D-	C	C	E+	C	C	E	D	D	D	D-	D-
HCM2kAvgQ:	3	25	25	1	9	9	8	2	2	1	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #62: Fair Oaks Ave & Evelyn Ave



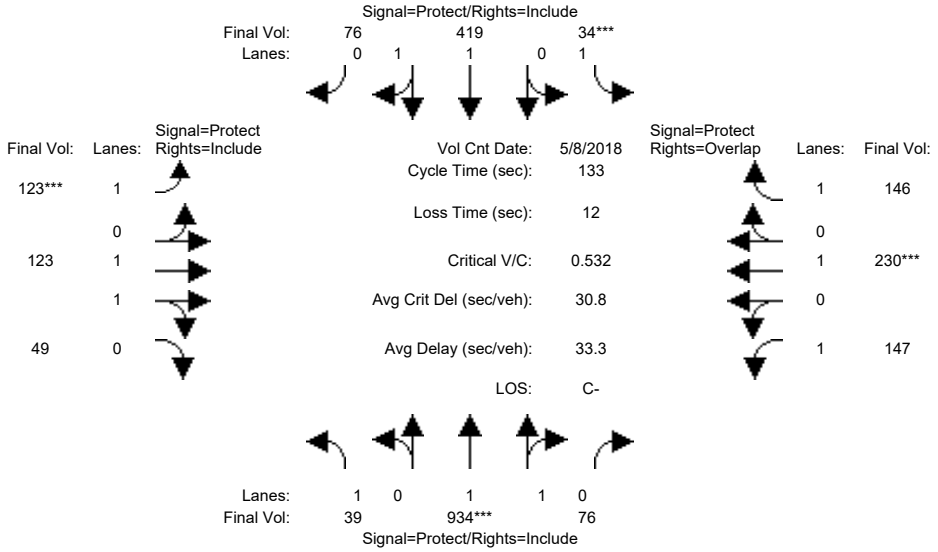
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	54	638	86	89	1280	244	146	413	67	48	186	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	638	86	89	1280	244	146	413	67	48	186	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	638	86	89	1280	244	146	413	67	48	186	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	638	86	89	1280	244	146	413	67	48	186	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	638	86	89	1280	244	146	413	67	48	186	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	638	86	89	1280	244	146	413	67	48	186	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.76	0.24	2.00	1.67	0.33	1.00	1.71	0.29	1.00	1.59	0.41
Final Sat.:	1750	3260	439	3150	3107	592	1750	3183	516	1750	2966	733
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.20	0.03	0.41	0.41	0.08	0.13	0.13	0.03	0.06	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	67.5	67.5	18.6	79.1	79.1	16.6	24.9	24.9	7.0	15.3	15.3
Volume/Cap:	0.57	0.38	0.38	0.20	0.68	0.68	0.65	0.68	0.68	0.51	0.53	0.53
Uniform Del:	60.0	18.7	18.7	49.1	17.0	17.0	54.0	48.8	48.8	59.8	54.0	54.0
IncremntDel:	8.3	0.1	0.1	0.2	0.8	0.8	6.8	2.6	2.6	4.6	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	18.8	18.8	49.4	17.8	17.8	60.7	51.4	51.4	64.4	55.3	55.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	18.8	18.8	49.4	17.8	17.8	60.7	51.4	51.4	64.4	55.3	55.3
LOS by Move:	E	B-	B-	D	B	B	E	D-	D-	E	E+	E+
HCM2kAvgQ:	3	9	9	2	20	20	6	9	9	2	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #63: Fair Oaks Ave & Old SF Rd



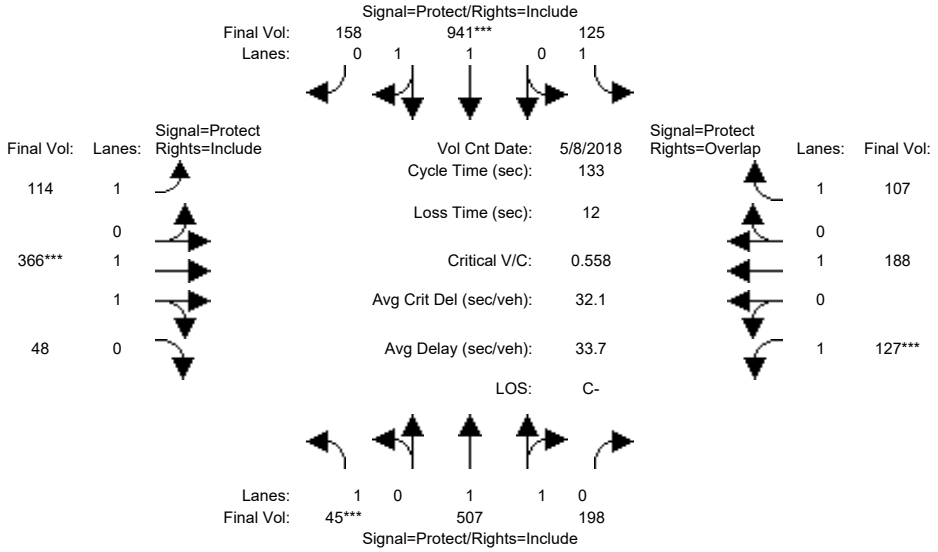
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	39	934	76	34	419	76	123	123	49	147	230	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	934	76	34	419	76	123	123	49	147	230	146
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	934	76	34	419	76	123	123	49	147	230	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	934	76	34	419	76	123	123	49	147	230	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	934	76	34	419	76	123	123	49	147	230	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	934	76	34	419	76	123	123	49	147	230	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.85	0.15	1.00	1.68	0.32	1.00	1.41	0.59	1.00	1.00	1.00
Final Sat.:	1750	3421	278	1750	3131	568	1750	2645	1054	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.27	0.02	0.13	0.13	0.07	0.05	0.05	0.08	0.12	0.08
Crit Moves:		****			****			****			****	
Green Time:	20.9	67.0	67.0	7.0	53.1	53.1	17.3	22.2	22.2	24.8	29.7	36.7
Volume/Cap:	0.14	0.54	0.54	0.37	0.33	0.33	0.54	0.28	0.28	0.45	0.54	0.30
Uniform Del:	48.3	22.5	22.5	60.9	27.7	27.7	54.2	48.4	48.4	48.1	45.6	38.0
IncremntDel:	0.2	0.3	0.3	2.5	0.1	0.1	2.7	0.2	0.2	1.0	1.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.6	22.8	22.8	63.4	27.8	27.8	56.8	48.7	48.7	49.1	47.1	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	22.8	22.8	63.4	27.8	27.8	56.8	48.7	48.7	49.1	47.1	38.4
LOS by Move:	D	C+	C+	E	C	C	E+	D	D	D	D	D+
HCM2kAvgQ:	1	14	14	2	7	7	6	3	3	6	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #63: Fair Oaks Ave & Old SF Rd



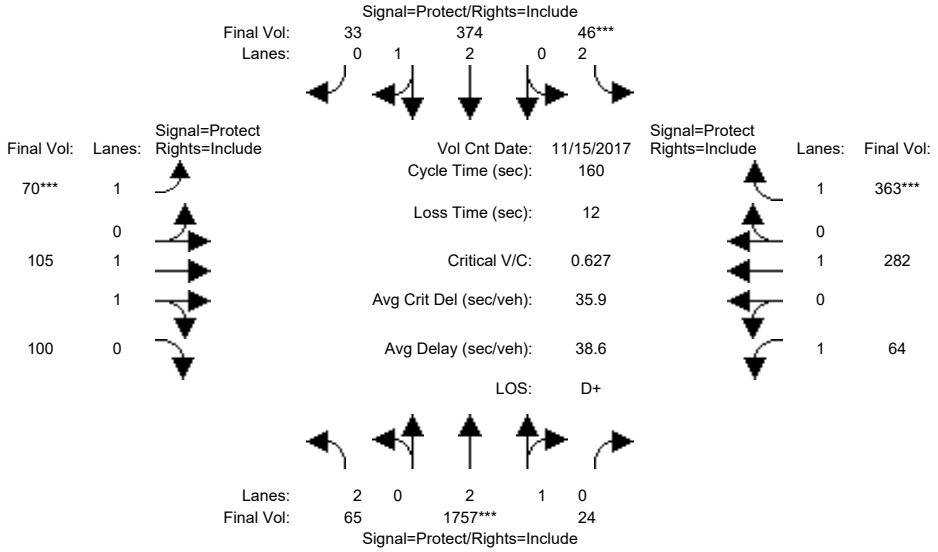
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	45	507	198	125	941	158	114	366	48	127	188	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	507	198	125	941	158	114	366	48	127	188	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	507	198	125	941	158	114	366	48	127	188	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	507	198	125	941	158	114	366	48	127	188	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	507	198	125	941	158	114	366	48	127	188	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	507	198	125	941	158	114	366	48	127	188	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.42	0.58	1.00	1.70	0.30	1.00	1.76	0.24	1.00	1.00	1.00
Final Sat.:	1750	2660	1039	1750	3168	532	1750	3271	429	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.19	0.07	0.30	0.30	0.07	0.11	0.11	0.07	0.10	0.06
Crit Moves:	****				****			****			****	
Green Time:	7.0	56.2	56.2	21.1	70.3	70.3	17.3	26.5	26.5	17.2	26.3	47.4
Volume/Cap:	0.49	0.45	0.45	0.45	0.56	0.56	0.50	0.56	0.56	0.56	0.50	0.17
Uniform Del:	61.3	27.4	27.4	50.7	21.0	21.0	53.8	48.0	48.0	54.4	47.5	29.3
IncremntDel:	4.0	0.2	0.2	1.2	0.4	0.4	1.7	1.0	1.0	3.2	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.3	27.6	27.6	51.9	21.4	21.4	55.5	49.0	49.0	57.6	48.5	29.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	27.6	27.6	51.9	21.4	21.4	55.5	49.0	49.0	57.6	48.5	29.5
LOS by Move:	E	C	C	D-	C+	C+	E+	D	D	E+	D	C
HCM2kAvgQ:	2	10	10	5	15	15	5	8	8	5	7	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #64: Wolfe Rd & Evelyn Ave



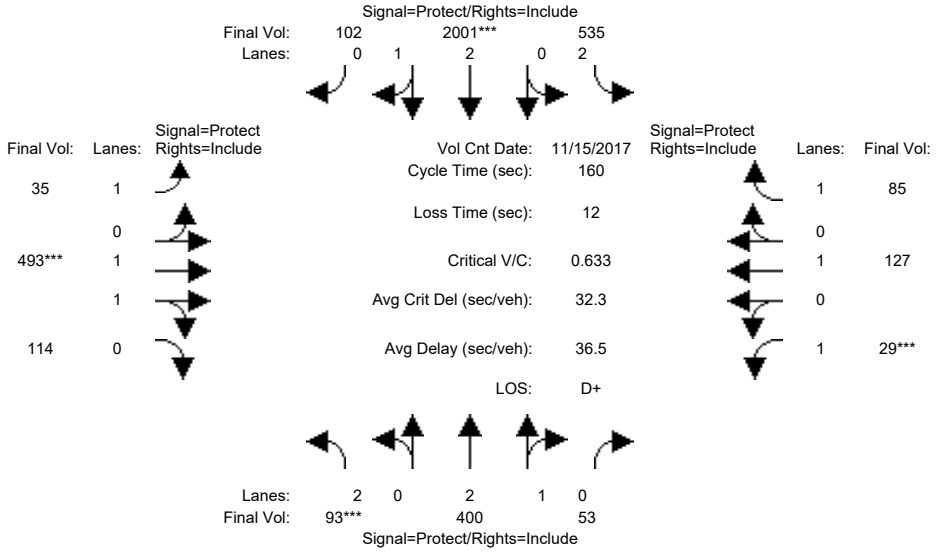
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	1757	24	46	374	33	70	105	100	64	282	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1757	24	46	374	33	70	105	100	64	282	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1757	24	46	374	33	70	105	100	64	282	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1757	24	46	374	33	70	105	100	64	282	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1757	24	46	374	33	70	105	100	64	282	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1757	24	46	374	33	70	105	100	64	282	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.95	0.92	1.00	0.92
Lanes:	2.00	2.96	0.04	2.00	2.75	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5524	75	3150	5145	454	1750	1898	1800	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.32	0.32	0.01	0.07	0.07	0.04	0.06	0.06	0.04	0.15	0.21
Crit Moves:		****		****			****					****
Green Time:	32.4	79.3	79.3	7.0	53.9	53.9	10.0	36.3	36.3	25.4	51.7	51.7
Volume/Cap:	0.10	0.64	0.64	0.33	0.22	0.22	0.64	0.24	0.24	0.23	0.46	0.64
Uniform Del:	51.9	29.8	29.8	74.2	38.0	38.0	73.3	50.6	50.6	58.8	43.0	46.2
IncremntDel:	0.1	0.5	0.5	1.4	0.1	0.1	12.3	0.2	0.2	0.4	0.5	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.0	30.4	30.4	75.7	38.0	38.0	85.5	50.8	50.8	59.2	43.6	48.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.0	30.4	30.4	75.7	38.0	38.0	85.5	50.8	50.8	59.2	43.6	48.7
LOS by Move:	D-	C	C	E-	D+	D+	F	D	D	E+	D	D
HCM2kAvgQ:	1	21	21	1	5	5	4	4	4	3	11	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #64: Wolfe Rd & Evelyn Ave



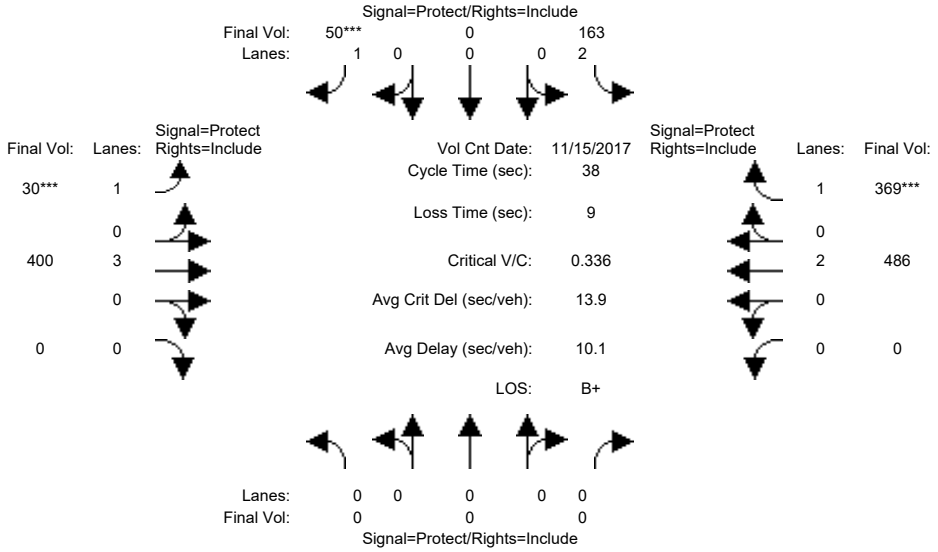
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	93	400	53	535	2001	102	35	493	114	29	127	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	400	53	535	2001	102	35	493	114	29	127	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	400	53	535	2001	102	35	493	114	29	127	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	400	53	535	2001	102	35	493	114	29	127	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	400	53	535	2001	102	35	493	114	29	127	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	400	53	535	2001	102	35	493	114	29	127	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.64	0.36	2.00	2.85	0.15	1.00	1.61	0.39	1.00	1.00	1.00
Final Sat.:	3150	4944	655	3150	5328	272	1750	3005	695	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.17	0.38	0.38	0.02	0.16	0.16	0.02	0.07	0.05
Crit Moves:	****				****			****			****	
Green Time:	7.3	32.4	32.4	68.0	93.0	93.0	18.8	40.6	40.6	7.0	28.8	28.8
Volume/Cap:	0.65	0.40	0.40	0.40	0.65	0.65	0.17	0.65	0.65	0.38	0.37	0.27
Uniform Del:	75.1	55.4	55.4	31.9	22.4	22.4	63.5	53.3	53.3	74.4	57.6	56.5
IncremntDel:	9.7	0.2	0.2	0.2	0.5	0.5	0.4	1.6	1.6	3.1	0.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.8	55.6	55.6	32.1	22.9	22.9	63.9	54.8	54.8	77.5	58.3	57.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.8	55.6	55.6	32.1	22.9	22.9	63.9	54.8	54.8	77.5	58.3	57.0
LOS by Move:	F	E+	E+	C-	C+	C+	E	D-	D-	E-	E+	E+
HCM2kAvgQ:	3	6	6	10	22	22	2	13	13	2	6	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #65: Evelyn Ave & Reed Ave



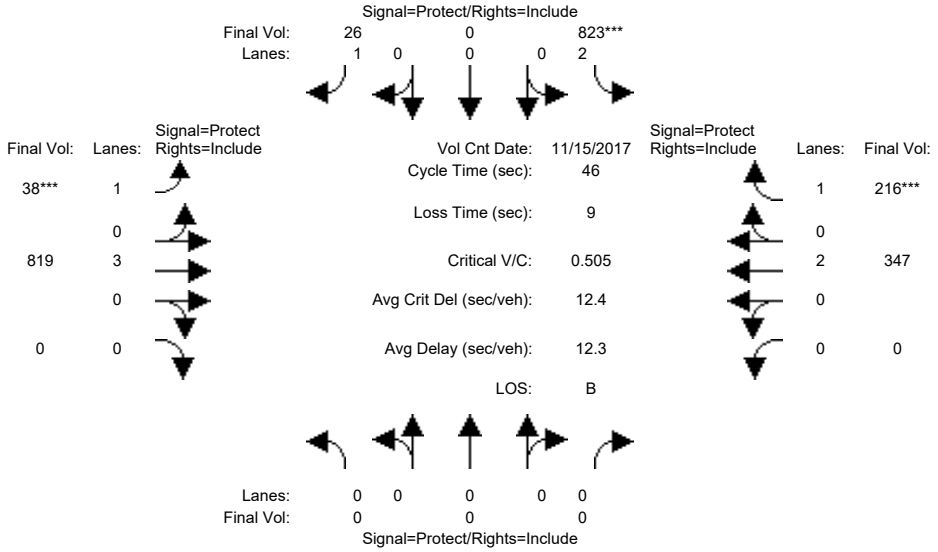
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	10	10	7	10	10	0	10	10
Y+R:	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	163	0	50	30	400	0	0	486	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	163	0	50	30	400	0	0	486	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	163	0	50	30	400	0	0	486	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	163	0	50	30	400	0	0	486	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	163	0	50	30	400	0	0	486	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	163	0	50	30	400	0	0	486	369
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.03	0.02	0.07	0.00	0.00	0.13	0.21
Crit Moves:						****	****					****
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	7.0	19.0	0.0	0.0	12.0	12.0
Volume/Cap:	0.00	0.00	0.00	0.20	0.00	0.11	0.09	0.14	0.00	0.00	0.40	0.67
Uniform Del:	0.0	0.0	0.0	10.9	0.0	10.6	12.9	5.1	0.0	0.0	10.2	11.3
IncremntDel:	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.2	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.0	0.0	10.7	13.0	5.1	0.0	0.0	10.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.0	0.0	10.7	13.0	5.1	0.0	0.0	10.4	14.4
LOS by Move:	A	A	A	B+	A	B+	B	A	A	A	B+	B
HCM2kAvgQ:	0	0	0	1	0	1	0	1	0	0	2	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #65: Evelyn Ave & Reed Ave



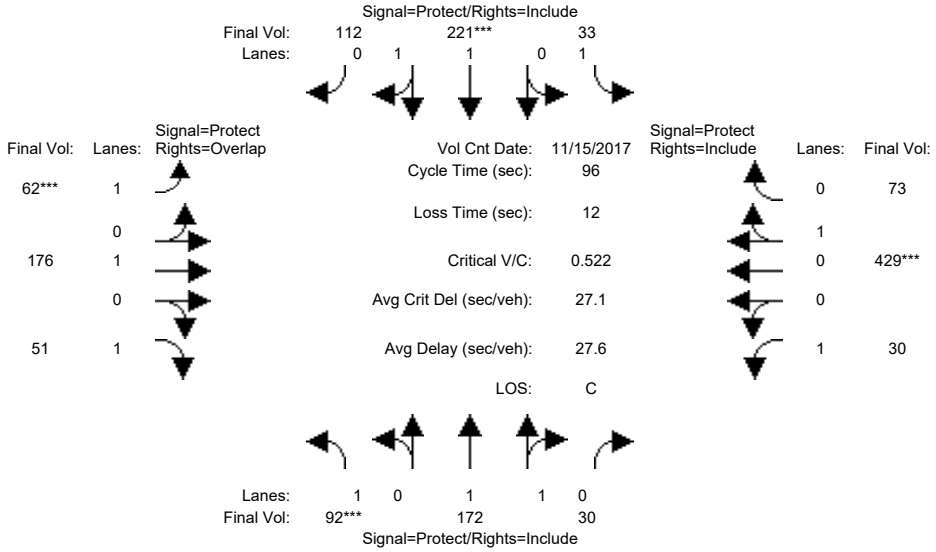
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	0	10	7	10	0	0	10	10
Y+R:	0.0	0.0	0.0	4.0	0.0	4.0	4.0	4.0	0.0	0.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	823	0	26	38	819	0	0	347	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	823	0	26	38	819	0	0	347	216
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	823	0	26	38	819	0	0	347	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	823	0	26	38	819	0	0	347	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	823	0	26	38	819	0	0	347	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	823	0	26	38	819	0	0	347	216
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.01	0.02	0.14	0.00	0.00	0.09	0.12
Crit Moves:				****			****					****
Green Time:	0.0	0.0	0.0	20.0	0.0	20.0	7.0	17.0	0.0	0.0	10.0	10.0
Volume/Cap:	0.00	0.00	0.00	0.60	0.00	0.03	0.14	0.39	0.00	0.00	0.42	0.57
Uniform Del:	0.0	0.0	0.0	9.9	0.0	7.5	16.9	10.7	0.0	0.0	15.5	16.1
IncremntDel:	0.0	0.0	0.0	0.8	0.0	0.0	0.2	0.1	0.0	0.0	0.3	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	10.7	0.0	7.5	17.1	10.8	0.0	0.0	15.8	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	10.7	0.0	7.5	17.1	10.8	0.0	0.0	15.8	18.1
LOS by Move:	A	A	A	B+	A	A	B	B+	A	A	B	B-
HCM2kAvgQ:	0	0	0	6	0	0	0	3	0	0	2	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #66: Sunnyvale Ave & Evelyn Ave



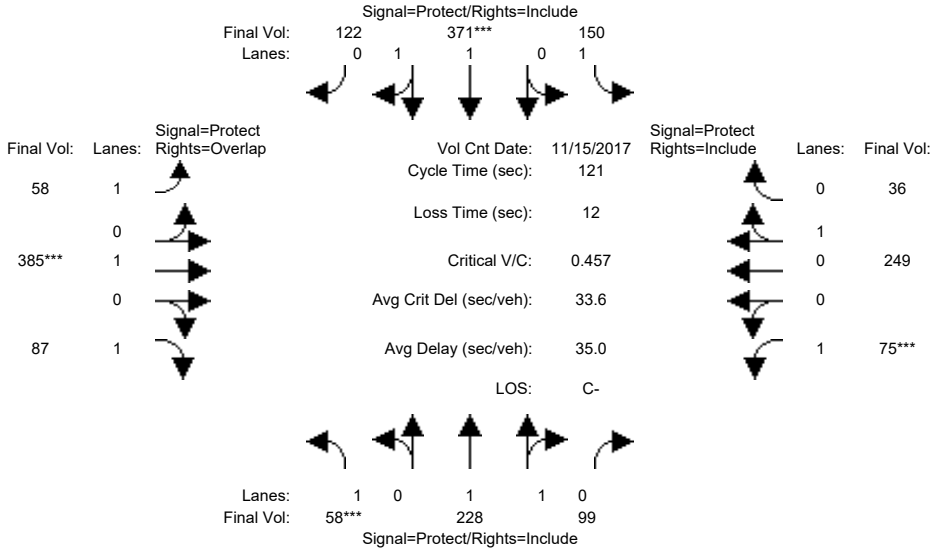
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	92	172	30	33	221	112	62	176	51	30	429	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	172	30	33	221	112	62	176	51	30	429	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	172	30	33	221	112	62	176	51	30	429	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	172	30	33	221	112	62	176	51	30	429	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	172	30	33	221	112	62	176	51	30	429	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	172	30	33	221	112	62	176	51	30	429	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.69	0.31	1.00	1.31	0.69	1.00	1.00	1.00	1.00	0.85	0.15
Final Sat.:	1750	3150	549	1750	2455	1244	1750	1900	1750	1750	1538	262
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.02	0.09	0.09	0.04	0.09	0.03	0.02	0.28	0.28
Crit Moves:	****				****		****				****	
Green Time:	9.6	15.3	15.3	10.7	16.4	16.4	7.0	34.1	43.7	23.9	50.9	50.9
Volume/Cap:	0.53	0.34	0.34	0.17	0.53	0.53	0.49	0.26	0.06	0.07	0.53	0.53
Uniform Del:	41.0	35.9	35.9	38.6	36.2	36.2	42.8	22.0	14.7	27.6	14.7	14.7
IncremntDel:	2.9	0.3	0.3	0.4	0.8	0.8	2.9	0.2	0.0	0.1	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.0	36.2	36.2	39.0	37.0	37.0	45.7	22.2	14.7	27.6	15.2	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.0	36.2	36.2	39.0	37.0	37.0	45.7	22.2	14.7	27.6	15.2	15.2
LOS by Move:	D	D+	D+	D	D+	D+	D	C+	B	C	B	B
HCM2kAvgQ:	4	3	3	1	5	5	2	4	1	1	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #66: Sunnyvale Ave & Evelyn Ave



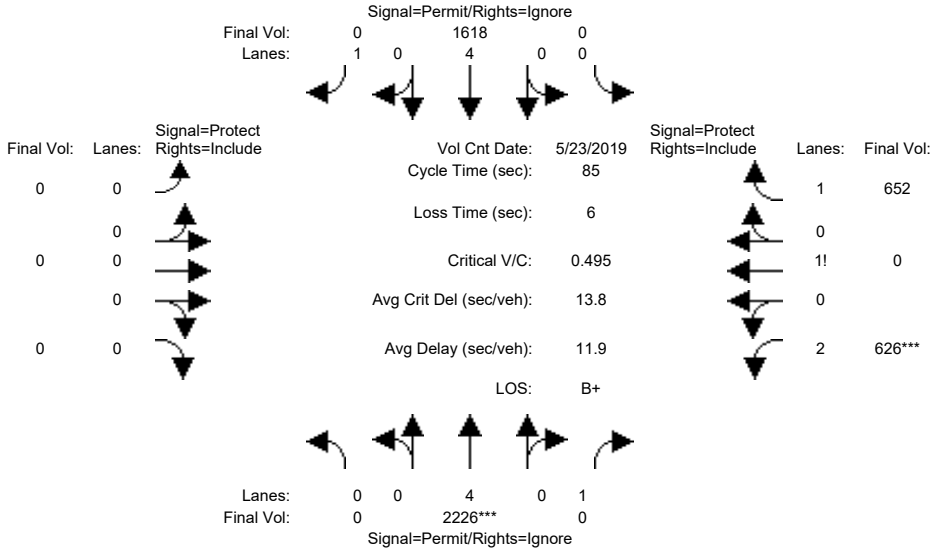
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	58	228	99	150	371	122	58	385	87	75	249	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	228	99	150	371	122	58	385	87	75	249	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	228	99	150	371	122	58	385	87	75	249	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	58	228	99	150	371	122	58	385	87	75	249	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	228	99	150	371	122	58	385	87	75	249	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	228	99	150	371	122	58	385	87	75	249	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.38	0.62	1.00	1.49	0.51	1.00	1.00	1.00	1.00	0.87	0.13
Final Sat.:	1750	2579	1120	1750	2784	915	1750	1900	1750	1750	1573	227
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.09	0.13	0.13	0.03	0.20	0.05	0.04	0.16	0.16
Crit Moves:	****				****			****			****	
Green Time:	8.8	22.4	22.4	21.7	35.3	35.3	17.4	53.6	62.4	11.3	47.6	47.6
Volume/Cap:	0.46	0.48	0.48	0.48	0.46	0.46	0.23	0.46	0.10	0.46	0.40	0.40
Uniform Del:	53.8	44.1	44.1	44.6	35.0	35.0	45.9	23.5	14.9	51.9	26.5	26.5
IncremntDel:	2.6	0.5	0.5	1.2	0.3	0.3	0.5	0.4	0.0	2.0	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.4	44.6	44.6	45.7	35.4	35.4	46.4	23.9	15.0	53.9	26.8	26.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	44.6	44.6	45.7	35.4	35.4	46.4	23.9	15.0	53.9	26.8	26.8
LOS by Move:	E+	D	D	D	D+	D+	D	C	B	D-	C	C
HCM2kAvgQ:	3	6	6	6	8	8	2	10	2	3	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



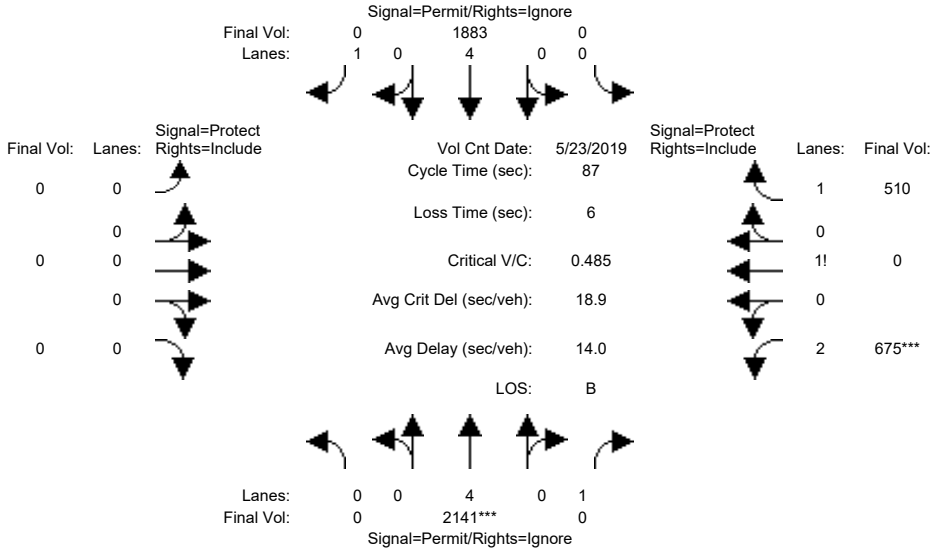
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2226	484	0	1618	371	0	0	0	626	0	652
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2226	484	0	1618	371	0	0	0	626	0	652
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2226	484	0	1618	371	0	0	0	626	0	652
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2226	0	0	1618	0	0	0	0	626	0	652
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2226	0	0	1618	0	0	0	0	626	0	652
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2226	0	0	1618	0	0	0	0	626	0	652
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.81	1.00	0.95
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.43	0.00	1.57
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3735	0	2829
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.17	0.00	0.23
Crit Moves:		****								****		
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	22.7
Volume/Cap:	0.00	0.49	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.63	0.00	0.86
Uniform Del:	0.0	9.6	0.0	0.0	8.6	0.0	0.0	0.0	0.0	27.4	0.0	29.6
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	5.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	5.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0	28.0	0.0	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0	28.0	0.0	35.1
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	D+
HCM2kAvgQ:	0	5	0	0	3	0	0	0	0	8	0	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



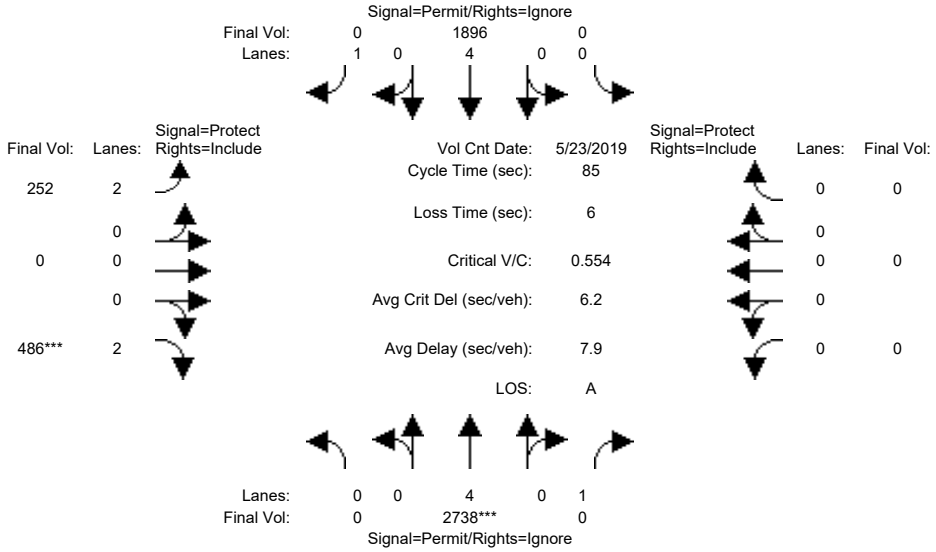
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2141	378	0	1883	344	0	0	0	675	0	510
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2141	378	0	1883	344	0	0	0	675	0	510
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2141	378	0	1883	344	0	0	0	675	0	510
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2141	0	0	1883	0	0	0	0	675	0	510
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2141	0	0	1883	0	0	0	0	675	0	510
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2141	0	0	1883	0	0	0	0	675	0	510
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.84	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.49	0.00	1.51
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3978	0	2640
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.17	0.00	0.19
Crit Moves:		****								****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.46	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.65	0.00	0.74
Uniform Del:	0.0	9.1	0.0	0.0	8.7	0.0	0.0	0.0	0.0	28.6	0.0	29.5
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	0.0	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	29.5	0.0	31.3
LOS by Move:	A	B	A	A	A	A	A	A	A	C	A	C
HCM2kAvgQ:	0	10	0	0	3	0	0	0	0	9	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



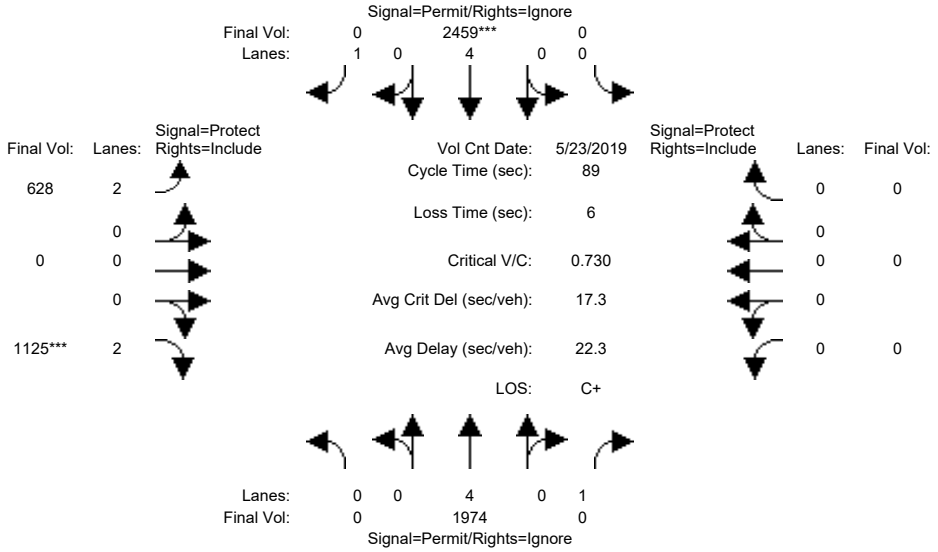
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	2738	584	0	1896	334	252	0	486	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2738	584	0	1896	334	252	0	486	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2738	584	0	1896	334	252	0	486	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2738	0	0	1896	0	252	0	486	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2738	0	0	1896	0	252	0	486	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2738	0	0	1896	0	252	0	486	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.25	0.00	0.08	0.00	0.15	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.00	0.00	0.45	0.00	0.54	0.00	0.71	0.00	0.00	0.00
Uniform Del:	0.0	5.6	0.0	0.0	11.0	0.0	33.5	0.0	30.7	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	1.3	0.0	3.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.2	0.0	0.0	7.3	0.0	34.8	0.0	34.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.2	0.0	0.0	7.3	0.0	34.8	0.0	34.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	C-	A	C-	A	A	A
HCM2kAvgQ:	0	3	0	0	5	0	4	0	8	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



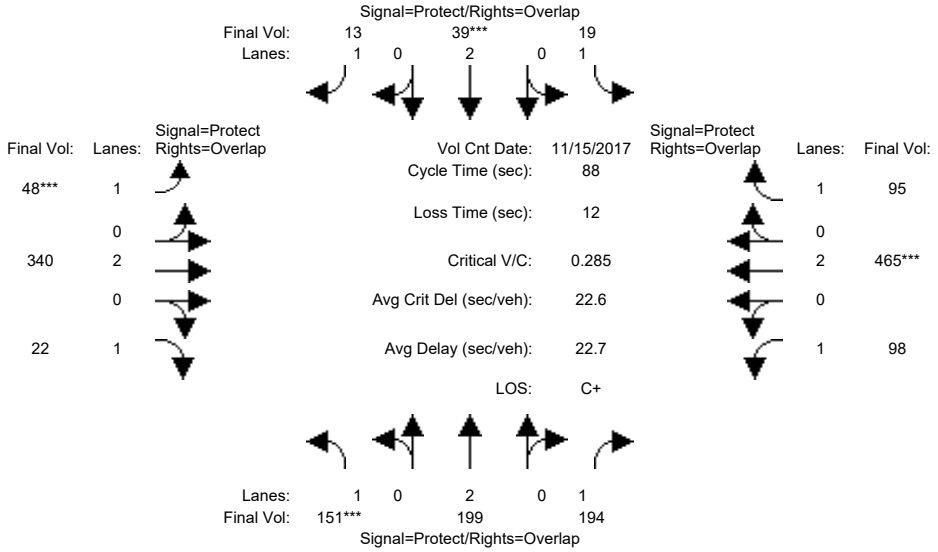
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	1974	352	0	2459	161	628	0	1125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1974	352	0	2459	161	628	0	1125	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1974	352	0	2459	161	628	0	1125	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1974	0	0	2459	0	628	0	1125	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1974	0	0	2459	0	628	0	1125	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1974	0	0	2459	0	628	0	1125	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.00	0.00	0.32	0.00	0.20	0.00	0.36	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.37	0.00	0.00	0.65	0.00	1.13	0.00	0.83	0.00	0.00	0.00
Uniform Del:	0.0	5.6	0.0	0.0	16.4	0.0	36.7	0.0	22.4	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.0	79.3	0.0	4.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.6	0.0	0.0	12.9	0.0	116.0	0.0	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.6	0.0	0.0	12.9	0.0	116.0	0.0	26.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B	A	F	A	C	A	A	A
HCM2kAvgQ:	0	2	0	0	11	0	19	0	19	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #72: Oakmead Pkwy & Scott Blvd



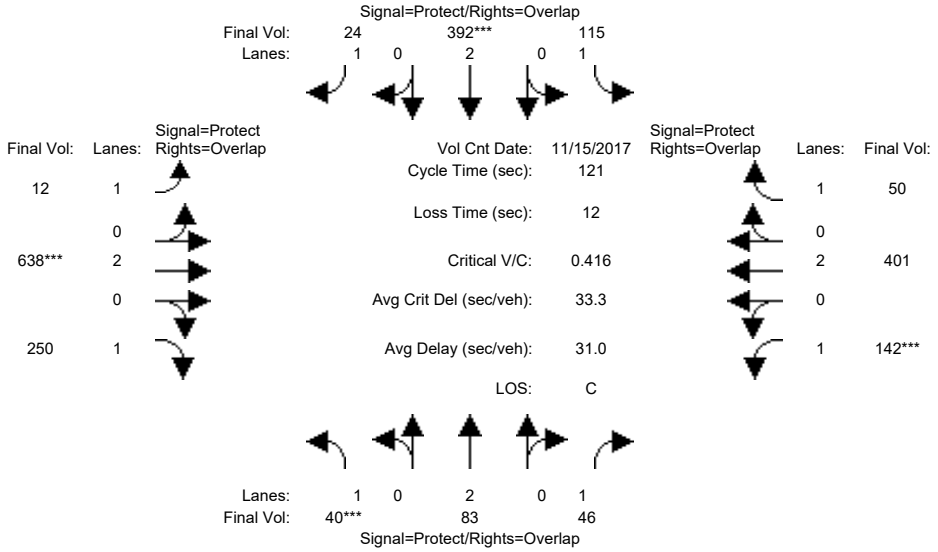
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	151	199	194	19	39	13	48	340	22	98	465	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	151	199	194	19	39	13	48	340	22	98	465	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	151	199	194	19	39	13	48	340	22	98	465	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	151	199	194	19	39	13	48	340	22	98	465	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	199	194	19	39	13	48	340	22	98	465	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	151	199	194	19	39	13	48	340	22	98	465	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.05	0.11	0.01	0.01	0.01	0.03	0.09	0.01	0.06	0.12	0.05
Crit Moves:	****				****		****				****	
Green Time:	24.1	20.1	37.3	14.1	10.0	17.7	7.7	24.6	48.8	17.2	34.2	48.3
Volume/Cap:	0.31	0.23	0.26	0.07	0.09	0.04	0.31	0.32	0.02	0.29	0.31	0.10
Uniform Del:	25.4	27.7	16.4	31.4	34.9	28.3	37.7	25.1	8.9	30.1	18.7	9.5
IncremntDel:	0.4	0.1	0.2	0.1	0.1	0.0	1.2	0.2	0.0	0.5	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.8	27.8	16.6	31.5	35.0	28.4	38.9	25.2	8.9	30.6	18.9	9.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.8	27.8	16.6	31.5	35.0	28.4	38.9	25.2	8.9	30.6	18.9	9.5
LOS by Move:	C	C	B	C	D+	C	D+	C	A	C	B-	A
HCM2kAvgQ:	3	2	4	1	1	0	1	4	0	2	4	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #72: Oakmead Pkwy & Scott Blvd



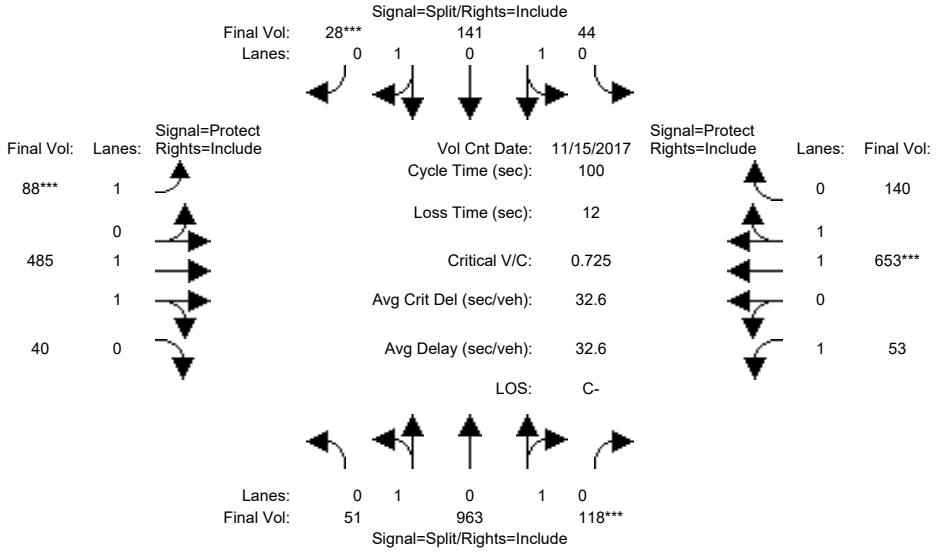
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	40	83	46	115	392	24	12	638	250	142	401	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	83	46	115	392	24	12	638	250	142	401	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	83	46	115	392	24	12	638	250	142	401	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	83	46	115	392	24	12	638	250	142	401	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	83	46	115	392	24	12	638	250	142	401	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	83	46	115	392	24	12	638	250	142	401	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.03	0.07	0.10	0.01	0.01	0.17	0.14	0.08	0.11	0.03
Crit Moves:	****				****			****		****		
Green Time:	7.0	20.5	44.0	16.3	29.9	55.4	25.5	48.6	55.6	23.5	46.6	62.9
Volume/Cap:	0.40	0.13	0.07	0.49	0.42	0.03	0.03	0.42	0.31	0.42	0.27	0.05
Uniform Del:	55.0	42.6	25.1	48.5	38.3	18.0	37.9	26.0	20.6	42.8	25.6	14.3
IncremntDel:	2.5	0.1	0.0	1.6	0.3	0.0	0.0	0.2	0.2	0.8	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.5	42.7	25.2	50.0	38.6	18.0	38.0	26.2	20.8	43.6	25.7	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.5	42.7	25.2	50.0	38.6	18.0	38.0	26.2	20.8	43.6	25.7	14.4
LOS by Move:	E+	D	C	D	D+	B-	D+	C	C+	D	C	B
HCM2kAvgQ:	2	1	1	5	6	1	0	8	6	5	5	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #77: Bowers Ave & Monroe St



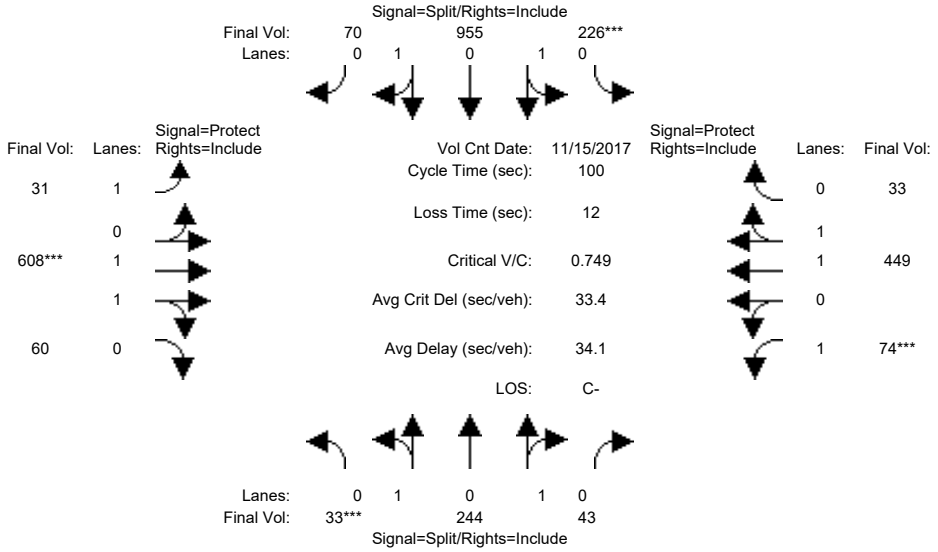
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	45	847	104	39	124	25	77	427	35	47	575	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	847	104	39	124	25	77	427	35	47	575	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	847	104	39	124	25	77	427	35	47	575	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	51	963	118	44	141	28	88	485	40	53	653	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	963	118	44	141	28	88	485	40	53	653	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	963	118	44	141	28	88	485	40	53	653	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.09	1.70	0.21	0.41	1.32	0.27	1.00	1.84	0.16	1.00	1.64	0.36
Final Sat.:	163	3061	376	747	2374	479	1750	3419	280	1750	3048	652
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.31	0.06	0.06	0.06	0.05	0.14	0.14	0.03	0.21	0.21
Crit Moves:			****			****	****				****	
Green Time:	43.4	43.4	43.4	8.2	8.2	8.2	6.9	27.0	27.0	9.5	29.6	29.6
Volume/Cap:	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.53	0.53	0.32	0.73	0.73
Uniform Del:	23.4	23.4	23.4	44.8	44.8	44.8	45.6	31.1	31.1	42.2	31.6	31.6
IncremntDel:	1.7	1.7	1.7	8.7	8.7	8.7	19.6	0.5	0.5	1.1	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.1	25.1	25.1	53.5	53.5	53.5	65.2	31.6	31.6	43.4	34.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.1	25.1	25.1	53.5	53.5	53.5	65.2	31.6	31.6	43.4	34.0	34.0
LOS by Move:	C	C	C	D-	D-	D-	E	C	C	D	C-	C-
HCM2kAvgQ:	15	15	15	4	4	4	3	7	7	2	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #77: Bowers Ave & Monroe St



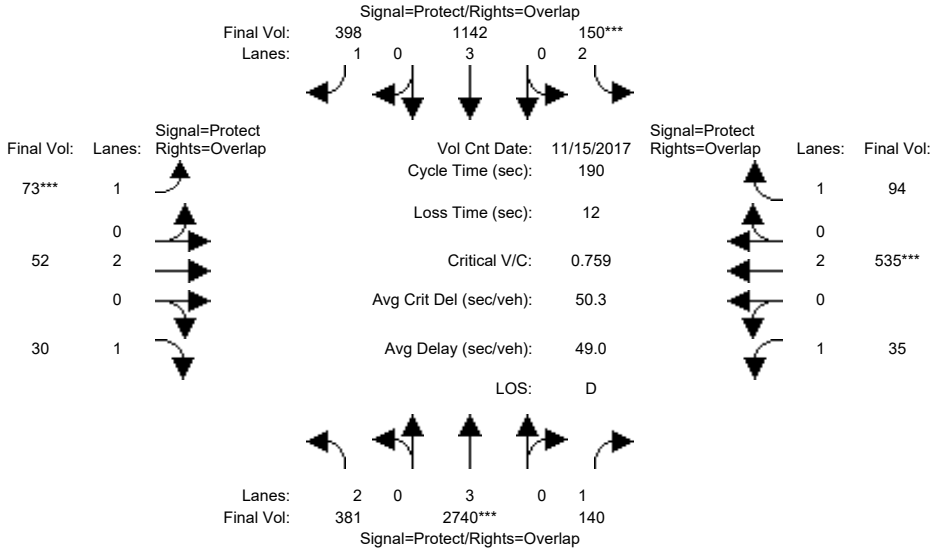
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	32	234	41	217	917	67	30	584	58	71	431	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	234	41	217	917	67	30	584	58	71	431	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	234	41	217	917	67	30	584	58	71	431	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	33	244	43	226	955	70	31	608	60	74	449	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	244	43	226	955	70	31	608	60	74	449	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	244	43	226	955	70	31	608	60	74	449	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.21	1.52	0.27	0.36	1.53	0.11	1.00	1.81	0.19	1.00	1.86	0.14
Final Sat.:	375	2744	481	650	2749	201	1750	3365	334	1750	3444	256
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.35	0.35	0.35	0.02	0.18	0.18	0.04	0.13	0.13
Crit Moves:	****			****				****		****		
Green Time:	11.9	11.9	11.9	46.4	46.4	46.4	8.3	24.1	24.1	5.6	21.5	21.5
Volume/Cap:	0.75	0.75	0.75	0.75	0.75	0.75	0.22	0.75	0.75	0.75	0.61	0.61
Uniform Del:	42.6	42.6	42.6	22.0	22.0	22.0	42.9	35.1	35.1	46.5	35.4	35.4
IncremntDel:	7.2	7.2	7.2	1.9	1.9	1.9	0.8	3.6	3.6	26.8	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.8	49.8	49.8	24.0	24.0	24.0	43.6	38.7	38.7	73.3	36.8	36.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	49.8	49.8	24.0	24.0	24.0	43.6	38.7	38.7	73.3	36.8	36.8
LOS by Move:	D	D	D	C	C	C	D	D+	D+	E	D+	D+
HCM2kAvgQ:	5	5	5	16	16	16	1	10	10	3	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #79: San Tomas Expwy & Walsh Ave



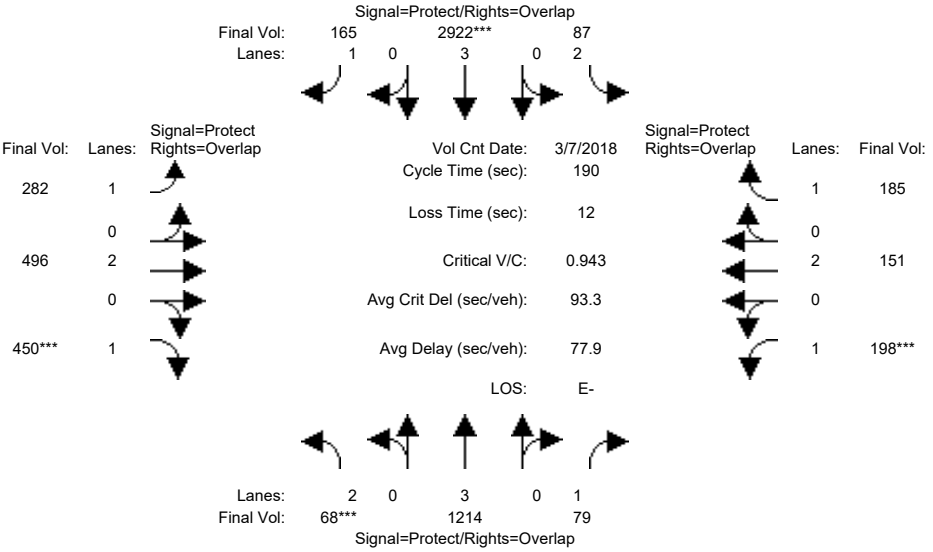
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	381	3223	140	150	1343	398	73	52	30	35	535	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	381	3223	140	150	1343	398	73	52	30	35	535	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	381	3223	140	150	1343	398	73	52	30	35	535	94
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	381	2740	140	150	1142	398	73	52	30	35	535	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	381	2740	140	150	1142	398	73	52	30	35	535	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	381	2740	140	150	1142	398	73	52	30	35	535	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.48	0.08	0.05	0.20	0.23	0.04	0.01	0.02	0.02	0.14	0.05
Crit Moves:		****		****			****				****	
Green Time:	23.1	103	114.0	15.1	95.1	108.5	13.4	38.8	61.9	11.0	36.0	51.1
Volume/Cap:	0.99	0.89	0.13	0.60	0.40	0.40	0.59	0.07	0.05	0.35	0.74	0.20
Uniform Del:	83.4	38.4	16.5	84.5	29.6	22.6	85.7	61.0	43.9	86.0	72.6	53.6
IncremntDel:	44.5	3.5	0.1	4.0	0.1	0.3	7.5	0.0	0.0	2.0	4.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	127.9	41.8	16.6	88.5	29.7	22.9	93.1	61.0	44.0	88.1	76.8	53.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	127.9	41.8	16.6	88.5	29.7	22.9	93.1	61.0	44.0	88.1	76.8	53.9
LOS by Move:	F	D	B	F	C	C+	F	E	D	F	E-	D-
HCM2kAvgQ:	14	46	4	5	13	13	4	1	1	2	16	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #79: San Tomas Expwy & Walsh Ave



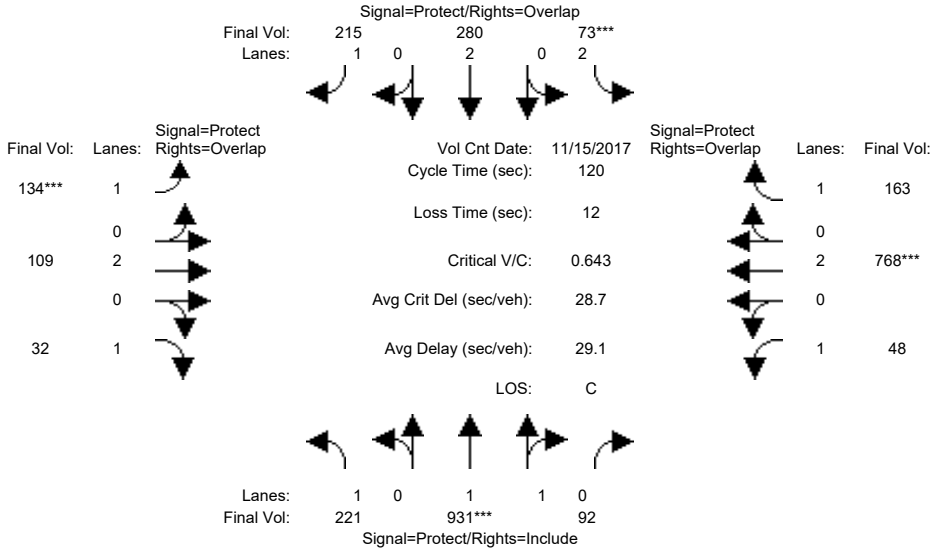
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	68	1640	79	87	3564	165	282	496	450	198	151	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1640	79	87	3564	165	282	496	450	198	151	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	1640	79	87	3564	165	282	496	450	198	151	185
User Adj:	1.00	0.74	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	1214	79	87	2922	165	282	496	450	198	151	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1214	79	87	2922	165	282	496	450	198	151	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1214	79	87	2922	165	282	496	450	198	151	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.21	0.05	0.03	0.51	0.09	0.16	0.13	0.26	0.11	0.04	0.11
Crit Moves:	****				****				****	****		
Green Time:	11.9	91.6	111.5	10.9	90.7	118.3	27.6	45.4	57.3	19.9	37.3	48.2
Volume/Cap:	0.34	0.44	0.08	0.48	1.07	0.15	1.11	0.55	0.85	1.08	0.20	0.42
Uniform Del:	85.3	32.4	17.0	86.8	49.6	14.9	81.2	63.3	62.4	85.1	63.9	59.2
IncremntDel:	1.1	0.1	0.0	2.0	41.1	0.1	88.8	0.7	12.7	89.6	0.1	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	86.4	32.5	17.0	88.8	90.7	15.0	170.0	64.0	75.1	174.7	64.0	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.4	32.5	17.0	88.8	90.7	15.0	170.0	64.0	75.1	174.7	64.0	59.8
LOS by Move:	F	C-	B	F	F	B	F	E	E-	F	E	E+
HCM2kAvgQ:	2	15	2	3	64	4	22	12	27	18	4	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #84: Bowers Ave & Kifer Rd



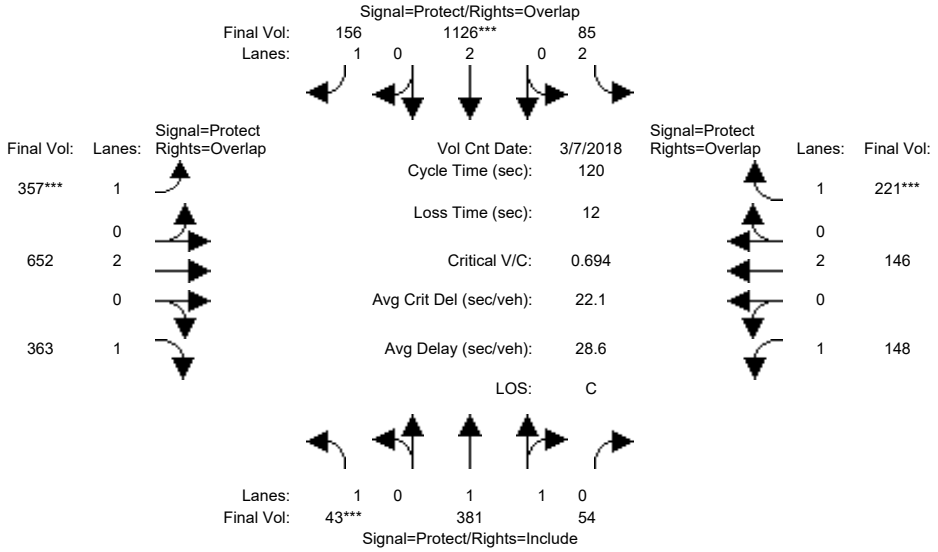
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	847	84	66	255	196	122	99	29	44	699	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	847	84	66	255	196	122	99	29	44	699	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	847	84	66	255	196	122	99	29	44	699	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	931	92	73	280	215	134	109	32	48	768	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	931	92	73	280	215	134	109	32	48	768	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	931	92	73	280	215	134	109	32	48	768	163
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.81	0.19	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3366	334	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.28	0.28	0.02	0.07	0.12	0.08	0.03	0.02	0.03	0.20	0.09
Crit Moves:		****		****			****				****	
Green Time:	34.8	49.8	49.8	8.0	23.0	36.8	13.8	25.1	59.9	25.1	36.4	44.4
Volume/Cap:	0.44	0.67	0.67	0.35	0.38	0.40	0.67	0.14	0.04	0.13	0.67	0.25
Uniform Del:	34.6	28.4	28.4	53.5	42.3	32.9	50.9	38.6	15.3	38.6	36.5	26.3
IncremntDel:	0.6	1.1	1.1	1.0	0.3	0.5	8.2	0.1	0.0	0.2	1.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.73	0.53	0.53	0.95	0.84	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.8	16.1	16.1	51.9	36.0	23.7	59.1	38.7	15.3	38.8	38.0	26.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.8	16.1	16.1	51.9	36.0	23.7	59.1	38.7	15.3	38.8	38.0	26.5
LOS by Move:	C	B	B	D-	D+	C	E+	D+	B	D+	D+	C
HCM2kAvgQ:	5	11	11	1	4	5	5	2	1	1	12	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #84: Bowers Ave & Kifer Rd



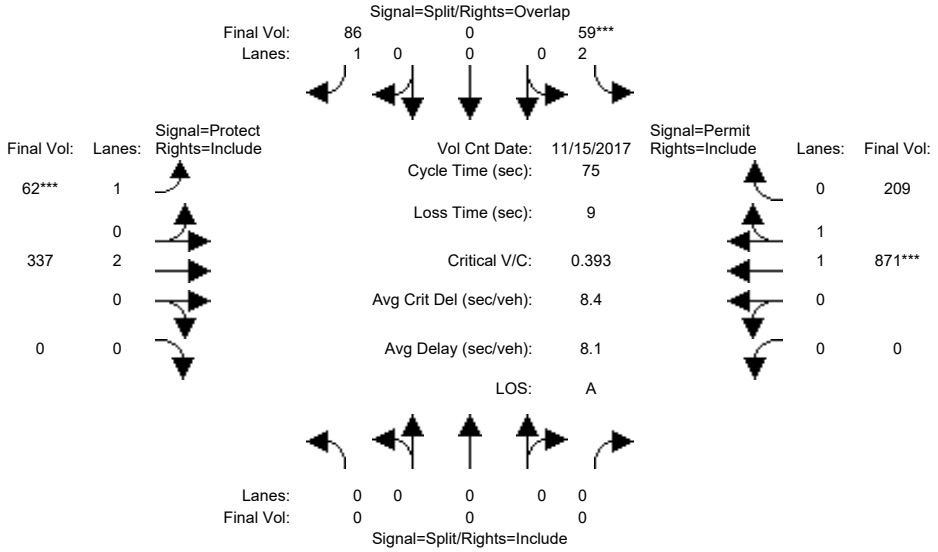
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	377	53	84	1115	154	353	645	359	147	145	219
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	377	53	84	1115	154	353	645	359	147	145	219
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	377	53	84	1115	154	353	645	359	147	145	219
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	43	381	54	85	1126	156	357	652	363	148	146	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	381	54	85	1126	156	357	652	363	148	146	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	381	54	85	1126	156	357	652	363	148	146	221
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.75	0.25	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3244	456	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.12	0.03	0.30	0.09	0.20	0.17	0.21	0.08	0.04	0.13
Crit Moves:	****				****		****					****
Green Time:	5.0	38.0	38.0	21.6	54.5	92.0	37.5	33.1	38.1	15.4	11.0	32.5
Volume/Cap:	0.60	0.37	0.37	0.15	0.65	0.12	0.65	0.62	0.65	0.66	0.42	0.47
Uniform Del:	56.5	31.8	31.8	41.5	25.4	3.6	35.6	38.0	35.3	49.8	51.5	36.5
IncremntDel:	12.7	0.2	0.2	0.1	0.9	0.0	2.8	1.2	2.8	7.2	0.8	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.69	0.69	0.85	0.44	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.6	22.2	22.2	35.6	12.2	0.0	38.4	39.2	38.1	57.0	52.3	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	22.2	22.2	35.6	12.2	0.0	38.4	39.2	38.1	57.0	52.3	37.2
LOS by Move:	E	C+	C+	D+	B	A	D+	D	D+	E+	D-	D+
HCM2kAvgQ:	2	5	5	1	10	0	12	10	12	6	3	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #85: Corvin Dr & Kifer Rd



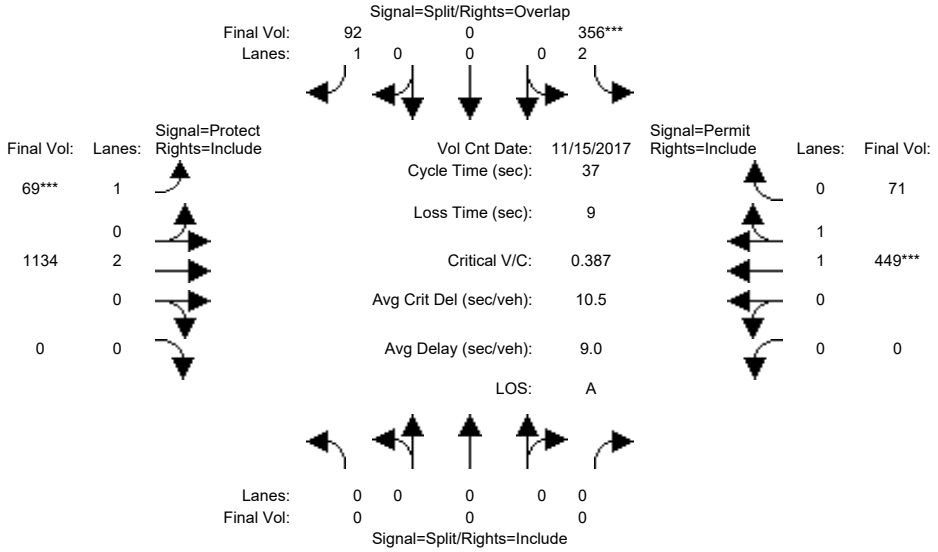
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	53	0	77	56	303	0	0	784	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	53	0	77	56	303	0	0	784	188
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	53	0	77	56	303	0	0	784	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	86	62	337	0	0	871	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	59	0	86	62	337	0	0	871	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	59	0	86	62	337	0	0	871	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.60	0.40
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2984	716
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.05	0.04	0.09	0.00	0.00	0.29	0.29
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	9.3	0.0	15.5	6.2	56.7	0.0	0.0	50.5	50.5
Volume/Cap:	0.00	0.00	0.00	0.15	0.00	0.24	0.43	0.12	0.00	0.00	0.43	0.43
Uniform Del:	0.0	0.0	0.0	29.3	0.0	24.8	32.8	2.5	0.0	0.0	5.6	5.6
IncremntDel:	0.0	0.0	0.0	0.2	0.0	0.3	2.1	0.0	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.5	0.0	25.2	34.9	2.5	0.0	0.0	5.8	5.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.5	0.0	25.2	34.9	2.5	0.0	0.0	5.8	5.8
LOS by Move:	A	A	A	C	A	C	C-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	2	1	1	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #85: Corvin Dr & Kifer Rd



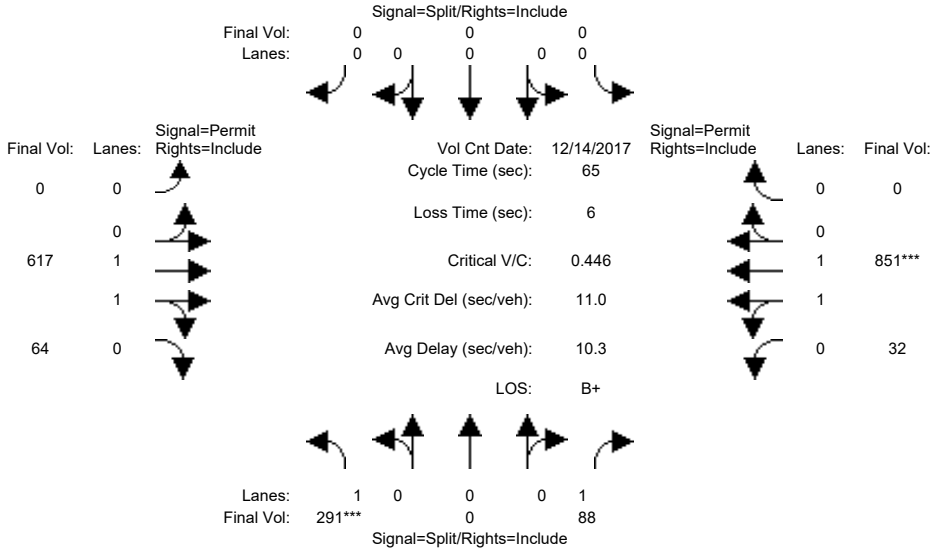
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	317	0	82	61	1009	0	0	400	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	317	0	82	61	1009	0	0	400	63
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	317	0	82	61	1009	0	0	400	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	356	0	92	69	1134	0	0	449	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	356	0	92	69	1134	0	0	449	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	356	0	92	69	1134	0	0	449	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.72	0.28
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3196	503
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.05	0.04	0.30	0.00	0.00	0.14	0.14
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.3	0.0	15.3	5.0	17.7	0.0	0.0	12.7	12.7
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.13	0.29	0.62	0.00	0.00	0.41	0.41
Uniform Del:	0.0	0.0	0.0	10.9	0.0	6.7	14.4	7.1	0.0	0.0	9.2	9.2
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.1	0.7	0.7	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.2	0.0	6.8	15.1	7.8	0.0	0.0	9.5	9.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.2	0.0	6.8	15.1	7.8	0.0	0.0	9.5	9.5
LOS by Move:	A	A	A	B+	A	A	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	1	1	5	0	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #86: Calabazas Blvd & Monroe St



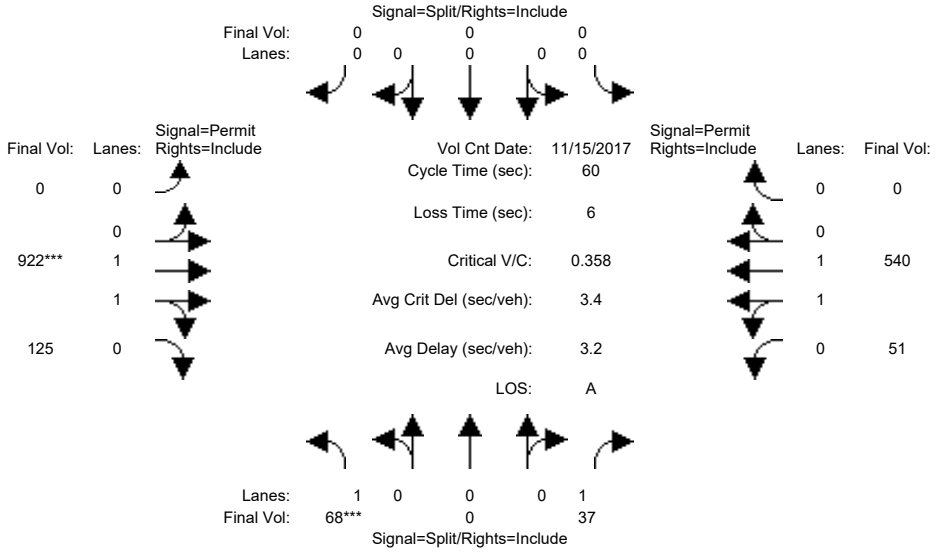
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 14 Dec 2017 << 7:15 AM - 8:15 AM												
Base Vol:	201	0	61	0	0	0	0	426	44	22	587	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	0	61	0	0	0	0	426	44	22	587	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	0	61	0	0	0	0	426	44	22	587	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	291	0	88	0	0	0	0	617	64	32	851	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	291	0	88	0	0	0	0	617	64	32	851	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	291	0	88	0	0	0	0	617	64	32	851	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.97	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.81	0.19	0.07	1.93	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3353	346	134	3566	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.05	0.00	0.00	0.00	0.00	0.18	0.18	0.24	0.24	0.00
Crit Moves:	****										****	
Green Time:	24.2	0.0	24.2	0.0	0.0	0.0	0.0	34.8	34.8	34.8	34.8	0.0
Volume/Cap:	0.45	0.00	0.14	0.00	0.00	0.00	0.00	0.34	0.34	0.45	0.45	0.00
Uniform Del:	15.3	0.0	13.5	0.0	0.0	0.0	0.0	8.6	8.6	9.2	9.2	0.0
IncremntDel:	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	15.8	0.0	13.5	0.0	0.0	0.0	0.0	8.7	8.7	9.4	9.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.8	0.0	13.5	0.0	0.0	0.0	0.0	8.7	8.7	9.4	9.4	0.0
LOS by Move:	B	A	B	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	5	0	1	0	0	0	0	4	4	6	6	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #86: Calabazas Blvd & Monroe St



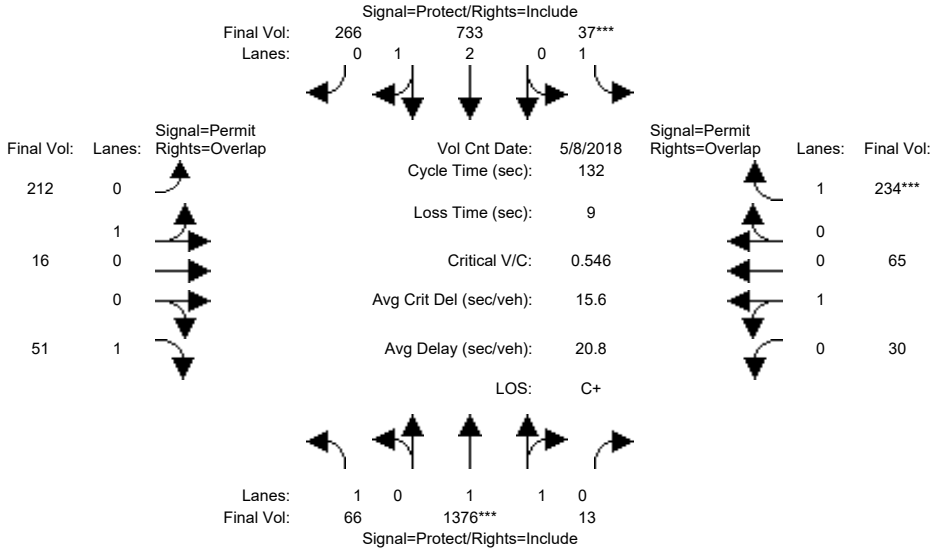
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	65	0	35	0	0	0	0	876	119	48	513	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	0	35	0	0	0	0	876	119	48	513	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	35	0	0	0	0	876	119	48	513	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	0	37	0	0	0	0	922	125	51	540	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	0	37	0	0	0	0	922	125	51	540	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	0	37	0	0	0	0	922	125	51	540	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.98	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.75	0.25	0.18	1.82	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3257	442	317	3383	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.28	0.28	0.16	0.16	0.00
Crit Moves:	****							****				
Green Time:	6.6	0.0	6.6	0.0	0.0	0.0	0.0	47.4	47.4	47.4	47.4	0.0
Volume/Cap:	0.36	0.00	0.19	0.00	0.00	0.00	0.00	0.36	0.36	0.20	0.20	0.00
Uniform Del:	24.8	0.0	24.3	0.0	0.0	0.0	0.0	1.8	1.8	1.6	1.6	0.0
IncremntDel:	1.2	0.0	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	25.9	0.0	24.8	0.0	0.0	0.0	0.0	1.9	1.9	1.6	1.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.9	0.0	24.8	0.0	0.0	0.0	0.0	1.9	1.9	1.6	1.6	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	2	0	1	0	0	0	0	3	3	2	2	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



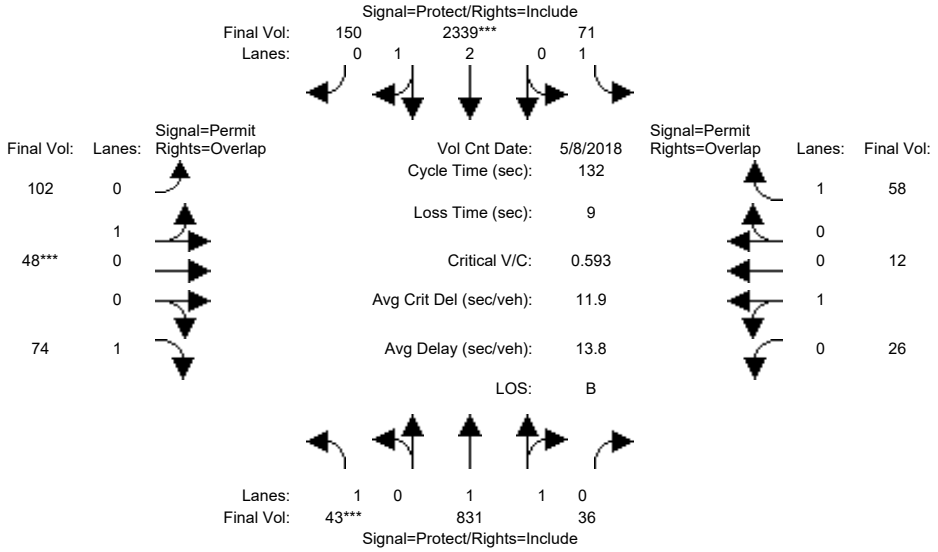
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	66	1376	13	37	733	266	212	16	51	30	65	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	1376	13	37	733	266	212	16	51	30	65	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	1376	13	37	733	266	212	16	51	30	65	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1376	13	37	733	266	212	16	51	30	65	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1376	13	37	733	266	212	16	51	30	65	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	1376	13	37	733	266	212	16	51	30	65	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	1.00	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.17	0.83	0.93	0.07	1.00	0.32	0.68	1.00
Final Sat.:	1750	3665	35	1750	4107	1490	1674	126	1750	568	1232	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.38	0.38	0.02	0.18	0.18	0.13	0.13	0.03	0.05	0.05	0.13
Crit Moves:		****		****								****
Green Time:	23.5	95.5	95.5	7.0	79.0	79.0	20.5	20.5	44.0	20.5	20.5	27.5
Volume/Cap:	0.21	0.52	0.52	0.40	0.30	0.30	0.81	0.81	0.09	0.34	0.34	0.64
Uniform Del:	46.4	8.1	8.1	60.5	12.9	12.9	53.9	53.9	30.2	49.7	49.7	47.7
IncremntDel:	0.3	0.2	0.2	2.8	0.1	0.1	16.6	16.6	0.1	0.7	0.7	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.7	8.3	8.3	63.3	13.0	13.0	70.5	70.5	30.3	50.4	50.4	51.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	8.3	8.3	63.3	13.0	13.0	70.5	70.5	30.3	50.4	50.4	51.6
LOS by Move:	D	A	A	E	B	B	E	E	C	D	D	D-
HCM2kAvgQ:	2	12	12	2	6	6	12	12	1	4	4	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



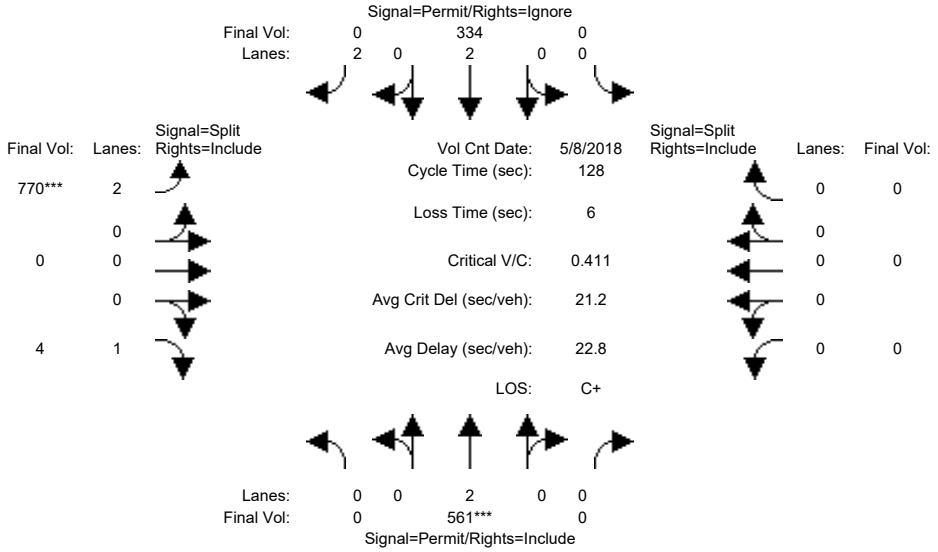
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	43	831	36	71	2339	150	102	48	74	26	12	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	831	36	71	2339	150	102	48	74	26	12	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	831	36	71	2339	150	102	48	74	26	12	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	831	36	71	2339	150	102	48	74	26	12	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	831	36	71	2339	150	102	48	74	26	12	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	831	36	71	2339	150	102	48	74	26	12	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.91	0.09	1.00	2.81	0.19	0.68	0.32	1.00	0.68	0.32	1.00
Final Sat.:	1750	3546	154	1750	5262	337	1224	576	1750	1232	568	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.23	0.04	0.44	0.44	0.08	0.08	0.04	0.02	0.02	0.03
Crit Moves:	****				****			****				
Green Time:	7.0	85.4	85.4	19.3	97.7	97.7	18.3	18.3	25.3	18.3	18.3	37.6
Volume/Cap:	0.46	0.36	0.36	0.28	0.60	0.60	0.60	0.60	0.22	0.15	0.15	0.12
Uniform Del:	60.7	10.8	10.8	50.1	8.0	8.0	53.4	53.4	45.0	50.0	50.0	34.9
IncremntDel:	3.6	0.1	0.1	0.6	0.2	0.2	4.0	4.0	0.3	0.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.3	10.9	10.9	50.7	8.3	8.3	57.4	57.4	45.4	50.3	50.3	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.3	10.9	10.9	50.7	8.3	8.3	57.4	57.4	45.4	50.3	50.3	35.0
LOS by Move:	E	B+	B+	D	A	A	E+	E+	D	D	D	C-
HCM2kAvgQ:	2	8	8	3	16	16	7	7	3	1	1	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #92: Fair Oaks Ave & Wolfe Rd



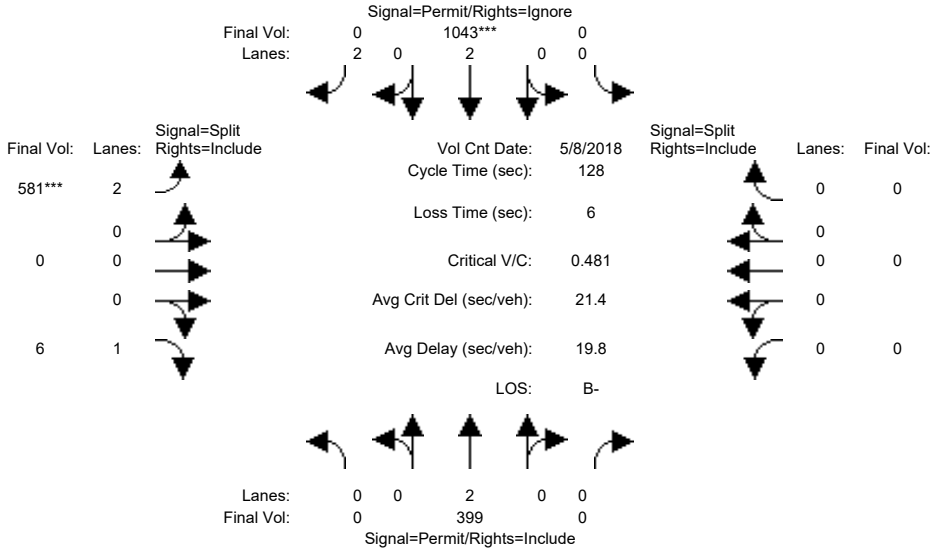
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	561	0	0	334	574	770	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	561	0	0	334	574	770	0	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	561	0	0	334	574	770	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	561	0	0	334	0	770	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	561	0	0	334	0	770	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	561	0	0	334	0	770	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.09	0.00	0.24	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	45.9	0.0	0.0	45.9	0.0	76.1	0.0	76.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.41	0.00	0.00	0.24	0.00	0.41	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	30.9	0.0	0.0	28.8	0.0	13.9	0.0	10.6	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	31.1	0.0	0.0	28.9	0.0	14.1	0.0	10.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.1	0.0	0.0	28.9	0.0	14.1	0.0	10.6	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B	A	B+	A	A	A
HCM2kAvgQ:	0	8	0	0	4	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #92: Fair Oaks Ave & Wolfe Rd



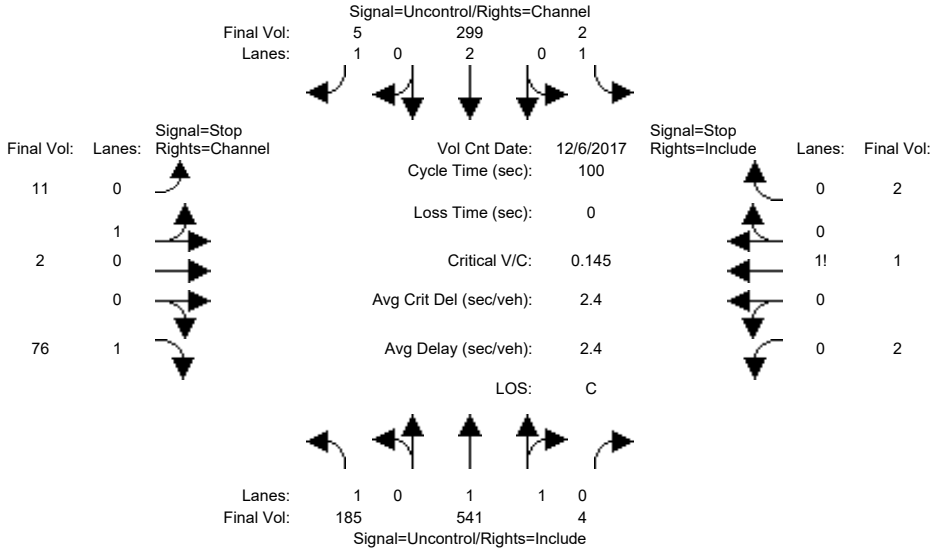
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	399	0	0	1043	1080	581	0	6	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	399	0	0	1043	1080	581	0	6	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	399	0	0	1043	1080	581	0	6	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	399	0	0	1043	0	581	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	399	0	0	1043	0	581	0	6	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	399	0	0	1043	0	581	0	6	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.00	0.00	0.27	0.00	0.18	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	73.0	0.0	0.0	73.0	0.0	49.0	0.0	49.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.18	0.00	0.00	0.48	0.00	0.48	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	13.2	0.0	0.0	16.3	0.0	29.9	0.0	24.4	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.3	0.0	0.0	16.5	0.0	30.2	0.0	24.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.3	0.0	0.0	16.5	0.0	30.2	0.0	24.4	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	C	A	C	A	A	A
HCM2kAvgQ:	0	4	0	0	12	0	10	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing AM

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	185	541	4	2	299	5	11	2	76	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	541	4	2	299	5	11	2	76	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	541	4	2	299	5	11	2	76	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	541	4	2	299	5	11	2	76	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	185	541	4	2	299	5	11	2	76	2	1	2
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	299	xxxx	xxxxx	545	xxxx	xxxxx	944	1218	150	1068	1216	273
Potent Cap.:	1274	xxxx	xxxxx	1034	xxxx	xxxxx	220	182	877	179	183	731
Move Cap.:	1274	xxxx	xxxxx	1034	xxxx	xxxxx	194	155	877	144	156	731
Volume/Cap:	0.15	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.01	0.09	0.01	0.01	0.00
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx
Control Del:	8.3	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	9.5	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	A	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	187	xxxx	xxxxx	xxxx	217	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	25.7	xxxx	xxxxx	xxxxx	22.0	xxxxx
Shared LOS:	*	*	*	*	*	*	D	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.9			22.0		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 2	0 1		0 1 0	0 1		0 0 1!	0 0	
Initial Vol:	185	541	4	2	299	5	11	2	76	2	1	2
ApproachDel:	xxxxxx			xxxxxx			11.9			22.0		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=89]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1130]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1130]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0 1	1 0		1 0 2	0 1		0 1 0	0 1		0 0 1!	0 0	
Initial Vol:	185	541	4	2	299	5	11	2	76	2	1	2

Major Street Volume: 1036
Minor Approach Volume: 89
Minor Approach Volume Threshold: 359

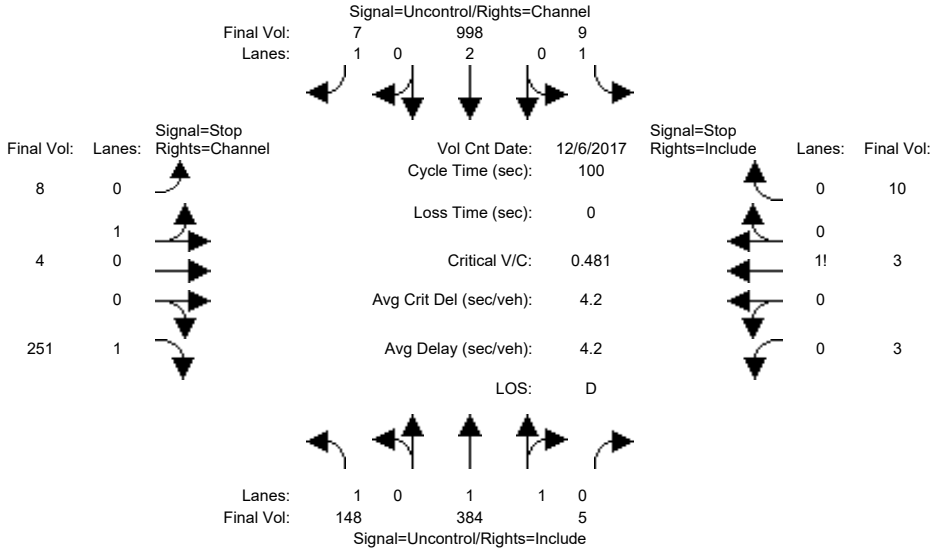
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #93: Wolfe Rd & Maude Ave



Street Name:	Wolfe Rd						Maude Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	148	384	5	9	998	7	8	4	251	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	384	5	9	998	7	8	4	251	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	384	5	9	998	7	8	4	251	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	384	5	9	998	7	8	4	251	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	148	384	5	9	998	7	8	4	251	3	3	10
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	998	xxxx	xxxxx	389	xxxx	xxxxx	1506	1701	499	1202	1699	195
Potent Cap.:	701	xxxx	xxxxx	1181	xxxx	xxxxx	85	93	522	143	93	820
Move Cap.:	701	xxxx	xxxxx	1181	xxxx	xxxxx	68	73	522	59	73	820
Volume/Cap:	0.21	xxxx	xxxx	0.01	xxxx	xxxx	0.12	0.05	0.48	0.05	0.04	0.01
Level Of Service Module:												
2Way95thQ:	0.8	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	2.6	xxxx	xxxx	xxxxx
Control Del:	11.5	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	18.1	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	C	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	69	xxxx	xxxxx	xxxx	154	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	67.4	xxxx	xxxxx	xxxxx	31.1	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			20.4			31.1		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	148	384	5	9	998	7	8	4	251	3	3	10
ApproachDel:	xxxxxx			xxxxxx			20.4			31.1		

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=263]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1830]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=16]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1830]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #93 Wolfe Rd & Maude Ave

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1 1	0	1 0	2 0	1	0 1	0 0	1	0 0	1! 0	0
Initial Vol:	148	384	5	9	998	7	8	4	251	3	3	10

Major Street Volume: 1551
Minor Approach Volume: 263
Minor Approach Volume Threshold: 185

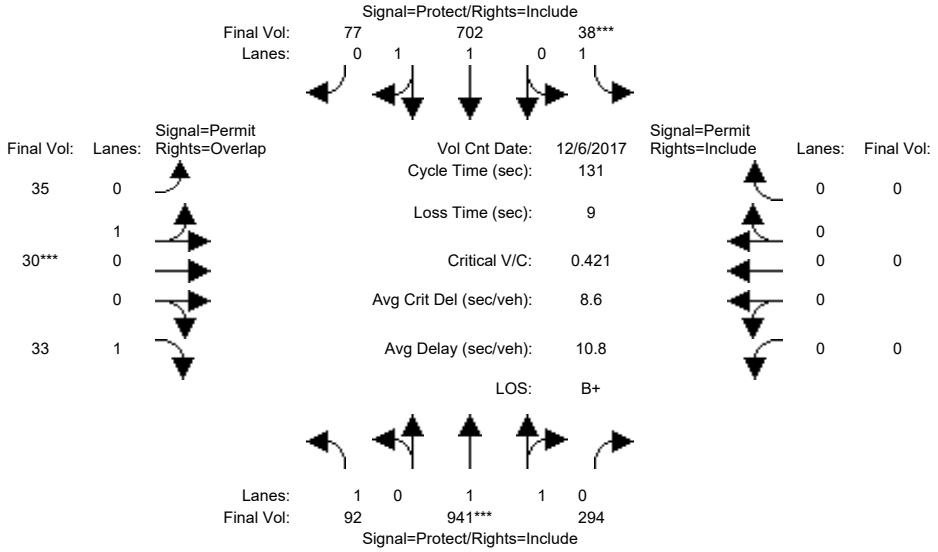
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #95: Fair Oaks Ave & California Ave



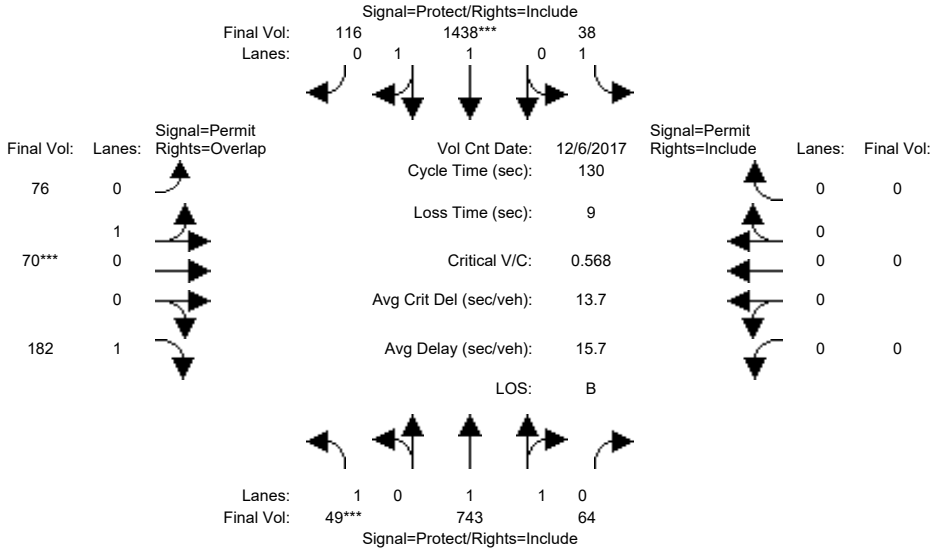
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	92	941	294	38	702	77	35	30	33	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	941	294	38	702	77	35	30	33	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	941	294	38	702	77	35	30	33	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	941	294	38	702	77	35	30	33	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	941	294	38	702	77	35	30	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	941	294	38	702	77	35	30	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.51	0.49	1.00	1.80	0.20	0.54	0.46	1.00	0.00	0.00	0.00
Final Sat.:	1750	2819	881	1750	3334	366	969	831	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.33	0.02	0.21	0.21	0.04	0.04	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	22.4	104	103.8	7.0	88.4	88.4	11.2	11.2	33.6	0.0	0.0	0.0
Volume/Cap:	0.31	0.42	0.42	0.41	0.31	0.31	0.42	0.42	0.07	0.00	0.00	0.00
Uniform Del:	47.5	4.2	4.2	60.0	8.8	8.8	56.8	56.8	36.9	0.0	0.0	0.0
IncremntDel:	0.6	0.1	0.1	2.9	0.1	0.1	1.9	1.9	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	36.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.1	4.3	4.3	62.9	8.9	8.9	58.7	58.7	36.9	0.0	0.0	0.0
LOS by Move:	D	A	A	E	A	A	E+	E+	D+	A	A	A
HCM2kAvgQ:	3	8	8	2	6	6	3	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #95: Fair Oaks Ave & California Ave



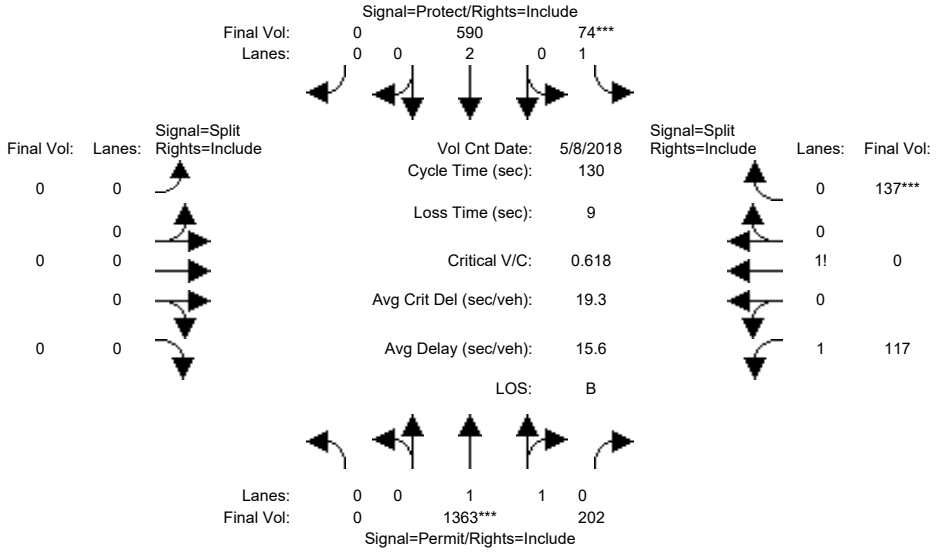
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	49	743	64	38	1438	116	76	70	182	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	743	64	38	1438	116	76	70	182	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	743	64	38	1438	116	76	70	182	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	743	64	38	1438	116	76	70	182	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	743	64	38	1438	116	76	70	182	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	743	64	38	1438	116	76	70	182	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	1.85	0.15	0.52	0.48	1.00	0.00	0.00	0.00
Final Sat.:	1750	3406	293	1750	3424	276	937	863	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.22	0.22	0.02	0.42	0.42	0.08	0.08	0.10	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	7.0	82.2	82.2	20.3	95.5	95.5	18.5	18.5	25.5	0.0	0.0	0.0
Volume/Cap:	0.52	0.34	0.34	0.14	0.57	0.57	0.57	0.57	0.53	0.00	0.00	0.00
Uniform Del:	59.9	11.2	11.2	47.3	7.9	7.9	52.1	52.1	46.9	0.0	0.0	0.0
IncremntDel:	5.1	0.1	0.1	0.2	0.3	0.3	3.1	3.1	1.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	65.0	11.3	11.3	47.5	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.0	11.3	11.3	47.5	8.2	8.2	55.2	55.2	48.5	0.0	0.0	0.0
LOS by Move:	E	B+	B+	D	A	A	E+	E+	D	A	A	A
HCM2kAvgQ:	2	7	7	1	14	14	6	6	7	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #96: Fair Oaks Ave & Kifer Rd



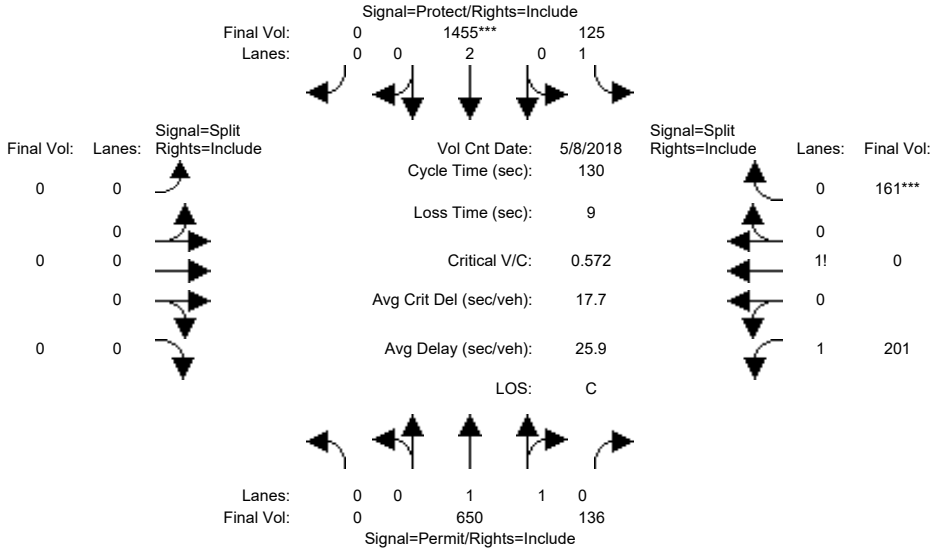
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1363	202	74	590	0	0	0	0	117	0	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1363	202	74	590	0	0	0	0	117	0	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1363	202	74	590	0	0	0	0	117	0	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1363	202	74	590	0	0	0	0	117	0	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1363	202	74	590	0	0	0	0	117	0	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1363	202	74	590	0	0	0	0	117	0	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.73	0.27	1.00	2.00	0.00	0.00	0.00	0.00	1.31	0.00	0.69
Final Sat.:	0	3222	478	1750	3800	0	0	0	0	2284	0	1251
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.04	0.16	0.00	0.00	0.00	0.00	0.05	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	89.0	89.0	8.9	97.9	0.0	0.0	0.0	0.0	23.1	0.0	23.1
Volume/Cap:	0.00	0.62	0.62	0.62	0.21	0.00	0.00	0.00	0.00	0.29	0.00	0.62
Uniform Del:	0.0	11.2	11.2	58.9	4.7	0.0	0.0	0.0	0.0	46.4	0.0	49.4
IncremntDel:	0.0	0.5	0.5	9.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	11.6	11.6	68.3	4.7	0.0	0.0	0.0	0.0	46.5	0.0	52.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.6	11.6	68.3	4.7	0.0	0.0	0.0	0.0	46.5	0.0	52.2
LOS by Move:	A	B+	B+	E	A	A	A	A	A	D	A	D-
HCM2kAvgQ:	0	17	17	3	3	0	0	0	0	3	0	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #96: Fair Oaks Ave & Kifer Rd



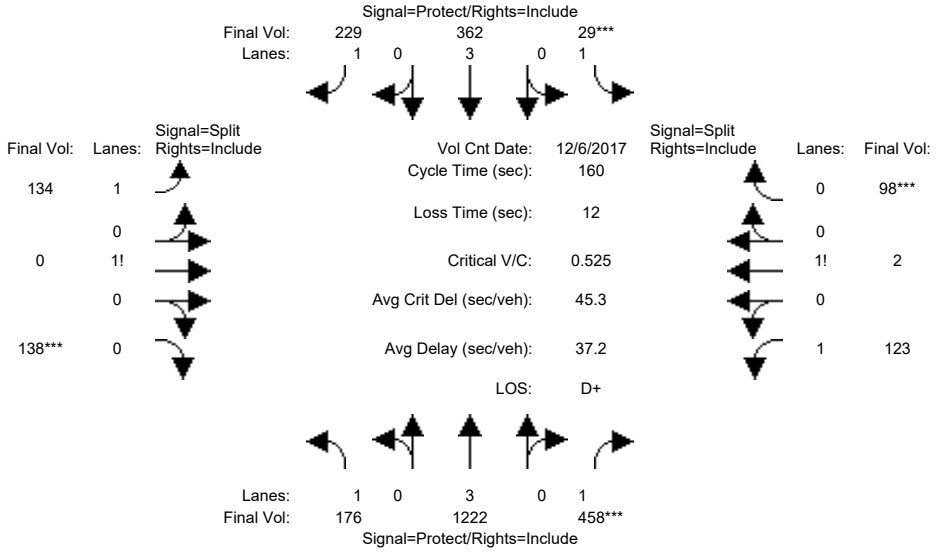
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	650	136	125	1455	0	0	0	0	201	0	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	650	136	125	1455	0	0	0	0	201	0	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	650	136	125	1455	0	0	0	0	201	0	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	650	136	125	1455	0	0	0	0	201	0	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	650	136	125	1455	0	0	0	0	201	0	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	650	136	125	1455	0	0	0	0	201	0	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.64	0.36	1.00	2.00	0.00	0.00	0.00	0.00	1.38	0.00	0.62
Final Sat.:	0	3059	640	1750	3800	0	0	0	0	2423	0	1077
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.07	0.38	0.00	0.00	0.00	0.00	0.08	0.00	0.15
Crit Moves:					****							****
Green Time:	0.0	34.5	34.5	62.2	96.7	0.0	0.0	0.0	0.0	24.3	0.0	24.3
Volume/Cap:	0.00	0.80	0.80	0.15	0.51	0.00	0.00	0.00	0.00	0.44	0.00	0.80
Uniform Del:	0.0	44.5	44.5	19.0	6.9	0.0	0.0	0.0	0.0	46.9	0.0	50.5
IncremntDel:	0.0	4.7	4.7	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	9.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	49.3	49.3	19.1	7.1	0.0	0.0	0.0	0.0	47.3	0.0	60.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	49.3	49.3	19.1	7.1	0.0	0.0	0.0	0.0	47.3	0.0	60.3
LOS by Move:	A	D	D	B-	A	A	A	A	A	D	A	E
HCM2kAvgQ:	0	15	15	3	12	0	0	0	0	5	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #97: Wolfe Rd & Central Expwy Ramps



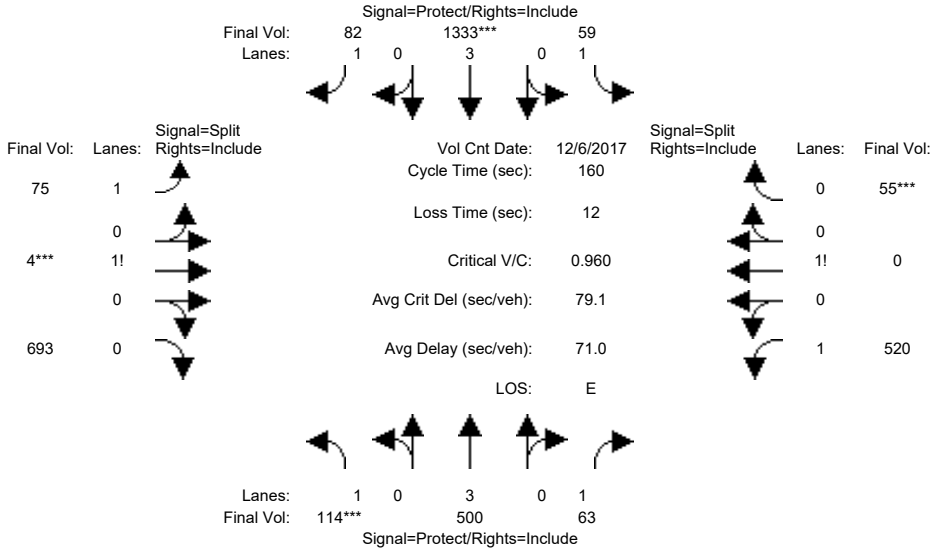
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1222	458	29	362	229	134	0	138	123	2	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	1222	458	29	362	229	134	0	138	123	2	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	1222	458	29	362	229	134	0	138	123	2	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1222	458	29	362	229	134	0	138	123	2	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	1222	458	29	362	229	134	0	138	123	2	98
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.33	0.00	0.67	1.38	0.01	0.61
Final Sat.:	1750	5700	1750	1750	5700	1750	2333	0	1200	2416	22	1062
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.26	0.02	0.06	0.13	0.06	0.00	0.11	0.05	0.09	0.09
Crit Moves:			****	****					****			****
Green Time:	37.2	78.7	78.7	7.0	48.5	48.5	34.6	0.0	34.6	27.7	27.7	27.7
Volume/Cap:	0.43	0.44	0.53	0.38	0.21	0.43	0.27	0.00	0.53	0.29	0.53	0.53
Uniform Del:	52.4	26.3	28.0	74.4	41.5	44.7	52.2	0.0	55.6	57.6	60.2	60.2
IncremntDel:	0.7	0.1	0.6	3.1	0.1	0.6	0.1	0.0	1.1	0.2	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.1	26.4	28.6	77.5	41.6	45.3	52.3	0.0	56.6	57.8	61.5	61.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.1	26.4	28.6	77.5	41.6	45.3	52.3	0.0	56.6	57.8	61.5	61.5
LOS by Move:	D-	C	C	E-	D	D	D-	A	E+	E+	E	E
HCM2kAvgQ:	8	12	16	2	4	10	4	0	10	4	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #97: Wolfe Rd & Central Expwy Ramps



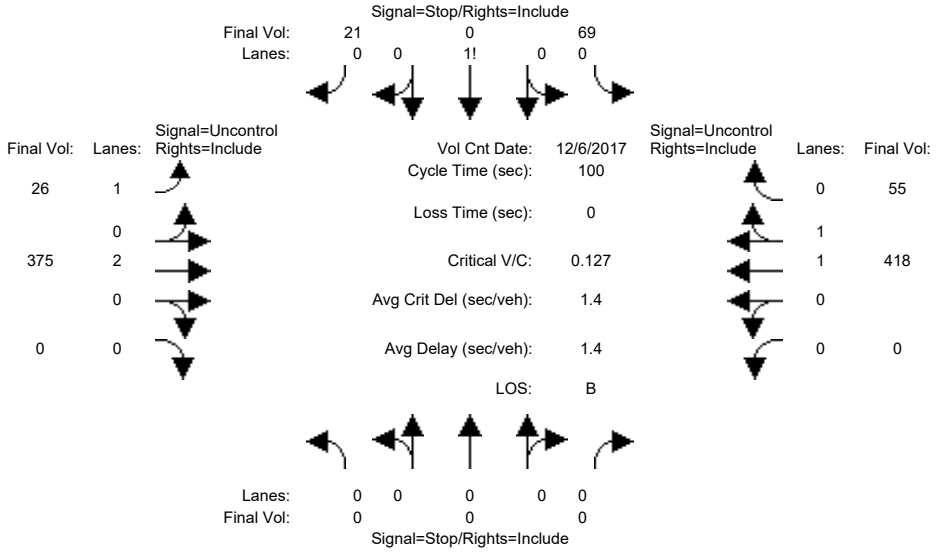
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	500	63	59	1333	82	75	4	693	520	0	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	500	63	59	1333	82	75	4	693	520	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	500	63	59	1333	82	75	4	693	520	0	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	500	63	59	1333	82	75	4	693	520	0	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	500	63	59	1333	82	75	4	693	520	0	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.05	0.01	0.94	1.83	0.00	0.17
Final Sat.:	1750	5700	1750	1750	5700	1750	1842	10	1696	3194	0	306
Capacity Analysis Module:												
Vol/Sat:	0.07	0.09	0.04	0.03	0.23	0.05	0.04	0.41	0.41	0.16	0.00	0.18
Crit Moves:	****				****			****				****
Green Time:	10.9	33.3	33.3	16.6	39.0	39.0	68.1	68.1	68.1	30.0	0.0	30.0
Volume/Cap:	0.96	0.42	0.17	0.33	0.96	0.19	0.10	0.96	0.96	0.87	0.00	0.96
Uniform Del:	74.4	55.0	52.1	66.5	59.7	48.0	27.5	44.6	44.6	63.1	0.0	64.4
IncremntDel:	69.7	0.2	0.2	1.0	15.5	0.2	0.0	22.3	22.3	11.7	0.0	26.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	144.0	55.3	52.3	67.6	75.3	48.2	27.5	66.9	66.9	74.8	0.0	91.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	144.0	55.3	52.3	67.6	75.3	48.2	27.5	66.9	66.9	74.8	0.0	91.3
LOS by Move:	F	E+	D-	E	E-	D	C	E	E	E	A	F
HCM2kAvgQ:	9	7	3	3	26	3	2	42	42	17	0	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing AM

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	69	0	21	26	375	0	0	418	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	69	0	21	26	375	0	0	418	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Adju:	0	0	-1	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	-1	69	0	21	26	375	0	0	418	55
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	69	0	21	26	375	0	0	418	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	69	0	21	26	375	0	0	418	55
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	685	873	237	473	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	386	291	771	1099	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	379	284	771	1099	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	503	437	xxxxx	543	454	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	0.00	0.03	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	584	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.3			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

****

Intersection #98 Commercial St & Kifer Rd

****

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```
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  0  0  0    0  0  1! 0  0    1  0  2  0  0    0  0  1  1  0
Initial Vol:    0    0    -1    69    0    21    26  375     0     0  418    55
ApproachDel:    xxxxxx             12.3           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=OVERFLOW]
   SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=-1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=963]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=90]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=963]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

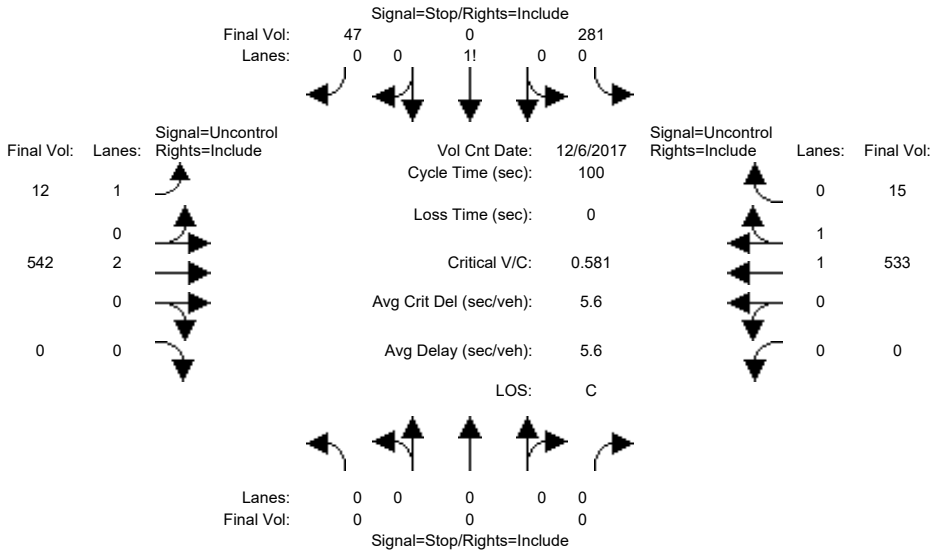
The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #98 Commercial St & Kifer Rd
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Lanes:        0  0  0  0  0    0  0  1! 0  0    1  0  2  0  0    0  0  1  1  0
Initial Vol:    0    0    -1    69    0    21    26  375     0     0  418    55
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             874
Minor Approach Volume:           90
Minor Approach Volume Threshold: 331
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #98: Commercial St & Kifer Rd



Street Name:	Commercial St						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 6 Dec 2017 << 4:45 PM - 5:45 PM												
Base Vol:	0	0	0	281	0	47	12	542	0	0	533	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	281	0	47	12	542	0	0	533	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	281	0	47	12	542	0	0	533	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	281	0	47	12	542	0	0	533	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	281	0	47	12	542	0	0	533	15
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	836	1107	274	548	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	310	212	730	1032	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	307	210	730	1032	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	416	386	xxxxx	484	392	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.58	0.00	0.06	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	508	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	24.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			24.1			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

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Intersection #98 Commercial St & Kifer Rd

****

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	281	0	47	12	542	0	0	533	15
ApproachDel:	xxxxxx			24.1			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=328]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1430]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #98 Commercial St & Kifer Rd

****

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			0 0 1 1 0		
Initial Vol:	0	0	0	281	0	47	12	542	0	0	533	15

Major Street Volume: 1102
Minor Approach Volume: 328
Minor Approach Volume Threshold: 251

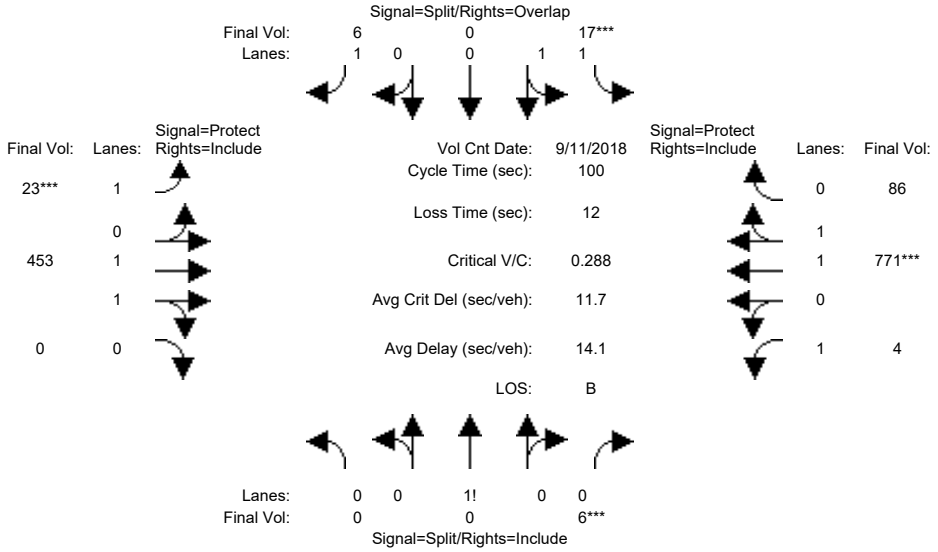
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #99: Semiconductor Dr & Kifer Rd



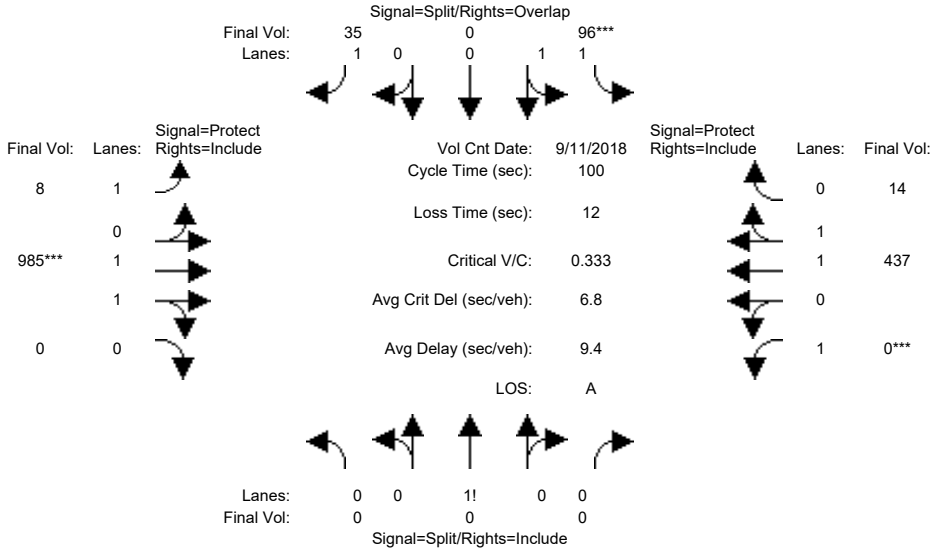
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	0	0	6	17	0	6	23	453	0	4	771	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	6	17	0	6	23	453	0	4	771	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	6	17	0	6	23	453	0	4	771	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	6	17	0	6	23	453	0	4	771	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	6	17	0	6	23	453	0	4	771	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	6	17	0	6	23	453	0	4	771	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.79	0.21
Final Sat.:	0	0	1750	3550	0	1750	1750	3700	0	1750	3328	371
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.12	0.00	0.00	0.23	0.23
Crit Moves:			****	****			****				****	
Green Time:	0.0	0.0	10.0	10.0	0.0	17.0	7.0	43.3	0.0	24.7	61.0	61.0
Volume/Cap:	0.00	0.00	0.03	0.05	0.00	0.02	0.19	0.28	0.00	0.01	0.38	0.38
Uniform Del:	0.0	0.0	40.6	40.7	0.0	34.6	43.8	18.3	0.0	28.4	9.9	9.9
IncremntDel:	0.0	0.0	0.1	0.1	0.0	0.0	0.7	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	18.4	0.0	28.4	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	40.7	40.8	0.0	34.6	44.6	18.4	0.0	28.4	10.0	10.0
LOS by Move:	A	A	D	D	A	C-	D	B-	A	C	B+	B+
HCM2kAvgQ:	0	0	0	0	0	0	1	4	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #99: Semiconductor Dr & Kifer Rd



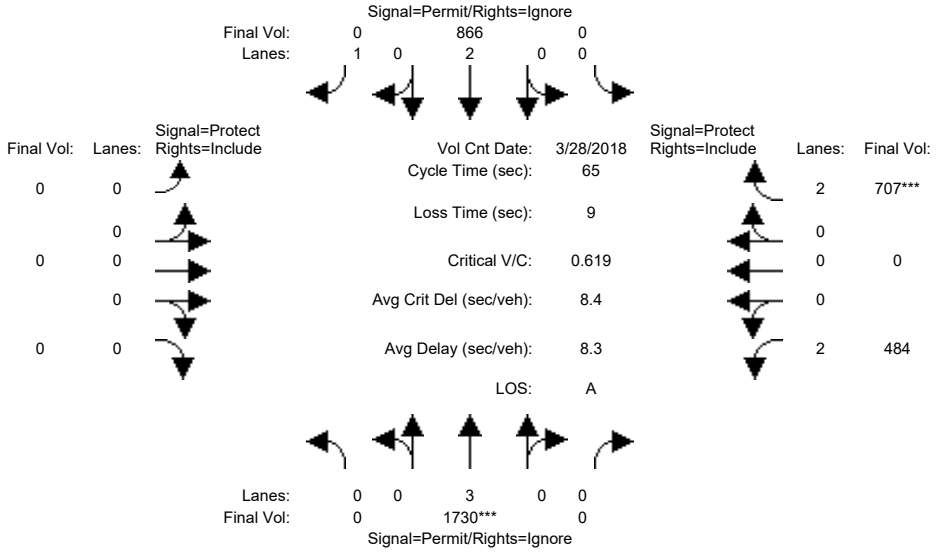
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	0	0	0	96	0	35	8	985	0	0	437	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	96	0	35	8	985	0	0	437	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	96	0	35	8	985	0	0	437	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	35	8	985	0	0	437	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	96	0	35	8	985	0	0	437	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	96	0	35	8	985	0	0	437	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	1.00	0.92	0.92	0.97	0.92	0.92	0.97	0.95
Lanes:	0.00	1.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	0	1750	0	3550	0	1750	1750	3700	0	1750	3585	115
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.27	0.00	0.00	0.12	0.12
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	10.0	0.0	38.5	28.5	78.0	0.0	0.0	49.5	49.5
Volume/Cap:	0.00	0.00	0.00	0.27	0.00	0.05	0.02	0.34	0.00	0.00	0.25	0.25
Uniform Del:	0.0	0.0	0.0	41.6	0.0	19.3	25.7	3.3	0.0	0.0	14.5	14.5
IncremntDel:	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	42.0	0.0	19.4	25.7	3.4	0.0	0.0	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	42.0	0.0	19.4	25.7	3.4	0.0	0.0	14.6	14.6
LOS by Move:	A	A	A	D	A	B-	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	1	0	5	0	0	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



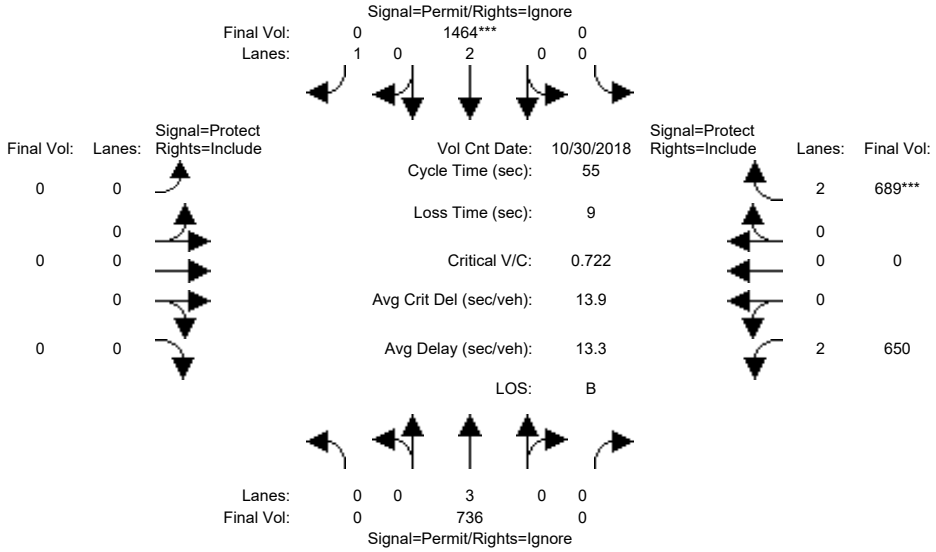
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1730	412	0	866	490	0	0	0	484	0	707
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1730	412	0	866	490	0	0	0	484	0	707
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1730	412	0	866	490	0	0	0	484	0	707
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1730	0	0	866	0	0	0	0	484	0	707
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1730	0	0	866	0	0	0	0	484	0	707
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1730	0	0	866	0	0	0	0	484	0	707
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.15	0.00	0.22
Crit Moves:		****										****
Green Time:	0.0	32.4	0.0	0.0	32.4	0.0	0.0	0.0	0.0	23.6	0.0	23.6
Volume/Cap:	0.00	0.62	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.42	0.00	0.62
Uniform Del:	0.0	11.8	0.0	0.0	10.6	0.0	0.0	0.0	0.0	15.6	0.0	17.0
IncremntDel:	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.34	0.00	0.00	0.34	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	4.4	0.0	0.0	3.7	0.0	0.0	0.0	0.0	15.9	0.0	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.4	0.0	0.0	3.7	0.0	0.0	0.0	0.0	15.9	0.0	18.1
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	B-
HCM2kAvgQ:	0	5	0	0	3	0	0	0	0	5	0	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



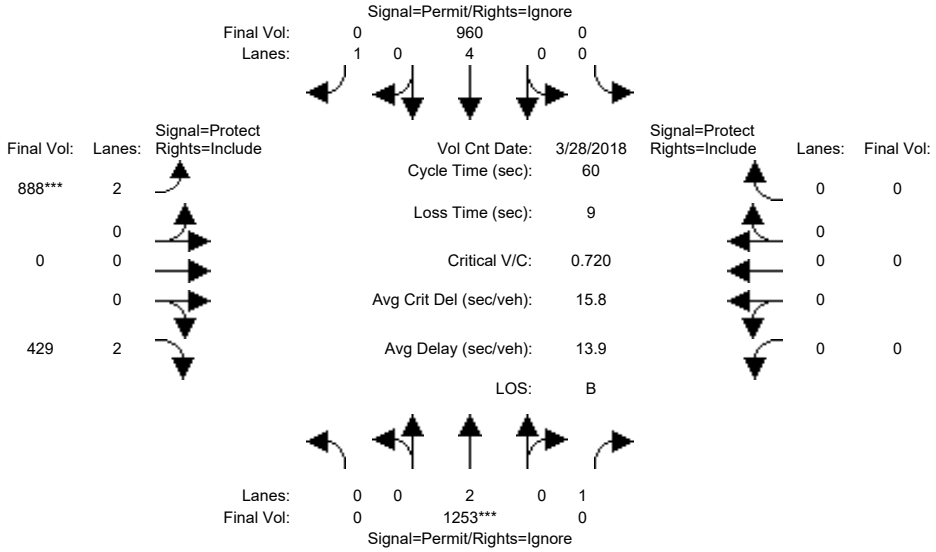
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	0	736	455	0	1464	663	0	0	0	650	0	689
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	736	455	0	1464	663	0	0	0	650	0	689
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	736	455	0	1464	663	0	0	0	650	0	689
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	736	0	0	1464	0	0	0	0	650	0	689
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	736	0	0	1464	0	0	0	0	650	0	689
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	736	0	0	1464	0	0	0	0	650	0	689
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.21	0.00	0.22
Crit Moves:					****							****
Green Time:	0.0	29.3	0.0	0.0	29.3	0.0	0.0	0.0	0.0	16.7	0.0	16.7
Volume/Cap:	0.00	0.25	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.68	0.00	0.72
Uniform Del:	0.0	6.9	0.0	0.0	9.7	0.0	0.0	0.0	0.0	16.8	0.0	17.1
IncremntDel:	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	2.0	0.0	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.9	0.0	0.0	11.0	0.0	0.0	0.0	0.0	18.9	0.0	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.9	0.0	0.0	11.0	0.0	0.0	0.0	0.0	18.9	0.0	19.8
LOS by Move:	A	A	A	A	B+	A	A	A	A	B-	A	B-
HCM2kAvgQ:	0	1	0	0	4	0	0	0	0	7	0	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



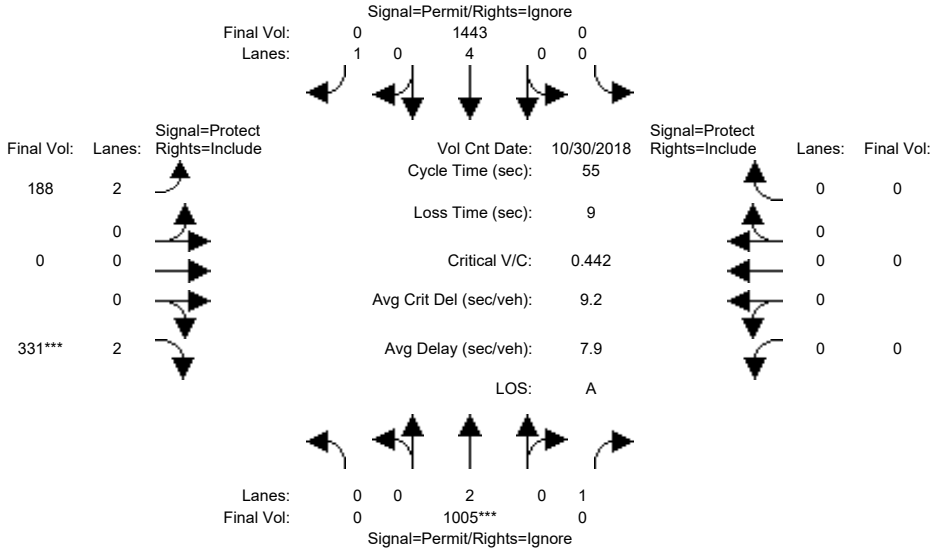
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1253	432	0	960	391	888	0	429	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1253	432	0	960	391	888	0	429	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1253	432	0	960	391	888	0	429	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1253	0	0	960	0	888	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1253	0	0	960	0	888	0	429	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1253	0	0	960	0	888	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.13	0.00	0.28	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	27.5	0.0	0.0	27.5	0.0	23.5	0.0	23.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.72	0.00	0.00	0.28	0.00	0.72	0.00	0.35	0.00	0.00	0.00
Uniform Del:	0.0	13.1	0.0	0.0	10.1	0.0	15.5	0.0	12.8	0.0	0.0	0.0
IncremntDel:	0.0	1.5	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B+	A	B	A	B	A	A	A
HCM2kAvgQ:	0	8	0	0	2	0	10	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



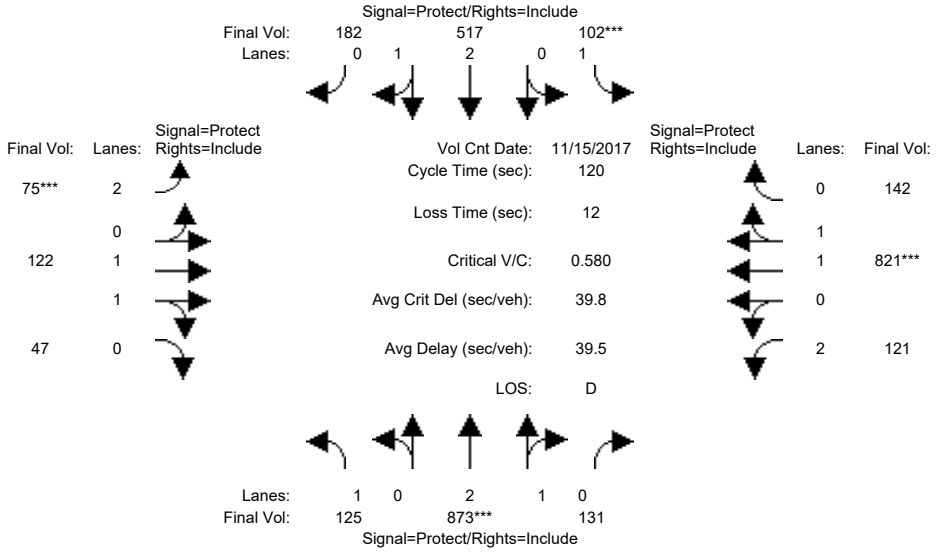
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 PM to 6:30 PM												
Base Vol:	0	1005	447	0	1443	676	188	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1005	447	0	1443	676	188	0	331	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1005	447	0	1443	676	188	0	331	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1005	0	0	1443	0	188	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1005	0	0	1443	0	188	0	331	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1005	0	0	1443	0	188	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.00	0.00	0.19	0.00	0.06	0.00	0.11	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	32.9	0.0	0.0	32.9	0.0	13.1	0.0	13.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.44	0.00	0.00	0.32	0.00	0.25	0.00	0.44	0.00	0.00	0.00
Uniform Del:	0.0	6.0	0.0	0.0	5.5	0.0	17.0	0.0	17.9	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.2	0.0	0.0	5.5	0.0	17.2	0.0	18.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.2	0.0	0.0	5.5	0.0	17.2	0.0	18.3	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B	A	B-	A	A	A
HCM2kAvgQ:	0	1	0	0	0	0	2	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1200: BOWERS/SCOTT



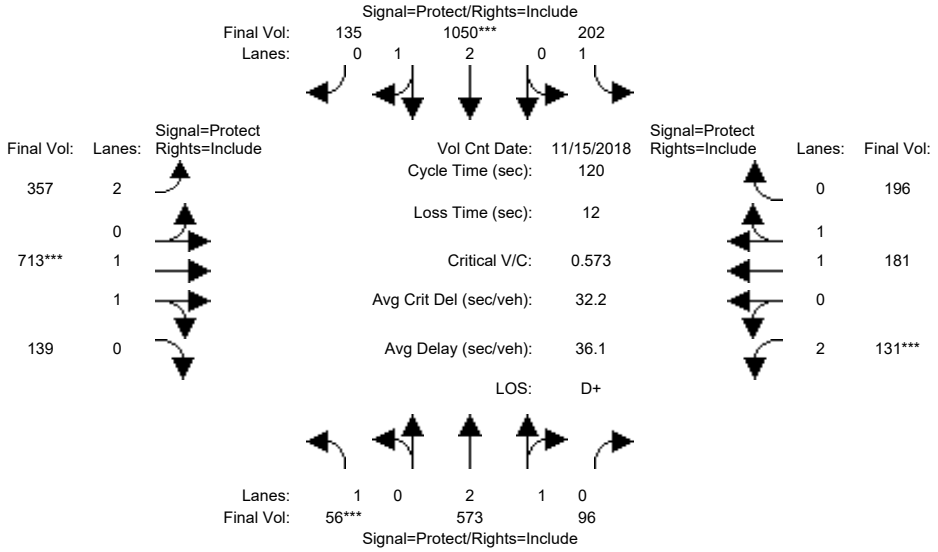
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	30	30	20	30	30	15	20	20	15	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	125	873	131	102	517	182	75	122	47	121	821	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	873	131	102	517	182	75	122	47	121	821	142
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	873	131	102	517	182	75	122	47	121	821	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	873	131	102	517	182	75	122	47	121	821	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	873	131	102	517	182	75	122	47	121	821	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	873	131	102	517	182	75	122	47	121	821	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	1.00	2.59	0.41	1.00	2.19	0.81	2.00	1.43	0.57	2.00	1.70	0.30
Final Sat.:	1750	4868	731	1750	4140	1457	3150	2670	1029	3150	3154	546
Capacity Analysis Module:												
Vol/Sat:	0.07	0.18	0.18	0.06	0.12	0.12	0.02	0.05	0.05	0.04	0.26	0.26
Crit Moves:		****		****			****				****	
Green Time:	20.0	30.0	30.0	20.0	30.0	30.0	15.0	33.1	33.1	24.9	43.0	43.0
Volume/Cap:	0.43	0.72	0.72	0.35	0.50	0.50	0.19	0.17	0.17	0.19	0.73	0.73
Uniform Del:	44.9	41.1	41.1	44.2	38.6	38.6	47.1	32.9	32.9	39.2	33.4	33.4
IncremntDel:	1.0	1.8	1.8	0.7	0.3	0.3	0.2	0.1	0.1	0.1	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.9	42.9	42.9	45.0	38.8	38.8	47.3	33.0	33.0	39.4	35.4	35.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	42.9	42.9	45.0	38.8	38.8	47.3	33.0	33.0	39.4	35.4	35.4
LOS by Move:	D	D	D	D	D+	D+	D	C-	C-	D	D+	D+
HCM2kAvgQ:	4	11	11	3	7	7	1	2	2	2	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1200: BOWERS/SCOTT



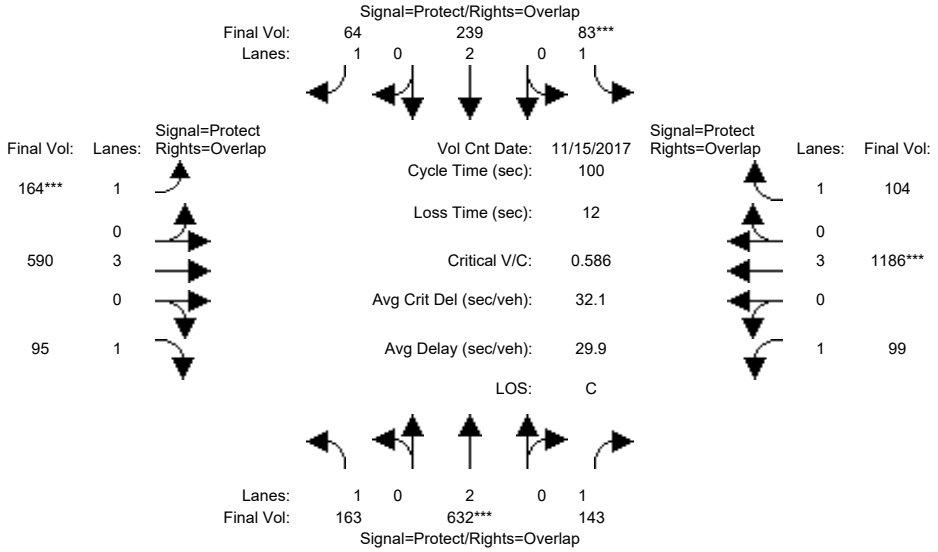
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	56	573	96	202	1050	135	357	713	139	131	181	196
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	573	96	202	1050	135	357	713	139	131	181	196
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	573	96	202	1050	135	357	713	139	131	181	196
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	573	96	202	1050	135	357	713	139	131	181	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	573	96	202	1050	135	357	713	139	131	181	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	573	96	202	1050	135	357	713	139	131	181	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	2.55	0.45	1.00	2.65	0.35	2.00	1.66	0.34	2.00	1.00	1.00
Final Sat.:	1750	4795	803	1750	4961	638	3150	3096	604	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.12	0.21	0.21	0.11	0.23	0.23	0.04	0.10	0.11
Crit Moves:	****				****			****			****	
Green Time:	7.0	26.0	26.0	25.2	44.2	44.2	28.6	48.1	48.1	8.7	28.2	28.2
Volume/Cap:	0.55	0.55	0.55	0.55	0.57	0.57	0.48	0.57	0.57	0.57	0.40	0.48
Uniform Del:	55.0	41.8	41.8	42.4	30.4	30.4	39.3	28.0	28.0	53.9	38.8	39.5
IncremntDel:	6.2	0.5	0.5	1.8	0.4	0.4	0.5	0.6	0.6	3.5	0.3	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	61.2	42.3	42.3	44.2	30.8	30.8	39.8	28.5	28.5	57.4	39.1	40.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.2	42.3	42.3	44.2	30.8	30.8	39.8	28.5	28.5	57.4	39.1	40.0
LOS by Move:	E	D	D	D	C	C	D	C	C	E+	D	D
HCM2kAvgQ:	2	7	7	7	12	12	7	12	12	3	5	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



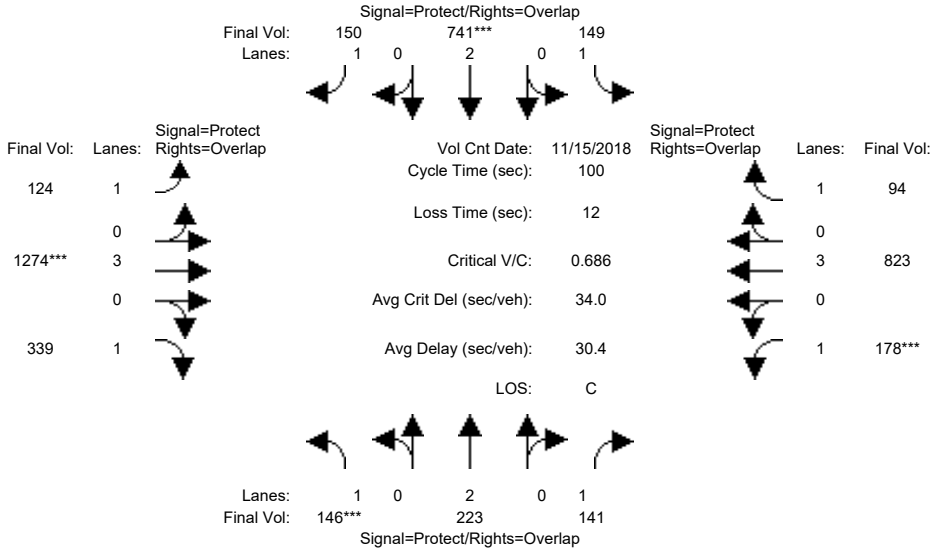
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	4	4	4	4	4	4	4	15	15	4	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	163	632	143	83	239	64	164	590	95	99	1186	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	632	143	83	239	64	164	590	95	99	1186	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	632	143	83	239	64	164	590	95	99	1186	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	632	143	83	239	64	164	590	95	99	1186	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	632	143	83	239	64	164	590	95	99	1186	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	632	143	83	239	64	164	590	95	99	1186	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.17	0.08	0.05	0.06	0.04	0.09	0.10	0.05	0.06	0.21	0.06
Crit Moves:		****		****			****				****	
Green Time:	21.8	28.4	42.5	8.1	14.7	30.7	16.0	37.4	59.2	14.1	35.5	43.6
Volume/Cap:	0.43	0.59	0.19	0.59	0.43	0.12	0.59	0.28	0.09	0.40	0.59	0.14
Uniform Del:	33.7	30.8	18.0	44.3	38.8	24.9	38.9	21.9	8.8	39.1	26.3	16.9
IncremntDel:	3.5	2.3	0.6	16.5	2.4	0.5	8.7	0.3	0.2	4.8	1.2	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	33.1	18.6	60.8	41.2	25.4	47.6	22.2	9.0	43.9	27.5	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	33.1	18.6	60.8	41.2	25.4	47.6	22.2	9.0	43.9	27.5	17.3
LOS by Move:	D+	C-	B-	E	D	C	D	C+	A	D	C	B
HCM2kAvgQ:	5	9	3	3	3	1	5	4	1	3	10	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



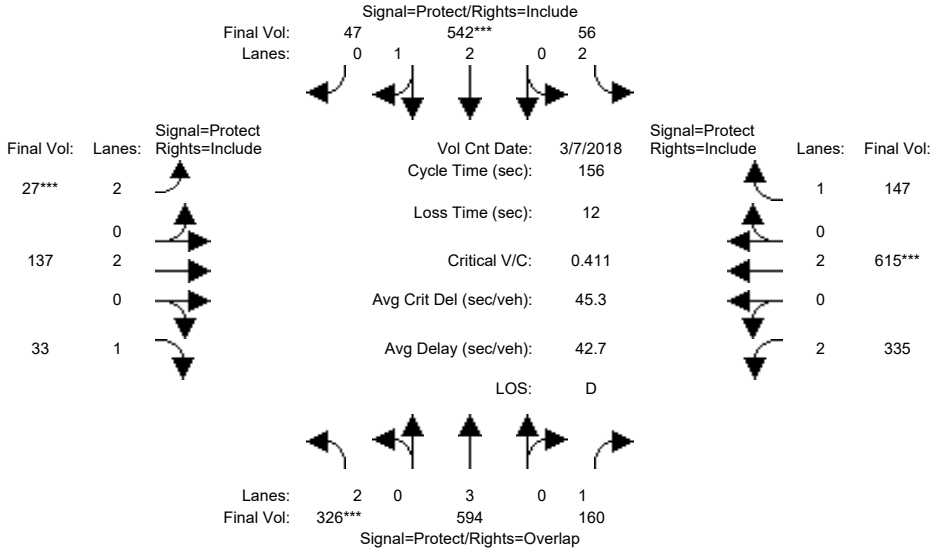
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	146	223	141	149	741	150	124	1274	339	178	823	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	223	141	149	741	150	124	1274	339	178	823	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	223	141	149	741	150	124	1274	339	178	823	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	223	141	149	741	150	124	1274	339	178	823	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	223	141	149	741	150	124	1274	339	178	823	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	223	141	149	741	150	124	1274	339	178	823	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.08	0.09	0.20	0.09	0.07	0.22	0.19	0.10	0.14	0.05
Crit Moves:	****				****			****			****	
Green Time:	12.2	21.9	36.8	18.7	28.4	44.0	15.6	32.6	44.7	14.8	31.8	50.5
Volume/Cap:	0.69	0.27	0.22	0.46	0.69	0.19	0.45	0.69	0.43	0.69	0.45	0.11
Uniform Del:	42.1	32.4	21.8	36.2	31.8	17.1	38.3	29.3	18.9	40.4	27.2	13.0
IncremntDel:	9.0	0.2	0.2	1.0	1.9	0.1	1.2	1.1	0.4	7.4	0.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.1	32.6	21.9	37.2	33.7	17.3	39.5	30.4	19.3	47.8	27.4	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.1	32.6	21.9	37.2	33.7	17.3	39.5	30.4	19.3	47.8	27.4	13.0
LOS by Move:	D-	C-	C+	D+	C-	B	D	C	B-	D	C	B
HCM2kAvgQ:	6	3	3	4	10	3	4	11	7	6	6	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1207: GREAT AMERICA/TASMAN



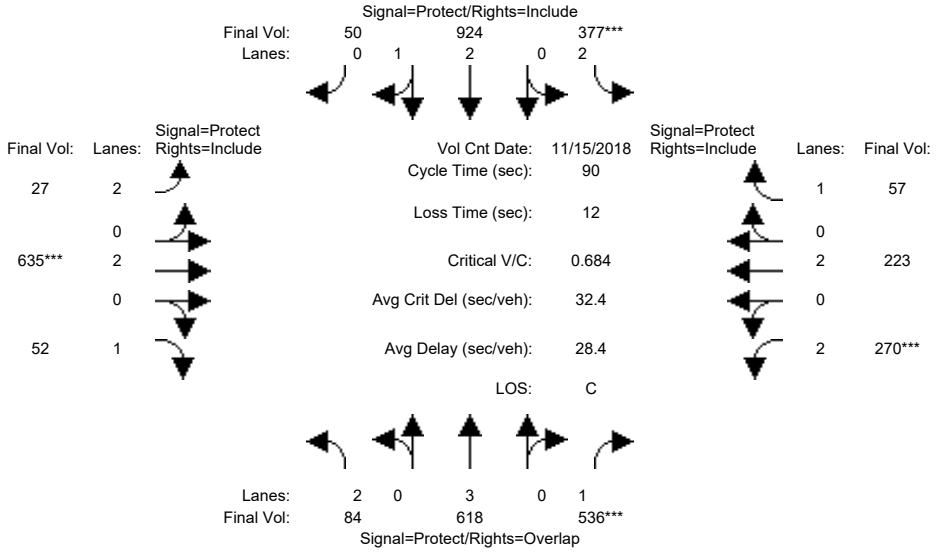
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	8	12	12	7	12	12	7	10	10	8	10	10
Y+R:	5.0	6.7	6.7	5.0	6.7	6.7	5.0	6.4	6.4	5.0	6.4	6.4
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	326	594	160	56	542	47	27	137	33	335	615	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	594	160	56	542	47	27	137	33	335	615	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	326	594	160	56	542	47	27	137	33	335	615	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	326	594	160	56	542	47	27	137	33	335	615	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	594	160	56	542	47	27	137	33	335	615	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	594	160	56	542	47	27	137	33	335	615	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.75	0.25	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5153	447	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.09	0.02	0.11	0.11	0.01	0.04	0.02	0.11	0.16	0.08
Crit Moves:	****				****		****				****	
Green Time:	38.3	53.9	95.6	23.2	38.9	38.9	7.0	25.1	25.1	41.7	59.8	59.8
Volume/Cap:	0.42	0.30	0.15	0.12	0.42	0.42	0.19	0.22	0.12	0.40	0.42	0.22
Uniform Del:	49.6	37.3	12.9	57.5	49.1	49.1	71.8	56.9	55.9	46.9	35.4	32.4
IncremntDel:	1.7	0.4	0.3	0.5	0.9	0.9	3.0	0.8	0.8	1.4	0.9	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.2	37.7	13.1	58.0	50.1	50.1	74.8	57.8	56.8	48.3	36.3	33.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	37.7	13.1	58.0	50.1	50.1	74.8	57.8	56.8	48.3	36.3	33.1
LOS by Move:	D-	D+	B	E+	D	D	E	E+	E+	D	D+	C-
HCM2kAvgQ:	8	7	3	1	8	8	1	3	1	8	11	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1207: GREAT AMERICA/TASMAN



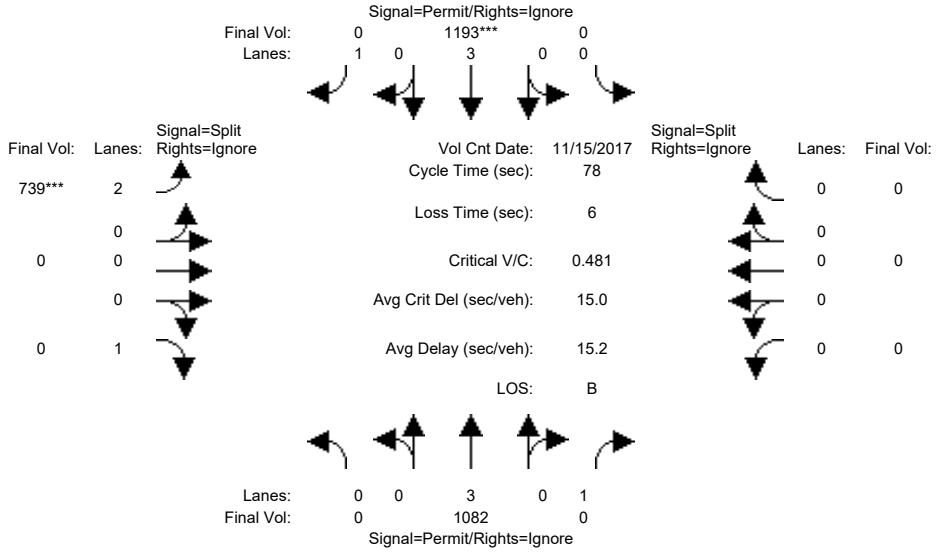
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	84	618	536	377	924	50	27	635	52	270	223	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	618	536	377	924	50	27	635	52	270	223	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	618	536	377	924	50	27	635	52	270	223	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	618	536	377	924	50	27	635	52	270	223	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	618	536	377	924	50	27	635	52	270	223	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	618	536	377	924	50	27	635	52	270	223	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.84	0.16	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5312	287	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.31	0.12	0.17	0.17	0.01	0.17	0.03	0.09	0.06	0.03
Crit Moves:			****	****				****		****		
Green Time:	13.8	29.0	40.3	15.7	30.9	30.9	13.7	22.0	22.0	11.3	19.6	19.6
Volume/Cap:	0.17	0.34	0.68	0.68	0.51	0.51	0.06	0.68	0.12	0.68	0.27	0.15
Uniform Del:	33.1	23.2	19.8	34.8	23.5	23.5	32.6	30.9	26.5	37.7	29.3	28.5
IncremntDel:	0.2	0.1	2.5	3.6	0.2	0.2	0.0	2.1	0.1	4.9	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	33.3	23.3	22.3	38.4	23.7	23.7	32.7	33.0	26.6	42.6	29.5	28.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.3	23.3	22.3	38.4	23.7	23.7	32.7	33.0	26.6	42.6	29.5	28.7
LOS by Move:	C-	C	C+	D+	C	C	C-	C-	C	D	C	C
HCM2kAvgQ:	1	4	13	7	8	8	0	8	1	6	3	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1208: BOWERS/101 SB



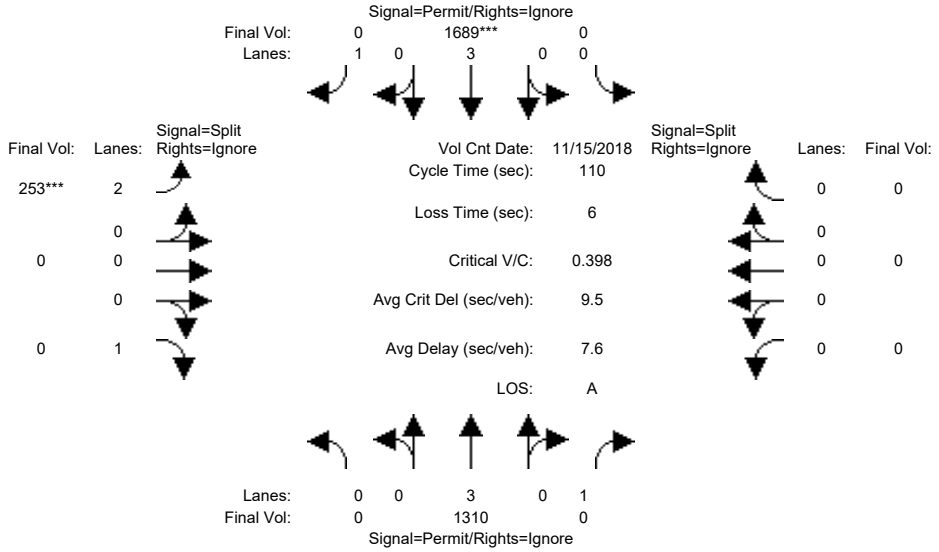
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	0	10	10	12	0	12	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	1082	241	0	1193	0	739	0	353	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1082	241	0	1193	0	739	0	353	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1082	241	0	1193	0	739	0	353	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1082	0	0	1193	0	739	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1082	0	0	1193	0	739	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1082	0	0	1193	0	739	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.00	0.00	0.21	0.00	0.23	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	33.9	0.0	0.0	33.9	0.0	38.1	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.44	0.00	0.00	0.48	0.00	0.48	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	15.4	0.0	0.0	15.7	0.0	13.4	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	15.5	0.0	0.0	15.9	0.0	13.6	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.5	0.0	0.0	15.9	0.0	13.6	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	B	A	A	A	A	A
HCM2kAvgQ:	0	6	0	0	7	0	7	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1208: BOWERS/101 SB



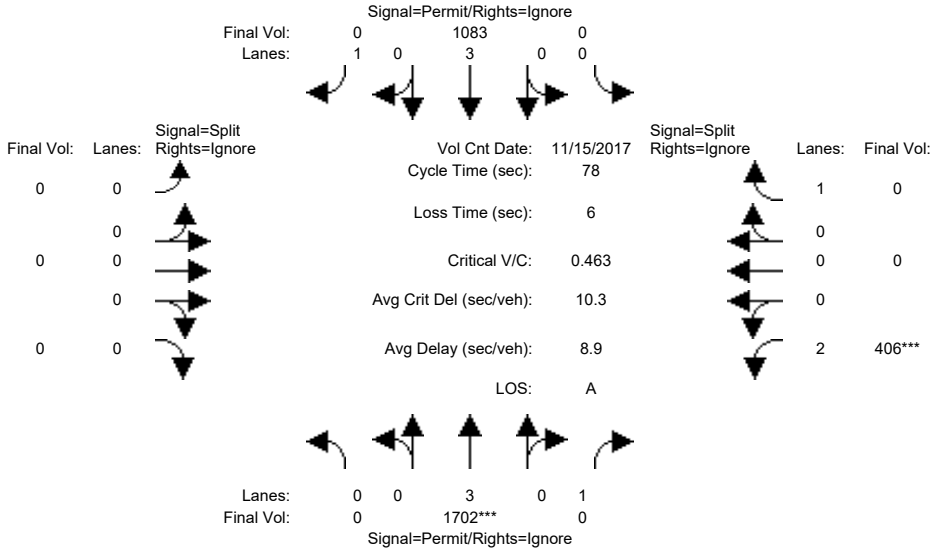
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	1310	789	0	1689	621	253	0	196	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1310	789	0	1689	621	253	0	196	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1310	789	0	1689	621	253	0	196	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1310	0	0	1689	0	253	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1310	0	0	1689	0	253	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1310	0	0	1689	0	253	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.00	0.00	0.30	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	81.8	0.0	0.0	81.8	0.0	22.2	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.31	0.00	0.00	0.40	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	4.7	0.0	0.0	5.1	0.0	38.1	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	4.7	0.0	0.0	5.2	0.0	38.5	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.7	0.0	0.0	5.2	0.0	38.5	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	D+	A	A	A	A	A
HCM2kAvgQ:	0	5	0	0	7	0	5	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1209: GREAT AMERICA/101 NB



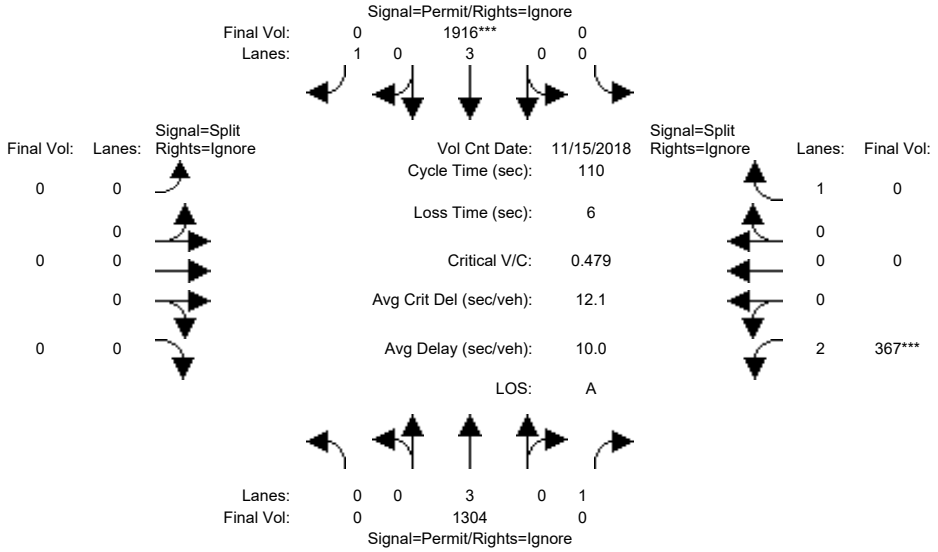
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	20	20	0	20	20	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	1702	104	0	1083	0	0	0	0	406	0	902
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1702	104	0	1083	0	0	0	0	406	0	902
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1702	104	0	1083	0	0	0	0	406	0	902
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1702	0	0	1083	0	0	0	0	406	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1702	0	0	1083	0	0	0	0	406	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1702	0	0	1083	0	0	0	0	406	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.13	0.00	0.00
Crit Moves:		****								****		
Green Time:	0.0	50.3	0.0	0.0	50.3	0.0	0.0	0.0	0.0	21.7	0.0	0.0
Volume/Cap:	0.00	0.46	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.46	0.00	0.00
Uniform Del:	0.0	7.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	23.3	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	7.1	0.0	0.0	6.1	0.0	0.0	0.0	0.0	23.7	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.1	0.0	0.0	6.1	0.0	0.0	0.0	0.0	23.7	0.0	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	0	7	0	0	4	0	0	0	0	5	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1209: GREAT AMERICA/101 NB



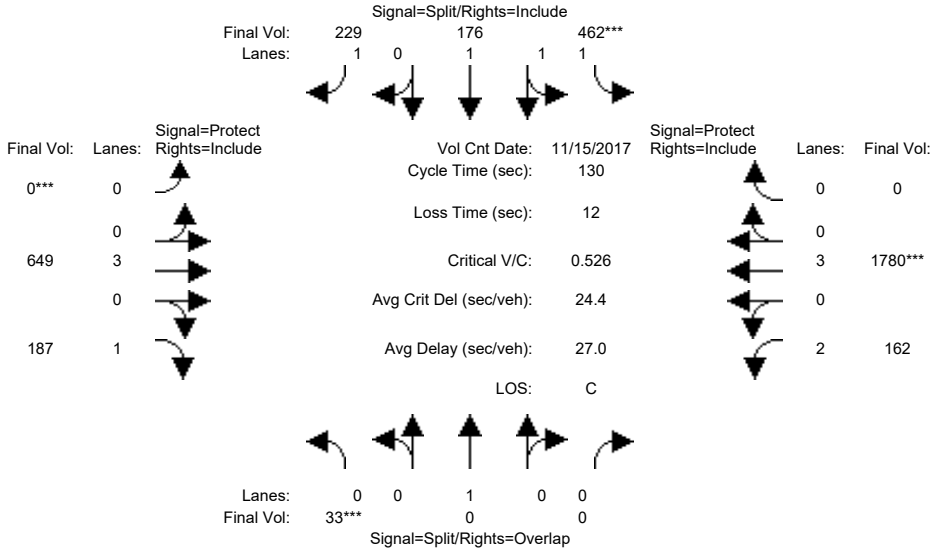
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	1304	298	0	1916	517	0	0	0	367	0	573
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1304	298	0	1916	517	0	0	0	367	0	573
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1304	298	0	1916	517	0	0	0	367	0	573
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1304	0	0	1916	0	0	0	0	367	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1304	0	0	1916	0	0	0	0	367	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1304	0	0	1916	0	0	0	0	367	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.12	0.00	0.00
Crit Moves:					****					****		
Green Time:	0.0	77.2	0.0	0.0	77.2	0.0	0.0	0.0	0.0	26.8	0.0	0.0
Volume/Cap:	0.00	0.33	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.48	0.00	0.00
Uniform Del:	0.0	6.3	0.0	0.0	7.4	0.0	0.0	0.0	0.0	35.6	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	6.4	0.0	0.0	7.4	0.0	0.0	0.0	0.0	36.1	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.4	0.0	0.0	7.4	0.0	0.0	0.0	0.0	36.1	0.0	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	D+	A	A
HCM2kAvgQ:	0	6	0	0	9	0	0	0	0	7	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1210: 280 SB / STEVENS CREEK



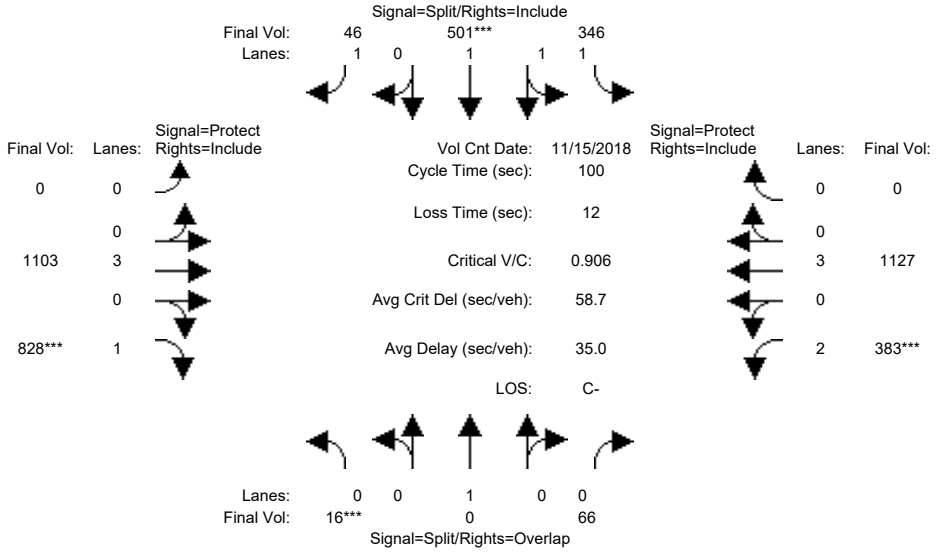
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	0	7	7	7	7	0	10	10	7	10	0
Y+R:	5.4	5.4	5.4	6.5	6.5	6.5	0.0	5.9	5.9	5.9	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	33	0	0	462	176	229	0	649	187	162	1780	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	0	0	462	176	229	0	649	187	162	1780	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	0	462	176	229	0	649	187	162	1780	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	0	0	462	176	229	0	649	187	162	1780	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	0	0	462	176	229	0	649	187	162	1780	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	0	0	462	176	229	0	649	187	162	1780	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	0.00	0.00	2.00	1.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	1750	0	0	3150	1900	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.15	0.09	0.13	0.00	0.11	0.11	0.05	0.31	0.00
Crit Moves:	****			****			****				****	
Green Time:	7.0	0.0	0.0	35.5	35.5	35.5	0.0	51.3	51.3	24.3	75.5	0.0
Volume/Cap:	0.35	0.00	0.00	0.54	0.34	0.48	0.00	0.29	0.27	0.28	0.54	0.00
Uniform Del:	59.3	0.0	0.0	40.3	37.9	39.5	0.0	26.9	26.7	45.3	16.6	0.0
IncremntDel:	10.0	0.0	0.0	1.7	0.5	3.4	0.0	0.3	1.0	1.2	0.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	69.3	0.0	0.0	42.0	38.4	43.0	0.0	27.2	27.7	46.5	17.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.3	0.0	0.0	42.0	38.4	43.0	0.0	27.2	27.7	46.5	17.2	0.0
LOS by Move:	E	A	A	D	D+	D	A	C	C	D	B	A
HCM2kAvgQ:	1	0	0	10	6	8	0	6	5	3	14	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1210: 280 SB / STEVENS CREEK



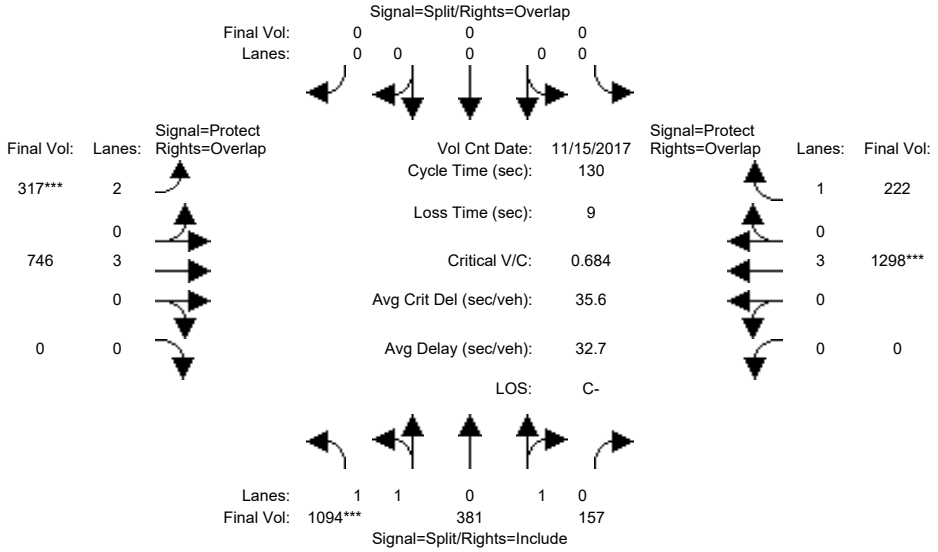
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	10	10	10	0	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	16	0	66	346	501	46	0	1103	828	383	1127	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	0	66	346	501	46	0	1103	828	383	1127	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	0	66	346	501	46	0	1103	828	383	1127	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	0	66	346	501	46	0	1103	828	383	1127	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	0	66	346	501	46	0	1103	828	383	1127	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	0	66	346	501	46	0	1103	828	383	1127	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	0.98	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.20	0.00	0.80	1.26	1.74	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	341	0	1409	2225	3221	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.16	0.16	0.03	0.00	0.19	0.47	0.12	0.20	0.00
Crit Moves:	****				****				****	****		
Green Time:	10.0	0.0	22.6	16.2	16.2	16.2	0.0	49.2	49.2	12.6	61.8	0.0
Volume/Cap:	0.47	0.00	0.21	0.96	0.96	0.16	0.00	0.39	0.96	0.96	0.32	0.00
Uniform Del:	42.5	0.0	31.4	41.6	41.6	36.1	0.0	16.0	24.5	43.4	9.1	0.0
IncremntDel:	2.0	0.0	0.3	21.5	21.5	0.3	0.0	0.1	21.8	35.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	44.5	0.0	31.7	63.1	63.1	36.4	0.0	16.1	46.3	78.6	9.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	0.0	31.7	63.1	63.1	36.4	0.0	16.1	46.3	78.6	9.1	0.0
LOS by Move:	D	A	C	E	E	D+	A	B	D	E-	A	A
HCM2kAvgQ:	3	0	2	14	14	1	0	7	33	11	5	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1211: LAWRENCE / STEVENS CREEK E



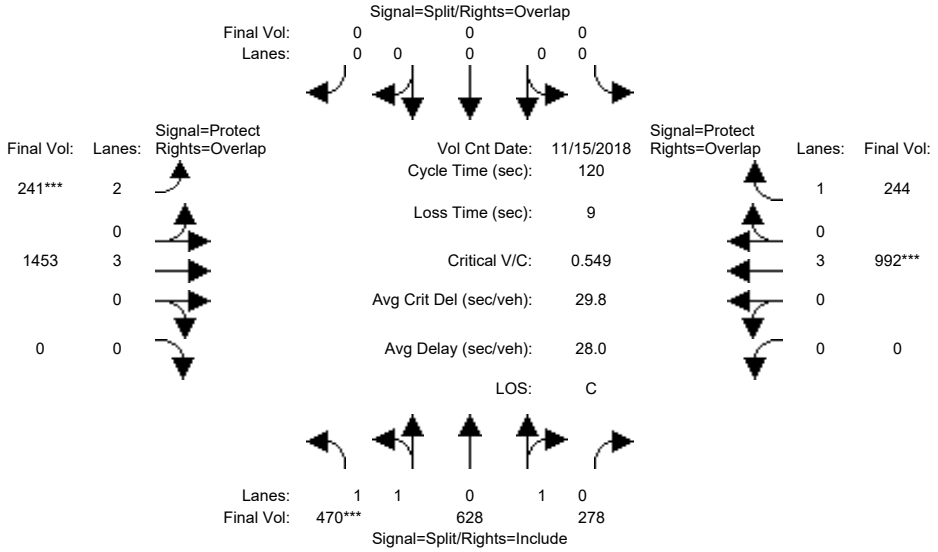
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	6.0	6.0	6.0	4.0	4.0	4.0	5.4	6.0	4.0	4.0	5.6	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	1094	381	157	0	0	0	317	746	0	0	1298	222
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1094	381	157	0	0	0	317	746	0	0	1298	222
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1094	381	157	0	0	0	317	746	0	0	1298	222
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1094	381	157	0	0	0	317	746	0	0	1298	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1094	381	157	0	0	0	317	746	0	0	1298	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1094	381	157	0	0	0	317	746	0	0	1298	222
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	0.71	0.29	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	3550	1275	525	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.31	0.30	0.30	0.00	0.00	0.00	0.10	0.13	0.00	0.00	0.23	0.13
Crit Moves:	****						****				****	
Green Time:	58.6	58.6	58.6	0.0	0.0	0.0	19.1	62.4	0.0	0.0	43.3	43.3
Volume/Cap:	0.68	0.66	0.66	0.00	0.00	0.00	0.68	0.27	0.00	0.00	0.68	0.38
Uniform Del:	28.4	28.0	28.0	0.0	0.0	0.0	52.6	20.2	0.0	0.0	37.4	33.1
IncremntDel:	0.8	0.7	0.7	0.0	0.0	0.0	4.2	0.1	0.0	0.0	1.0	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	29.2	28.7	28.7	0.0	0.0	0.0	56.8	20.3	0.0	0.0	38.5	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.2	28.7	28.7	0.0	0.0	0.0	56.8	20.3	0.0	0.0	38.5	33.5
LOS by Move:	C	C	C	A	A	A	E+	C+	A	A	D+	C-
HCM2kAvgQ:	19	18	18	0	0	0	7	6	0	0	15	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1211: LAWRENCE / STEVENS CREEK E



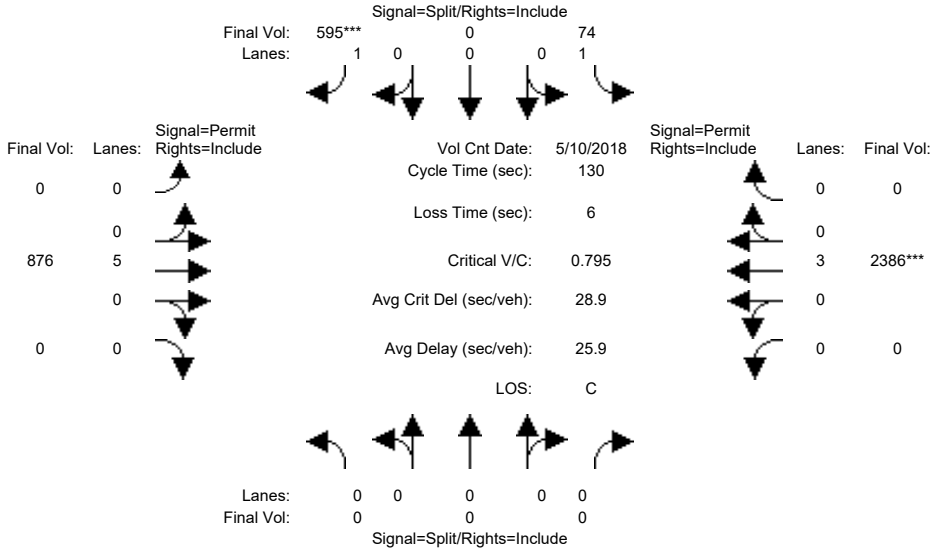
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	470	628	278	0	0	0	241	1453	0	0	992	244
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	470	628	278	0	0	0	241	1453	0	0	992	244
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	470	628	278	0	0	0	241	1453	0	0	992	244
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	470	628	278	0	0	0	241	1453	0	0	992	244
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	470	628	278	0	0	0	241	1453	0	0	992	244
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	470	628	278	0	0	0	241	1453	0	0	992	244
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.04	1.36	0.60	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	1827	2441	1081	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.00	0.00	0.00	0.08	0.25	0.00	0.00	0.17	0.14
Crit Moves:	****						****				****	
Green Time:	56.2	56.2	56.2	0.0	0.0	0.0	16.7	54.8	0.0	0.0	38.0	38.0
Volume/Cap:	0.55	0.55	0.55	0.00	0.00	0.00	0.55	0.56	0.00	0.00	0.55	0.44
Uniform Del:	22.8	22.8	22.8	0.0	0.0	0.0	48.1	23.8	0.0	0.0	33.9	32.5
IncremntDel:	0.3	0.3	0.3	0.0	0.0	0.0	1.5	0.3	0.0	0.0	0.4	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	23.1	23.1	23.1	0.0	0.0	0.0	49.6	24.1	0.0	0.0	34.2	33.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.1	23.1	23.1	0.0	0.0	0.0	49.6	24.1	0.0	0.0	34.2	33.1
LOS by Move:	C	C	C	A	A	A	D	C	A	A	C-	C-
HCM2kAvgQ:	13	13	13	0	0	0	5	13	0	0	10	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



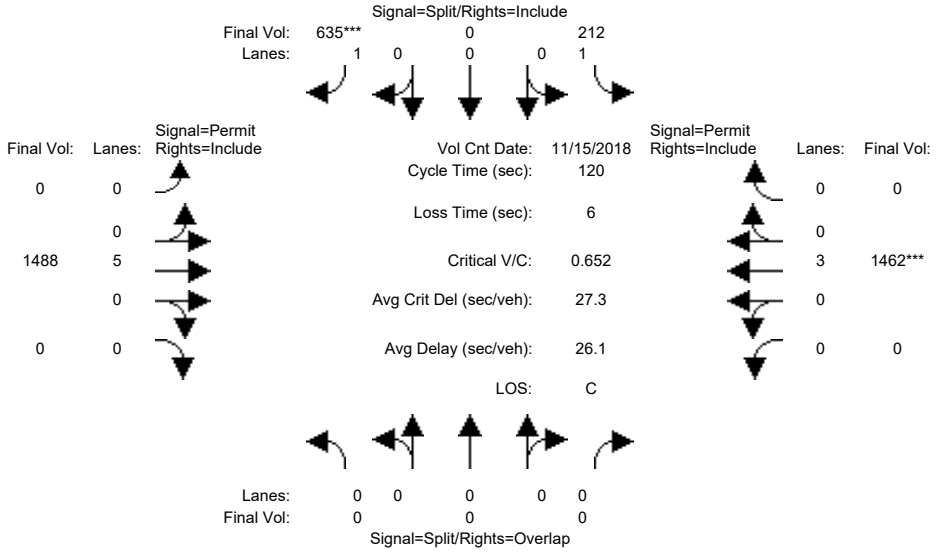
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	15	15	15	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	5.4	5.4	5.4	4.0	5.9	4.0	4.0	5.6	4.0
Volume Module: >> Count Date: 10 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	74	0	595	0	876	0	0	2386	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	74	0	595	0	876	0	0	2386	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	74	0	595	0	876	0	0	2386	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	74	0	595	0	876	0	0	2386	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	74	0	595	0	876	0	0	2386	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	74	0	595	0	876	0	0	2386	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.34	0.00	0.09	0.00	0.00	0.42	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	55.6	0.0	55.6	0.0	68.4	0.0	0.0	68.4	0.0
Volume/Cap:	0.00	0.00	0.00	0.10	0.00	0.80	0.00	0.18	0.00	0.00	0.80	0.00
Uniform Del:	0.0	0.0	0.0	22.2	0.0	32.3	0.0	16.1	0.0	0.0	25.1	0.0
IncremntDel:	0.0	0.0	0.0	0.1	0.0	5.9	0.0	0.0	0.0	0.0	1.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	22.3	0.0	38.2	0.0	16.1	0.0	0.0	26.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	22.3	0.0	38.2	0.0	16.1	0.0	0.0	26.6	0.0
LOS by Move:	A	A	A	C+	A	D+	A	B	A	A	C	A
HCM2kAvgQ:	0	0	0	2	0	24	0	4	0	0	25	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



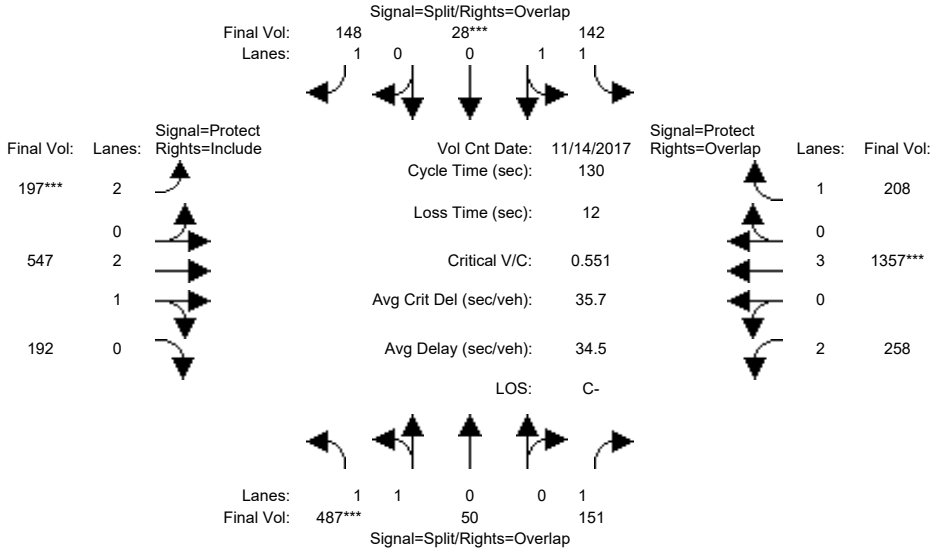
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	0	0	212	0	635	0	1488	0	0	1462	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	212	0	635	0	1488	0	0	1462	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	212	0	635	0	1488	0	0	1462	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	212	0	635	0	1488	0	0	1462	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	212	0	635	0	1488	0	0	1462	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	212	0	635	0	1488	0	0	1462	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.36	0.00	0.16	0.00	0.00	0.26	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	66.8	0.0	66.8	0.0	47.2	0.0	0.0	47.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.22	0.00	0.65	0.00	0.40	0.00	0.00	0.65	0.00
Uniform Del:	0.0	0.0	0.0	13.4	0.0	18.5	0.0	26.2	0.0	0.0	29.7	0.0
IncremntDel:	0.0	0.0	0.0	0.1	0.0	1.6	0.0	0.1	0.0	0.0	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	13.5	0.0	20.1	0.0	26.2	0.0	0.0	30.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	13.5	0.0	20.1	0.0	26.2	0.0	0.0	30.4	0.0
LOS by Move:	A	A	A	B	A	C+	A	C	A	A	C	A
HCM2kAvgQ:	0	0	0	4	0	18	0	8	0	0	14	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



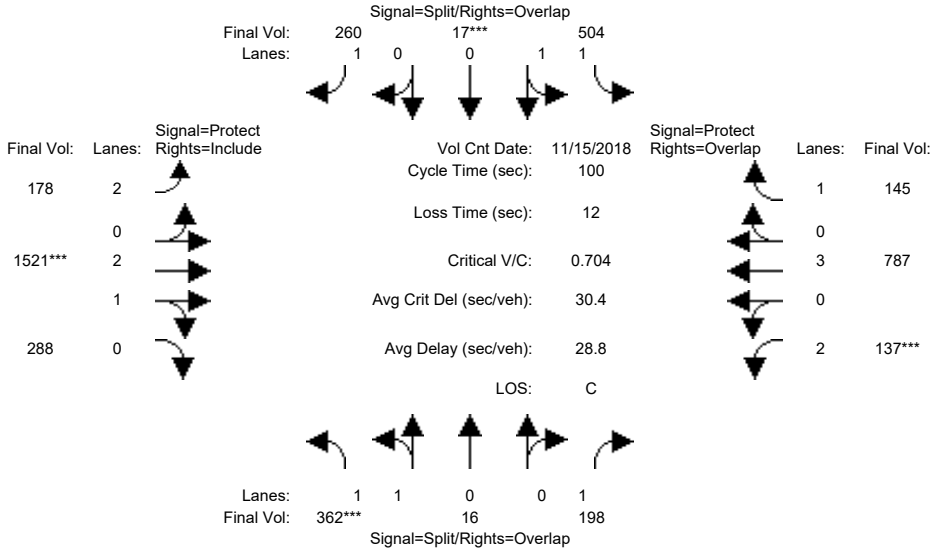
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	487	50	151	142	28	148	197	547	192	258	1357	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	50	151	142	28	148	197	547	192	258	1357	208
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	487	50	151	142	28	148	197	547	192	258	1357	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	487	50	151	142	28	148	197	547	192	258	1357	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	487	50	151	142	28	148	197	547	192	258	1357	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	487	50	151	142	28	148	197	547	192	258	1357	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	0.99	0.95	0.83	1.00	0.92
Lanes:	1.82	0.18	1.00	1.68	0.32	1.00	2.00	2.19	0.81	2.00	3.00	1.00
Final Sat.:	3219	331	1750	2965	585	1750	3150	4143	1454	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.09	0.05	0.05	0.08	0.06	0.13	0.13	0.08	0.24	0.12
Crit Moves:	****				****		****				****	
Green Time:	35.7	35.7	62.9	11.3	11.3	26.1	14.8	43.8	43.8	27.2	56.2	67.5
Volume/Cap:	0.55	0.55	0.18	0.55	0.55	0.42	0.55	0.39	0.39	0.39	0.55	0.23
Uniform Del:	40.3	40.3	19.0	56.9	56.9	45.4	54.5	32.9	32.9	44.3	27.5	17.0
IncremntDel:	0.7	0.7	0.1	2.1	2.1	0.8	1.8	0.1	0.1	0.4	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.0	41.0	19.1	59.0	59.0	46.2	56.3	33.1	33.1	44.7	27.8	17.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.0	41.0	19.1	59.0	59.0	46.2	56.3	33.1	33.1	44.7	27.8	17.2
LOS by Move:	D	D	B-	E+	E+	D	E+	C-	C-	D	C	B
HCM2kAvgQ:	9	9	3	3	3	5	4	7	7	5	13	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



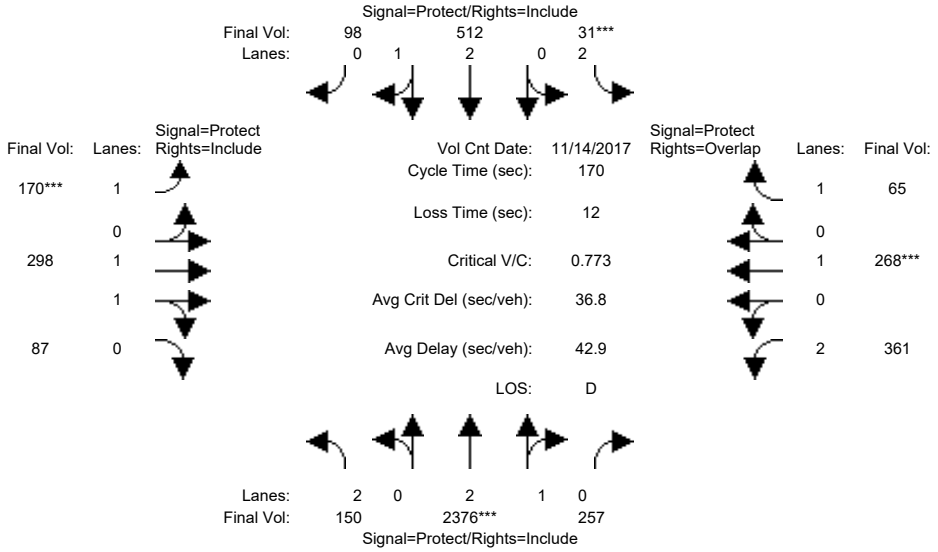
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	362	16	198	504	17	260	178	1521	288	137	787	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	362	16	198	504	17	260	178	1521	288	137	787	145
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	362	16	198	504	17	260	178	1521	288	137	787	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	362	16	198	504	17	260	178	1521	288	137	787	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	362	16	198	504	17	260	178	1521	288	137	787	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	362	16	198	504	17	260	178	1521	288	137	787	145
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	0.99	0.95	0.83	1.00	0.92
Lanes:	1.92	0.08	1.00	1.94	0.06	1.00	2.00	2.50	0.50	2.00	3.00	1.00
Final Sat.:	3400	150	1750	3434	116	1750	3150	4707	891	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.15	0.15	0.15	0.06	0.32	0.32	0.04	0.14	0.08
Crit Moves:	****				****			****			****	
Green Time:	15.0	15.0	22.0	20.6	20.6	38.3	17.6	45.4	45.4	7.0	34.8	55.4
Volume/Cap:	0.71	0.71	0.52	0.71	0.71	0.39	0.32	0.71	0.71	0.62	0.40	0.15
Uniform Del:	40.5	40.5	34.3	36.9	36.9	22.4	36.0	22.0	22.0	45.2	24.7	10.8
IncremntDel:	4.5	4.5	1.2	3.3	3.3	0.4	0.3	1.0	1.0	5.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.0	45.0	35.5	40.2	40.2	22.8	36.3	23.0	23.0	50.6	24.8	10.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.0	45.0	35.5	40.2	40.2	22.8	36.3	23.0	23.0	50.6	24.8	10.9
LOS by Move:	D	D	D+	D	D	C+	D+	C+	C+	D	C	B+
HCM2kAvgQ:	6	6	6	7	7	6	3	15	15	3	6	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



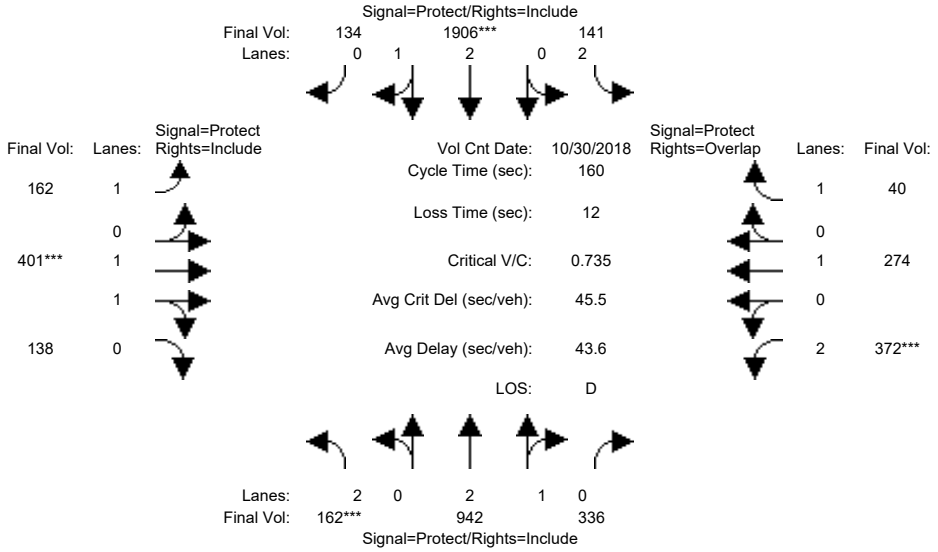
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	150	2376	257	31	512	98	170	298	87	361	268	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	2376	257	31	512	98	170	298	87	361	268	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2376	257	31	512	98	170	298	87	361	268	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	2376	257	31	512	98	170	298	87	361	268	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	2376	257	31	512	98	170	298	87	361	268	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	2376	257	31	512	98	170	298	87	361	268	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.70	0.30	2.00	2.50	0.50	1.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	3150	5053	547	3150	4699	899	1750	2863	836	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.11	0.11	0.10	0.10	0.10	0.11	0.14	0.04
Crit Moves:		****		****			****				****	
Green Time:	32.6	100	100.2	7.0	74.6	74.6	20.7	24.2	24.2	26.6	30.1	37.1
Volume/Cap:	0.25	0.80	0.80	0.24	0.25	0.25	0.80	0.73	0.73	0.73	0.80	0.17
Uniform Del:	58.3	27.0	27.0	78.9	30.0	30.0	72.6	69.8	69.8	68.3	67.1	54.0
IncremntDel:	0.2	1.4	1.4	1.0	0.1	0.1	18.7	5.2	5.2	5.6	12.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	28.5	28.5	79.9	30.1	30.1	91.3	75.1	75.1	73.9	79.6	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	28.5	28.5	79.9	30.1	30.1	91.3	75.1	75.1	73.9	79.6	54.2
LOS by Move:	E+	C	C	E-	C	C	F	E-	E-	E	E-	D-
HCM2kAvgQ:	4	35	35	1	6	6	11	11	11	11	13	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



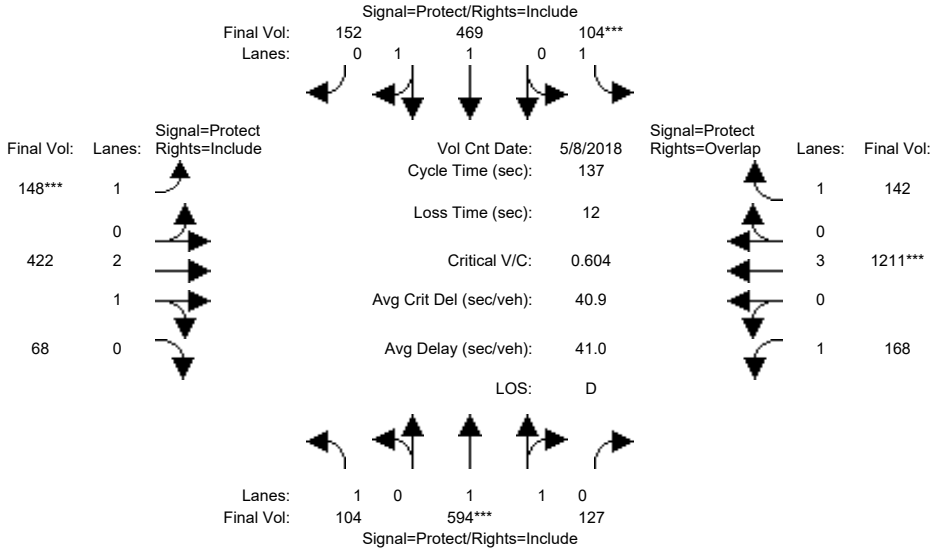
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	162	942	336	141	1906	134	162	401	138	372	274	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	942	336	141	1906	134	162	401	138	372	274	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	942	336	141	1906	134	162	401	138	372	274	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	942	336	141	1906	134	162	401	138	372	274	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	942	336	141	1906	134	162	401	138	372	274	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	942	336	141	1906	134	162	401	138	372	274	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.18	0.82	2.00	2.80	0.20	1.00	1.47	0.53	2.00	1.00	1.00
Final Sat.:	3150	4126	1472	3150	5232	368	1750	2752	947	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.23	0.04	0.36	0.36	0.09	0.15	0.15	0.12	0.14	0.02
Crit Moves:	****				****			****			****	
Green Time:	11.2	75.7	75.7	14.8	79.3	79.3	22.5	31.7	31.7	25.7	35.0	49.8
Volume/Cap:	0.73	0.48	0.48	0.48	0.73	0.73	0.66	0.73	0.73	0.73	0.66	0.07
Uniform Del:	72.9	28.8	28.8	68.9	32.0	32.0	65.1	60.2	60.2	63.9	57.1	38.8
IncremntDel:	12.1	0.1	0.1	1.3	1.0	1.0	6.5	3.9	3.9	5.5	3.9	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.0	28.9	28.9	70.2	33.0	33.0	71.6	64.1	64.1	69.4	60.9	38.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	28.9	28.9	70.2	33.0	33.0	71.6	64.1	64.1	69.4	60.9	38.9
LOS by Move:	F	C	C	E	C-	C-	E	E	E	E	E	D+
HCM2kAvgQ:	5	14	14	4	26	26	9	14	14	10	12	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



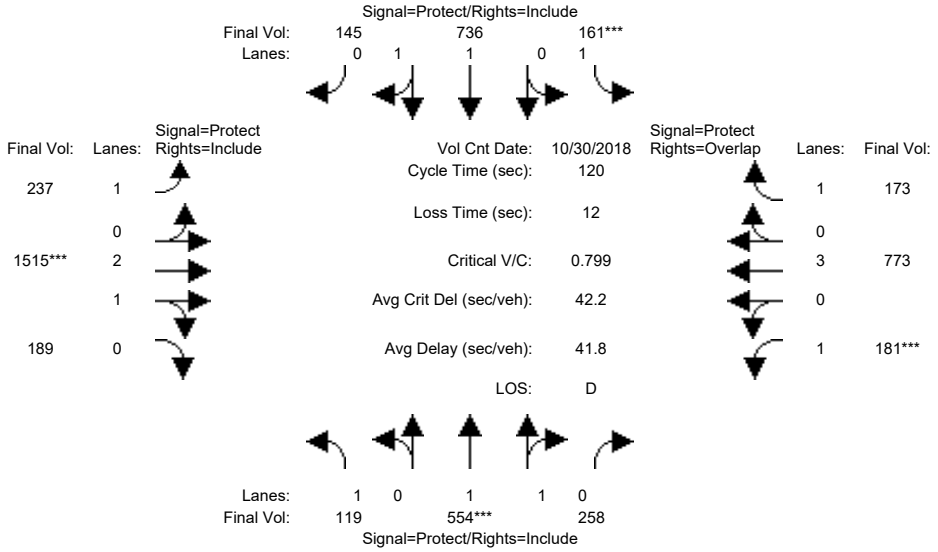
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	104	594	127	104	469	152	148	422	68	168	1211	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	594	127	104	469	152	148	422	68	168	1211	142
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	594	127	104	469	152	148	422	68	168	1211	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	594	127	104	469	152	148	422	68	168	1211	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	594	127	104	469	152	148	422	68	168	1211	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	594	127	104	469	152	148	422	68	168	1211	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	1.50	0.50	1.00	2.57	0.43	1.00	3.00	1.00
Final Sat.:	1750	3048	652	1750	2794	905	1750	4822	777	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.06	0.17	0.17	0.08	0.09	0.09	0.10	0.21	0.08
Crit Moves:		****		****			****				****	
Green Time:	15.1	44.2	44.2	13.5	42.6	42.6	19.2	32.1	32.1	35.2	48.2	61.6
Volume/Cap:	0.54	0.60	0.60	0.60	0.54	0.54	0.60	0.37	0.37	0.37	0.60	0.18
Uniform Del:	57.7	39.1	39.1	59.2	39.1	39.1	55.3	44.0	44.0	41.8	36.6	22.6
IncremntDel:	3.1	0.9	0.9	6.0	0.5	0.5	4.2	0.2	0.2	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	60.8	39.9	39.9	65.2	39.6	39.6	59.6	44.2	44.2	42.3	37.1	22.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.8	39.9	39.9	65.2	39.6	39.6	59.6	44.2	44.2	42.3	37.1	22.7
LOS by Move:	E	D	D	E	D	D	E+	D	D	D	D+	C+
HCM2kAvgQ:	4	12	12	5	11	11	6	6	6	6	13	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



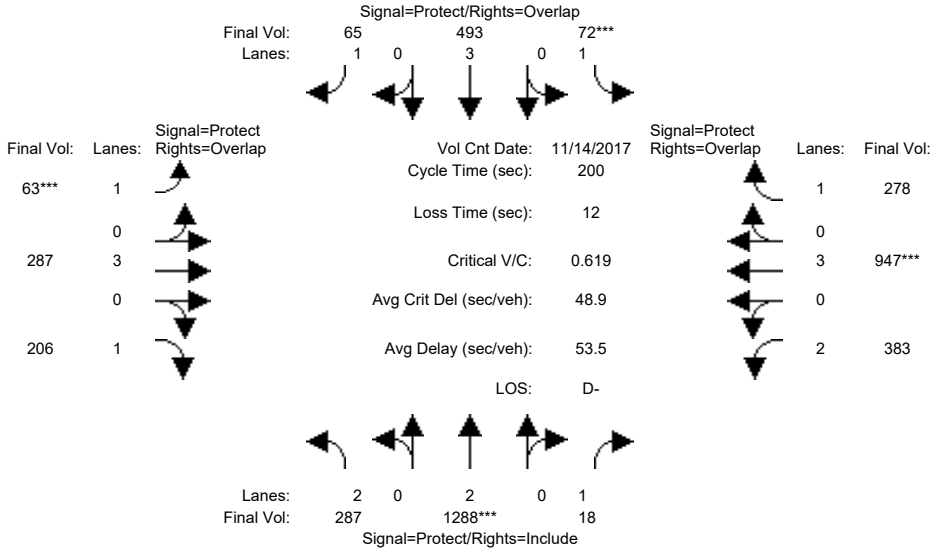
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	119	554	258	161	736	145	237	1515	189	181	773	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	554	258	161	736	145	237	1515	189	181	773	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	554	258	161	736	145	237	1515	189	181	773	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	554	258	161	736	145	237	1515	189	181	773	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	554	258	161	736	145	237	1515	189	181	773	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	554	258	161	736	145	237	1515	189	181	773	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.35	0.65	1.00	1.66	0.34	1.00	2.65	0.35	1.00	3.00	1.00
Final Sat.:	1750	2524	1175	1750	3091	609	1750	4978	621	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.09	0.24	0.24	0.14	0.30	0.30	0.10	0.14	0.10
Crit Moves:		****		****				****		****		
Green Time:	10.4	33.0	33.0	13.8	36.4	36.4	30.6	45.7	45.7	15.5	30.6	44.4
Volume/Cap:	0.79	0.80	0.80	0.80	0.79	0.79	0.53	0.80	0.80	0.80	0.53	0.27
Uniform Del:	53.7	40.4	40.4	51.7	38.2	38.2	38.5	33.1	33.1	50.7	38.5	26.4
IncremntDel:	23.1	4.6	4.6	19.8	3.7	3.7	1.2	2.2	2.2	17.9	0.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	76.8	45.0	45.0	71.5	42.0	42.0	39.8	35.3	35.3	68.6	38.9	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.8	45.0	45.0	71.5	42.0	42.0	39.8	35.3	35.3	68.6	38.9	26.6
LOS by Move:	E-	D	D	E	D	D	D	D+	D+	E	D+	C
HCM2kAvgQ:	5	15	15	7	15	15	8	19	19	8	8	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



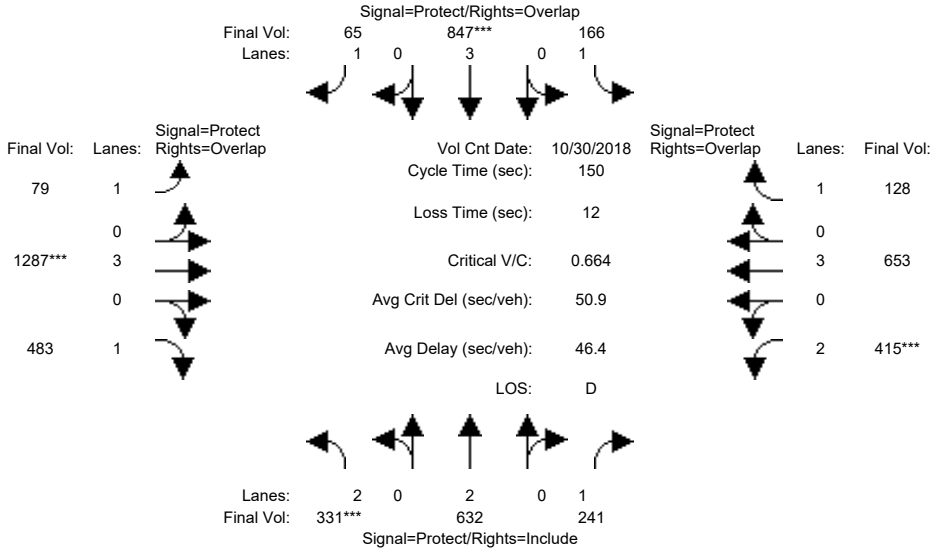
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	287	1288	18	72	493	65	63	287	206	383	947	278
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1288	18	72	493	65	63	287	206	383	947	278
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	1288	18	72	493	65	63	287	206	383	947	278
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1288	18	72	493	65	63	287	206	383	947	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1288	18	72	493	65	63	287	206	383	947	278
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	1288	18	72	493	65	63	287	206	383	947	278
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.34	0.01	0.04	0.09	0.04	0.04	0.05	0.12	0.12	0.17	0.16
Crit Moves:		****		****			****				****	
Green Time:	63.0	109	109.4	13.3	59.8	71.4	11.6	19.1	82.1	46.2	53.6	66.9
Volume/Cap:	0.29	0.62	0.02	0.62	0.29	0.10	0.62	0.53	0.29	0.53	0.62	0.47
Uniform Del:	51.7	31.0	20.7	90.9	53.8	42.9	92.0	86.1	39.4	67.4	64.2	52.6
IncremntDel:	0.2	0.6	0.0	9.8	0.1	0.1	11.1	1.0	0.2	0.7	0.8	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.8	31.6	20.7	100.7	53.9	43.0	103.1	87.1	39.6	68.1	65.0	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.8	31.6	20.7	100.7	53.9	43.0	103.1	87.1	39.6	68.1	65.0	53.2
LOS by Move:	D-	C	C+	F	D-	D	F	F	D	E	E	D-
HCM2kAvgQ:	8	26	1	5	7	3	4	5	9	12	17	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



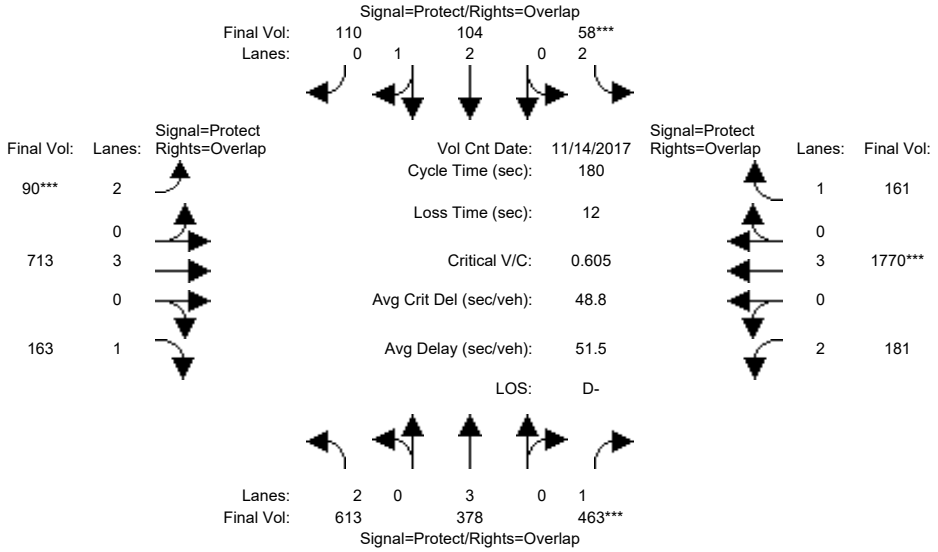
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	331	632	241	166	847	65	79	1287	483	415	653	128
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	331	632	241	166	847	65	79	1287	483	415	653	128
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	331	632	241	166	847	65	79	1287	483	415	653	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	331	632	241	166	847	65	79	1287	483	415	653	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	331	632	241	166	847	65	79	1287	483	415	653	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	331	632	241	166	847	65	79	1287	483	415	653	128
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.17	0.14	0.09	0.15	0.04	0.05	0.23	0.28	0.13	0.11	0.07
Crit Moves:	****				****			****		****		
Green Time:	23.7	36.5	36.5	20.8	33.6	56.9	23.4	51.0	74.7	29.7	57.4	78.2
Volume/Cap:	0.66	0.68	0.57	0.68	0.66	0.10	0.29	0.66	0.55	0.66	0.30	0.14
Uniform Del:	59.4	51.5	49.8	61.5	53.1	30.0	56.0	42.2	26.1	55.5	32.3	18.6
IncremntDel:	3.4	2.1	1.8	7.8	1.3	0.1	0.6	0.9	0.8	2.7	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	62.8	53.7	51.6	69.3	54.4	30.1	56.6	43.1	26.9	58.2	32.4	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.8	53.7	51.6	69.3	54.4	30.1	56.6	43.1	26.9	58.2	32.4	18.6
LOS by Move:	E	D-	D-	E	D-	C	E+	D	C	E+	C-	B-
HCM2kAvgQ:	9	13	10	8	12	2	3	16	16	11	7	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5320: CENTRAL EXPWY/MARY AVE



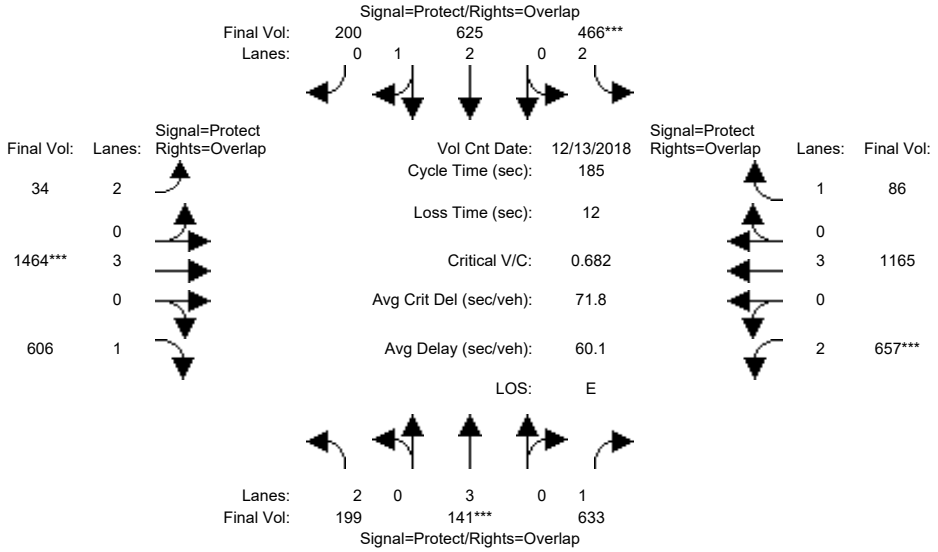
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	613	378	463	58	104	110	90	713	163	181	1770	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	378	463	58	104	110	90	713	163	181	1770	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	378	463	58	104	110	90	713	163	181	1770	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	378	463	58	104	110	90	713	163	181	1770	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	378	463	58	104	110	90	713	163	181	1770	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	378	463	58	104	110	90	713	163	181	1770	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.07	0.26	0.02	0.03	0.06	0.03	0.13	0.09	0.06	0.31	0.09
Crit Moves:			****	****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.90	0.21	0.62	0.28	0.15	0.25	0.40	0.34	0.16	0.55	0.77	0.20
Uniform Del:	68.7	44.3	40.3	80.1	62.5	54.1	79.9	40.7	16.9	76.7	46.3	27.8
IncremntDel:	15.1	0.1	1.6	0.7	0.1	0.2	1.2	0.1	0.1	2.1	1.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	40.8	17.0	78.7	47.9	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	44.3	41.9	80.8	62.5	54.3	81.1	40.8	17.0	78.7	47.9	28.0
LOS by Move:	F	D	D	F	E	D-	F	D	B	E-	D	C
HCM2kAvgQ:	21	5	21	2	2	5	3	9	4	6	28	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5320: CENTRAL EXPWY/MARY AVE



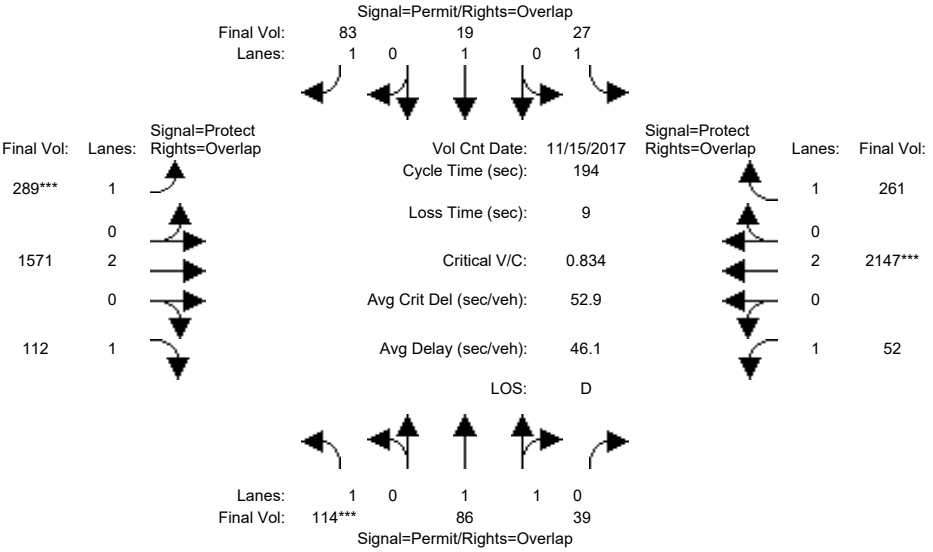
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	199	141	633	466	625	200	34	1464	606	657	1165	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	141	633	466	625	200	34	1464	606	657	1165	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	141	633	466	625	200	34	1464	606	657	1165	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	141	633	466	625	200	34	1464	606	657	1165	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	141	633	466	625	200	34	1464	606	657	1165	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	141	633	466	625	200	34	1464	606	657	1165	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.25	0.75	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4241	1357	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.36	0.15	0.15	0.15	0.01	0.26	0.35	0.21	0.20	0.05
Crit Moves:		****		****				****		****		
Green Time:	16.9	37.0	83.2	32.8	52.9	62.7	9.8	57.0	73.9	46.2	93.4	126.2
Volume/Cap:	0.69	0.12	0.80	0.83	0.52	0.44	0.20	0.83	0.87	0.83	0.40	0.07
Uniform Del:	81.5	60.7	43.8	73.5	55.3	47.4	83.9	59.6	51.1	65.7	28.5	9.8
IncremntDel:	7.0	0.0	6.0	10.5	0.3	0.2	0.6	3.6	11.2	7.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.14	1.03	1.25	1.60
Delay/Veh:	88.5	60.8	49.9	83.9	55.6	47.6	84.5	67.3	69.2	75.6	35.6	15.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	60.8	49.9	83.9	55.6	47.6	84.5	67.3	69.2	75.6	35.6	15.7
LOS by Move:	F	E	D	F	E+	D	F	E	E	E-	D+	B
HCM2kAvgQ:	7	2	34	17	13	12	1	28	37	23	16	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



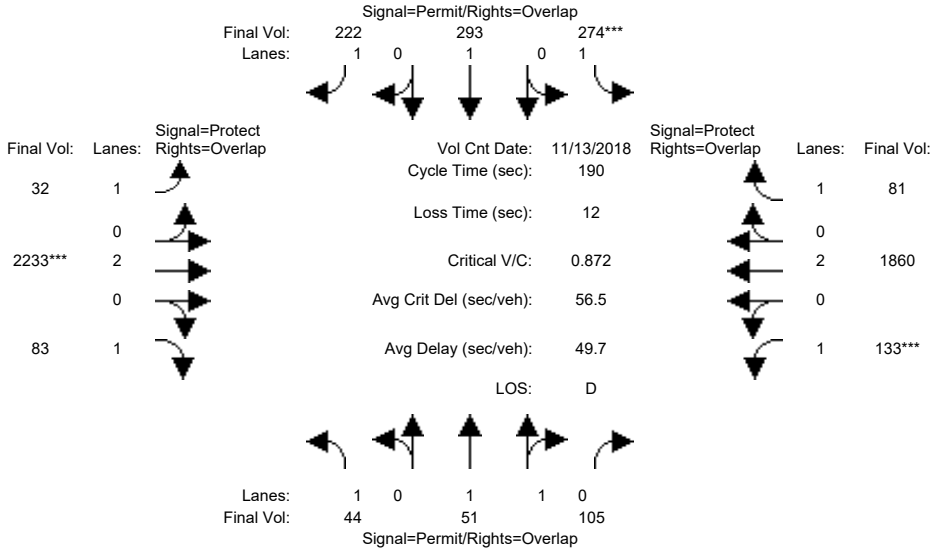
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	114	86	39	27	19	83	289	1571	112	52	2147	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	86	39	27	19	83	289	1571	112	52	2147	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	86	39	27	19	83	289	1571	112	52	2147	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	86	39	27	19	83	289	1571	112	52	2147	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	86	39	27	19	83	289	1571	112	52	2147	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	86	39	27	19	83	289	1571	112	52	2147	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.36	0.64	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	2545	1154	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.03	0.02	0.01	0.05	0.17	0.41	0.06	0.03	0.56	0.15
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	0.53	0.28	0.17	0.13	0.08	0.16	0.93	0.58	0.09	0.41	0.93	0.25
Uniform Del:	79.9	77.4	65.0	75.7	75.3	49.8	78.5	13.9	8.7	85.9	34.4	17.6
IncremntDel:	2.6	0.3	0.1	0.3	0.1	0.1	33.0	0.3	0.0	2.1	7.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	36.9	22.9	88.0	41.9	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.5	77.7	65.1	76.0	75.5	49.9	122.8	36.9	22.9	88.0	41.9	17.7
LOS by Move:	F	E-	E	E-	E-	D	F	D+	C+	F	D	B
HCM2kAvgQ:	7	3	3	1	1	4	22	39	5	3	58	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



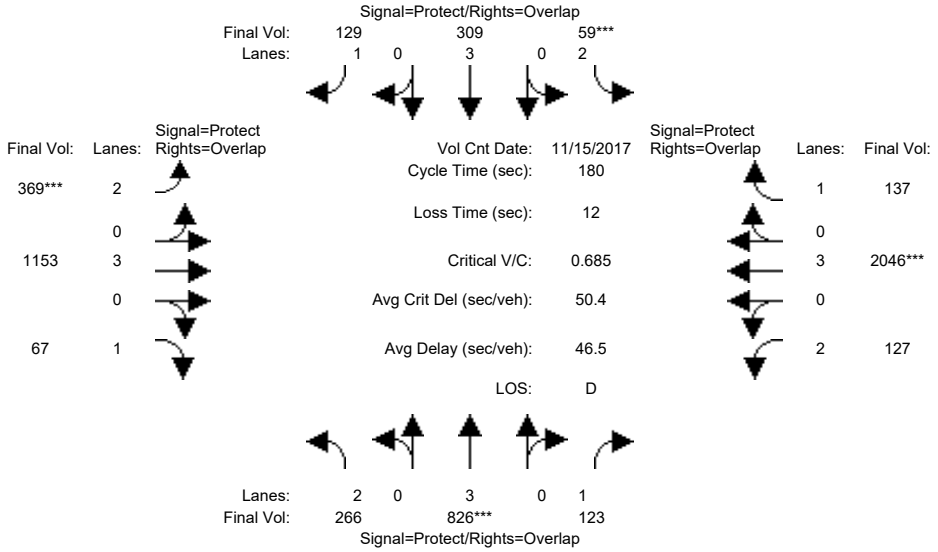
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	44	51	105	274	293	222	32	2233	83	133	1860	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	51	105	274	293	222	32	2233	83	133	1860	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	51	105	274	293	222	32	2233	83	133	1860	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	51	105	274	293	222	32	2233	83	133	1860	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	51	105	274	293	222	32	2233	83	133	1860	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	51	105	274	293	222	32	2233	83	133	1860	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.06	0.16	0.15	0.13	0.02	0.59	0.05	0.08	0.49	0.05
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.13	0.14	0.21	0.81	0.80	0.49	0.28	0.89	0.07	0.85	0.72	0.07
Uniform Del:	67.5	67.6	55.4	78.0	77.8	63.8	90.1	28.6	12.4	90.7	19.9	10.6
IncremntDel:	0.2	0.1	0.1	13.7	11.7	0.9	1.4	4.5	0.0	33.9	1.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	48.2	18.9	124.5	32.7	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	67.6	55.5	91.7	89.5	64.6	91.5	48.2	18.9	124.5	32.7	17.0
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	C-	B
HCM2kAvgQ:	2	2	5	18	18	12	2	64	3	9	45	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



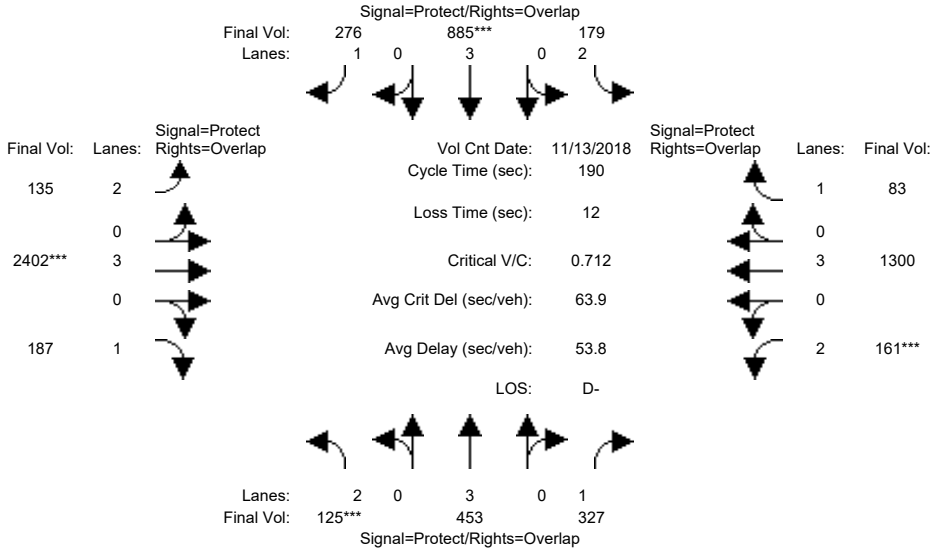
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	266	826	123	59	309	129	369	1153	67	127	2046	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	826	123	59	309	129	369	1153	67	127	2046	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	826	123	59	309	129	369	1153	67	127	2046	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	826	123	59	309	129	369	1153	67	127	2046	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	826	123	59	309	129	369	1153	67	127	2046	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	826	123	59	309	129	369	1153	67	127	2046	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.07	0.02	0.05	0.07	0.12	0.20	0.04	0.04	0.36	0.08
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	0.77	0.65	0.22	0.24	0.28	0.22	0.82	0.37	0.06	0.44	0.73	0.14
Uniform Del:	78.0	63.5	45.5	78.1	62.1	42.9	74.8	23.8	11.4	77.5	36.4	18.2
IncremntDel:	10.3	1.2	0.2	0.5	0.1	0.2	11.1	0.1	0.0	1.1	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.8	11.5	78.6	37.4	18.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.3	64.7	45.7	78.6	62.2	43.1	86.0	23.8	11.5	78.6	37.4	18.3
LOS by Move:	F	E	D	E-	E	D	F	C	B+	E-	D+	B-
HCM2kAvgQ:	9	13	5	2	5	5	12	12	1	4	30	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



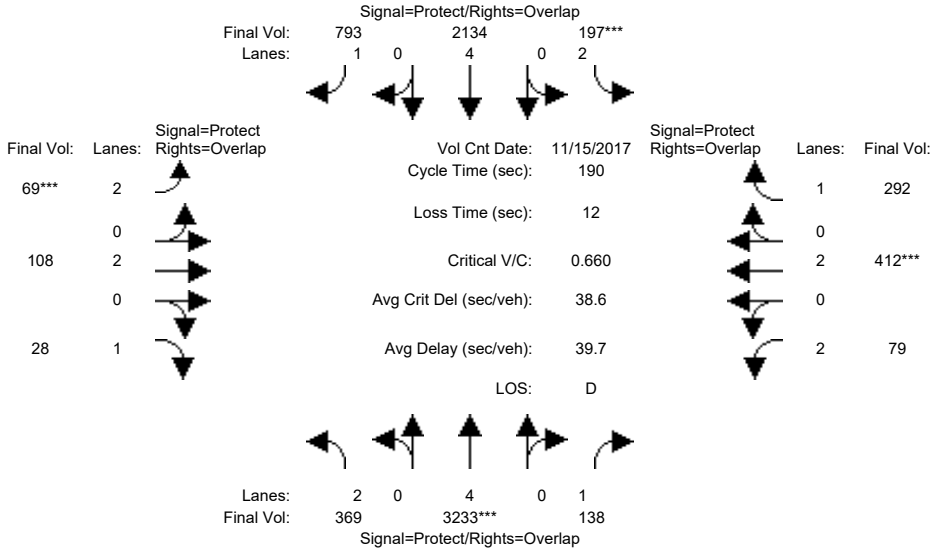
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	125	453	327	179	885	276	135	2402	187	161	1300	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	453	327	179	885	276	135	2402	187	161	1300	83
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	453	327	179	885	276	135	2402	187	161	1300	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	453	327	179	885	276	135	2402	187	161	1300	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	453	327	179	885	276	135	2402	187	161	1300	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	453	327	179	885	276	135	2402	187	161	1300	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.08	0.19	0.06	0.16	0.16	0.04	0.42	0.11	0.05	0.23	0.05
Crit Moves:	****				****			****			****	
Green Time:	15.0	39.1	53.1	16.0	40.1	57.8	17.7	109	123.9	14.0	105	121.2
Volume/Cap:	0.50	0.39	0.67	0.67	0.74	0.52	0.46	0.74	0.16	0.69	0.41	0.07
Uniform Del:	83.9	65.1	60.7	84.4	70.0	54.6	81.6	29.9	12.9	85.9	24.5	13.1
IncremntDel:	1.6	0.2	3.6	6.6	2.4	0.9	1.1	0.9	0.1	8.7	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.89	2.25	1.00	0.67	0.47
Delay/Veh:	85.6	65.3	64.2	91.1	72.4	55.5	88.3	57.6	29.0	94.7	16.6	6.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	65.3	64.2	91.1	72.4	55.5	88.3	57.6	29.0	94.7	16.6	6.2
LOS by Move:	F	E	E	F	E	E+	F	E+	C	F	B	A
HCM2kAvgQ:	4	7	18	6	16	14	4	41	9	7	9	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



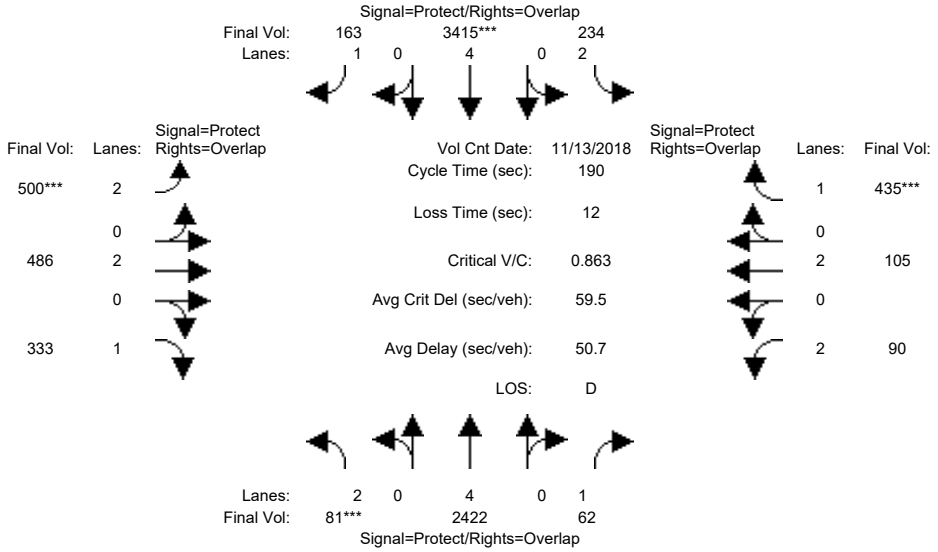
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	90	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	369	3233	138	197	2134	793	69	108	28	79	412	292
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	369	3233	138	197	2134	793	69	108	28	79	412	292
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	369	3233	138	197	2134	793	69	108	28	79	412	292
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	369	3233	138	197	2134	793	69	108	28	79	412	292
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	369	3233	138	197	2134	793	69	108	28	79	412	292
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	369	3233	138	197	2134	793	69	108	28	79	412	292
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.43	0.08	0.06	0.28	0.45	0.02	0.03	0.02	0.03	0.11	0.17
Crit Moves:		****			****			****			****	
Green Time:	23.3	110	119.3	17.1	104	115.8	11.4	35.1	58.4	9.0	32.6	49.7
Volume/Cap:	0.96	0.73	0.13	0.69	0.51	0.74	0.37	0.15	0.05	0.53	0.63	0.64
Uniform Del:	82.8	29.1	14.3	83.9	26.8	26.5	85.8	65.0	46.3	88.4	73.1	62.2
IncremntDel:	34.3	0.7	0.1	7.3	0.1	2.9	1.2	0.1	0.0	3.6	2.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	117.1	29.7	14.3	91.2	26.9	29.4	87.0	65.1	46.4	92.0	75.1	65.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.1	29.7	14.3	91.2	26.9	29.4	87.0	65.1	46.4	92.0	75.1	65.2
LOS by Move:	F	C	B	F	C	C	F	E	D	F	E-	E
HCM2kAvgQ:	13	32	3	8	19	35	2	2	1	3	12	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



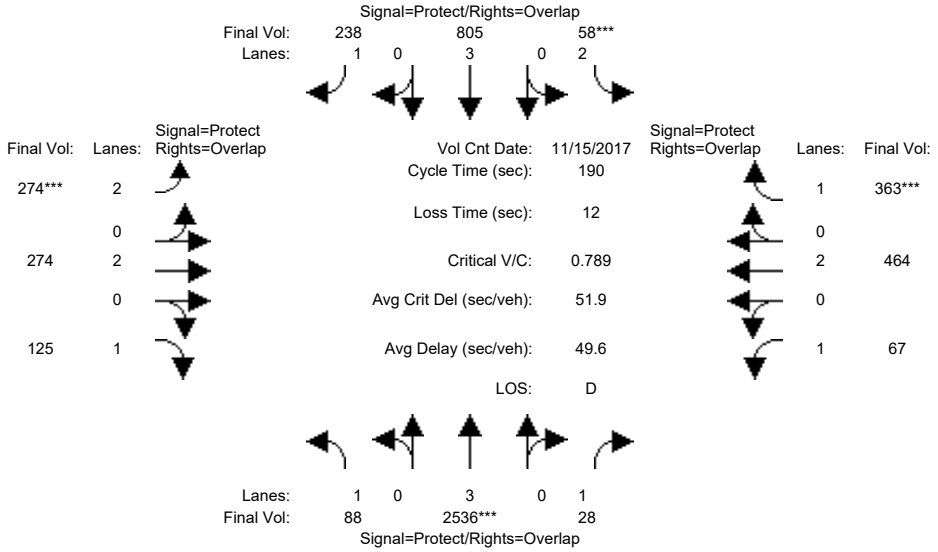
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	89	89	21	98	98	29	45	45	11	27	27
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	81	2422	62	234	3415	163	500	486	333	90	105	435
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	2422	62	234	3415	163	500	486	333	90	105	435
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	2422	62	234	3415	163	500	486	333	90	105	435
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	81	2422	62	234	3415	163	500	486	333	90	105	435
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	2422	62	234	3415	163	500	486	333	90	105	435
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	2422	62	234	3415	163	500	486	333	90	105	435
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.04	0.07	0.45	0.09	0.16	0.13	0.19	0.03	0.03	0.25
Crit Moves:	****				****		****					****
Green Time:	12.0	90.6	103.6	21.4	xxxx	135.3	35.3	53.1	65.1	13.0	30.7	52.1
Volume/Cap:	0.41	0.67	0.06	0.66	0.85	0.13	0.85	0.46	0.56	0.42	0.17	0.91
Uniform Del:	85.6	38.2	20.4	80.8	38.7	8.7	74.8	56.6	50.7	84.9	68.7	66.6
IncremntDel:	1.4	0.5	0.0	4.6	2.0	0.0	11.7	0.3	1.2	1.3	0.1	20.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.00	1.27	1.70	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	86.9	31.0	14.1	85.4	51.3	14.8	86.5	56.9	51.9	86.2	68.8	87.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.9	31.0	14.1	85.4	51.3	14.8	86.5	56.9	51.9	86.2	68.8	87.4
LOS by Move:	F	C	B	F	D-	B	F	E+	D-	F	E	F
HCM2kAvgQ:	3	22	1	9	46	5	17	11	16	3	3	29

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



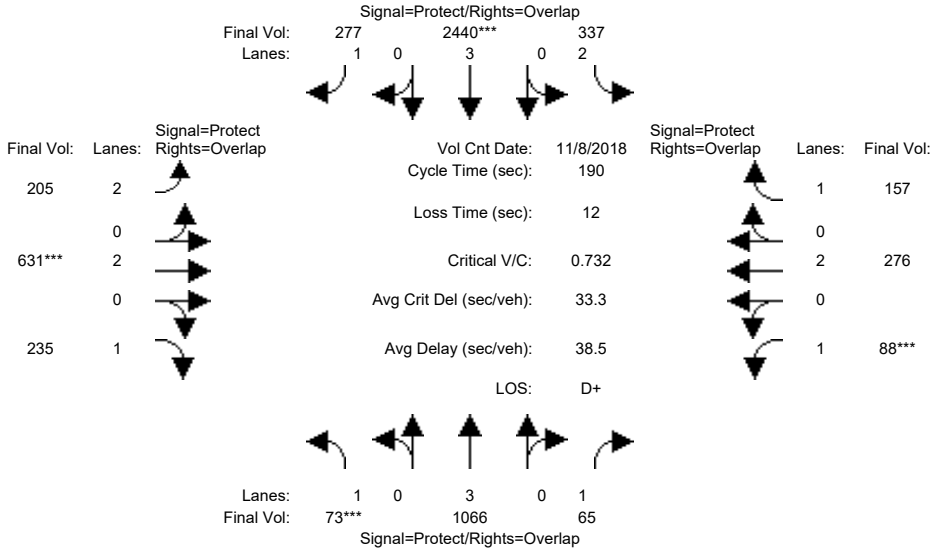
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	80	10	14	10	10	14	10	10
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	88	2983	28	58	947	238	274	274	125	67	464	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	2983	28	58	947	238	274	274	125	67	464	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	2983	28	58	947	238	274	274	125	67	464	363
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	2536	28	58	805	238	274	274	125	67	464	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	2536	28	58	805	238	274	274	125	67	464	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	2536	28	58	805	238	274	274	125	67	464	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.44	0.02	0.02	0.14	0.14	0.09	0.07	0.07	0.04	0.12	0.21
Crit Moves:		****		****			****					****
Green Time:	13.8	101	114.9	10.1	97.9	115.4	17.5	42.0	55.8	13.7	38.2	48.3
Volume/Cap:	0.69	0.84	0.03	0.35	0.27	0.22	0.94	0.33	0.24	0.53	0.61	0.82
Uniform Del:	86.0	37.4	15.1	86.8	26.0	16.9	85.8	62.1	51.0	85.1	69.1	66.7
IncremntDel:	15.2	2.2	0.0	1.2	0.1	0.1	38.1	0.2	0.2	4.3	1.4	11.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	101.2	39.5	15.1	88.0	26.0	17.1	123.9	62.3	51.3	89.3	70.5	77.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	101.2	39.5	15.1	88.0	26.0	17.1	123.9	62.3	51.3	89.3	70.5	77.8
LOS by Move:	F	D	B	F	C	B	F	E	D-	F	E	E-
HCM2kAvgQ:	5	40	1	2	8	7	11	7	7	5	13	24

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



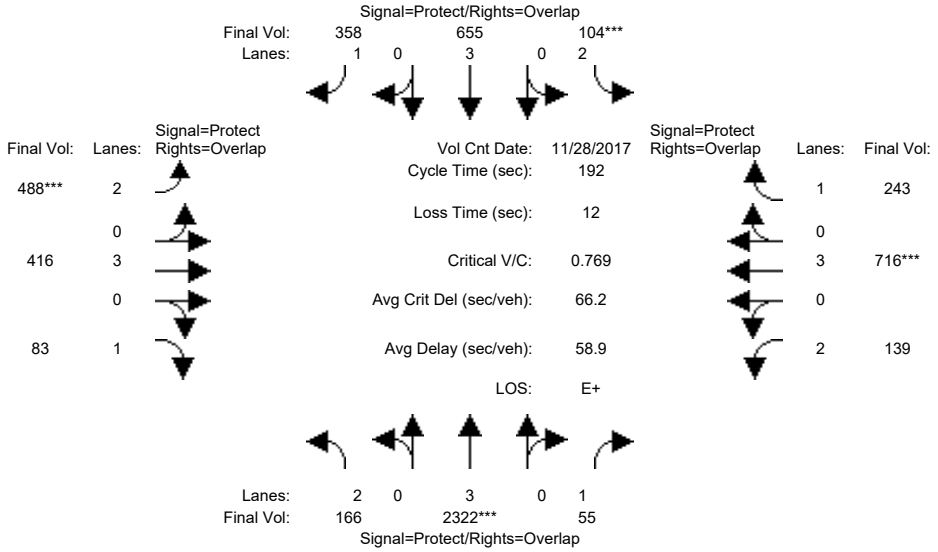
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	11	78	78	34	102	102	14	42	42	12	40	40
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	73	1480	65	337	3343	277	205	631	235	88	276	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	1480	65	337	3343	277	205	631	235	88	276	157
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	73	1480	65	337	3343	277	205	631	235	88	276	157
User Adj:	1.00	0.72	1.00	1.00	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	1066	65	337	2440	277	205	631	235	88	276	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	1066	65	337	2440	277	205	631	235	88	276	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	1066	65	337	2440	277	205	631	235	88	276	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.04	0.11	0.43	0.16	0.07	0.17	0.13	0.05	0.07	0.09
Crit Moves:	****				****			****			****	
Green Time:	11.0	84.9	98.0	37.0	111	125.5	14.5	43.0	54.0	13.0	41.5	78.5
Volume/Cap:	0.72	0.42	0.07	0.55	0.73	0.24	0.85	0.73	0.47	0.73	0.33	0.22
Uniform Del:	88.0	35.7	23.2	69.0	28.8	13.0	86.7	68.2	56.2	86.8	62.6	35.9
IncremntDel:	22.1	0.1	0.0	1.1	0.9	0.1	23.9	3.3	0.7	20.6	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.84	0.74	1.00	0.61	0.40	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	110.1	30.1	17.2	70.0	18.5	5.4	110.6	71.4	56.9	107.4	62.8	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	110.1	30.1	17.2	70.0	18.5	5.4	110.6	71.4	56.9	107.4	62.8	36.1
LOS by Move:	F	C	B	E	B-	A	F	E	E+	F	E	D+
HCM2kAvgQ:	5	11	1	9	22	2	7	16	12	7	7	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



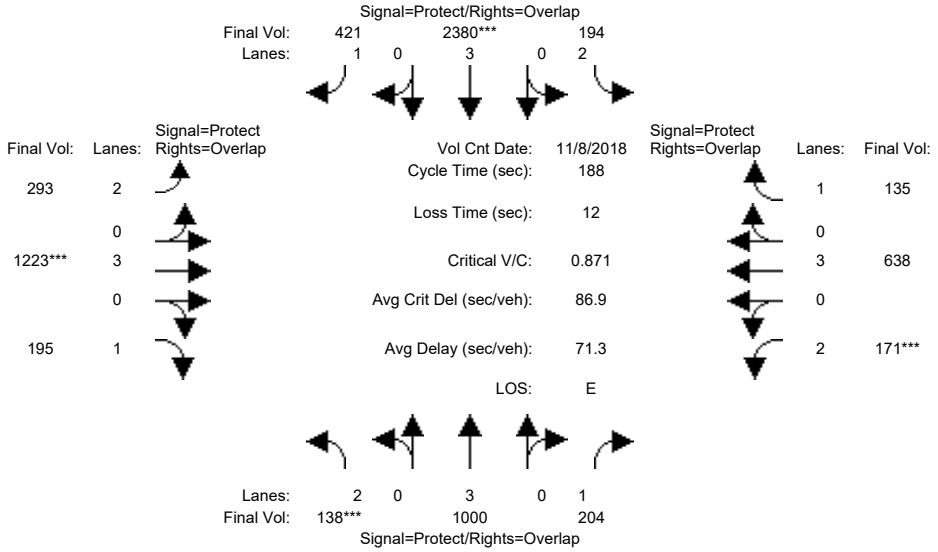
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 28 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	166	2732	55	104	771	358	488	416	83	139	716	243
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	2732	55	104	771	358	488	416	83	139	716	243
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	2732	55	104	771	358	488	416	83	139	716	243
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	2322	55	104	655	358	488	416	83	139	716	243
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	2322	55	104	655	358	488	416	83	139	716	243
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	166	2322	55	104	655	358	488	416	83	139	716	243
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.41	0.03	0.03	0.11	0.20	0.15	0.07	0.05	0.04	0.13	0.14
Crit Moves:		****			****			****			****	
Green Time:	19.3	97.2	111.1	12.3	90.2	116.6	26.4	47.1	66.4	13.9	34.5	46.8
Volume/Cap:	0.52	0.80	0.05	0.51	0.24	0.34	1.13	0.30	0.14	0.61	0.70	0.57
Uniform Del:	82.0	39.5	17.6	86.9	30.5	18.6	82.8	59.0	43.1	86.4	73.9	63.8
IncremntDel:	1.6	1.7	0.0	2.3	0.0	0.2	82.9	0.1	0.1	4.7	2.2	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.6	41.2	17.6	89.2	30.5	18.8	165.7	59.1	43.2	91.0	76.1	65.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.6	41.2	17.6	89.2	30.5	18.8	165.7	59.1	43.2	91.0	76.1	65.6
LOS by Move:	F	D	B	F	C	B-	F	E+	D	F	E-	E
HCM2kAvgQ:	6	38	1	4	7	11	22	6	3	6	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



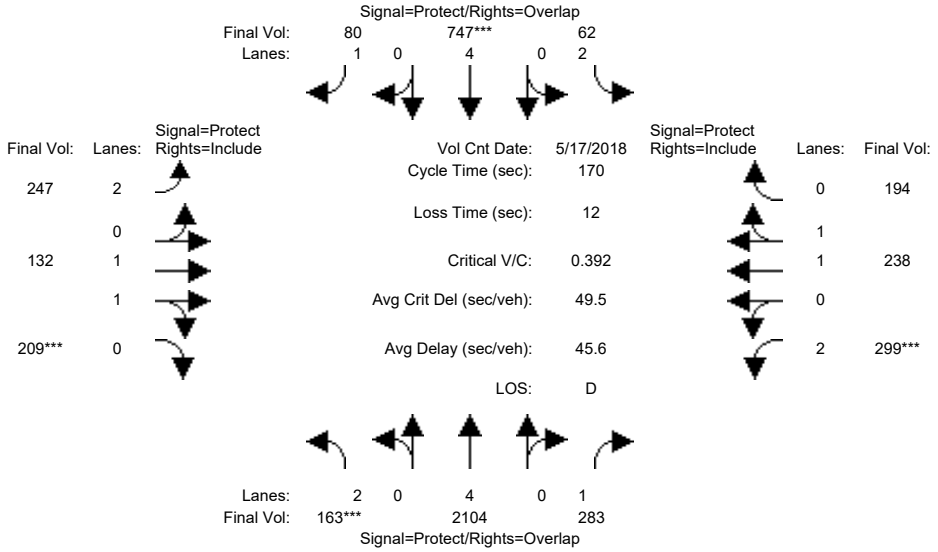
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	13	75	75	20	82	82	23	53	53	16	46	46
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	138	1191	204	194	2903	421	293	1223	195	171	638	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	1191	204	194	2903	421	293	1223	195	171	638	135
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	1191	204	194	2903	421	293	1223	195	171	638	135
User Adj:	1.00	0.84	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	1000	204	194	2380	421	293	1223	195	171	638	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	1000	204	194	2380	421	293	1223	195	171	638	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	1000	204	194	2380	421	293	1223	195	171	638	135
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.83	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4731	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.12	0.06	0.50	0.24	0.09	0.21	0.11	0.05	0.11	0.08
Crit Moves:	****				****			****			****	
Green Time:	13.0	84.5	100.5	22.5	94.0	117.0	23.0	53.0	66.0	16.0	46.0	68.5
Volume/Cap:	0.63	0.39	0.22	0.51	1.01	0.39	0.76	0.76	0.32	0.64	0.46	0.21
Uniform Del:	85.2	34.6	23.1	77.6	47.0	17.7	79.8	61.7	44.5	83.2	60.4	41.1
IncremntDel:	6.0	0.1	0.1	1.2	20.0	0.2	8.6	2.2	0.3	5.1	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.18	1.29	1.09	1.67	2.10	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	91.2	41.0	29.8	85.9	98.4	37.3	88.4	63.9	44.8	88.3	60.6	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.2	41.0	29.8	85.9	98.4	37.3	88.4	63.9	44.8	88.3	60.6	41.3
LOS by Move:	F	D	C	F	F	D+	F	E	D	F	E	D
HCM2kAvgQ:	6	14	8	6	49	21	10	21	8	7	10	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



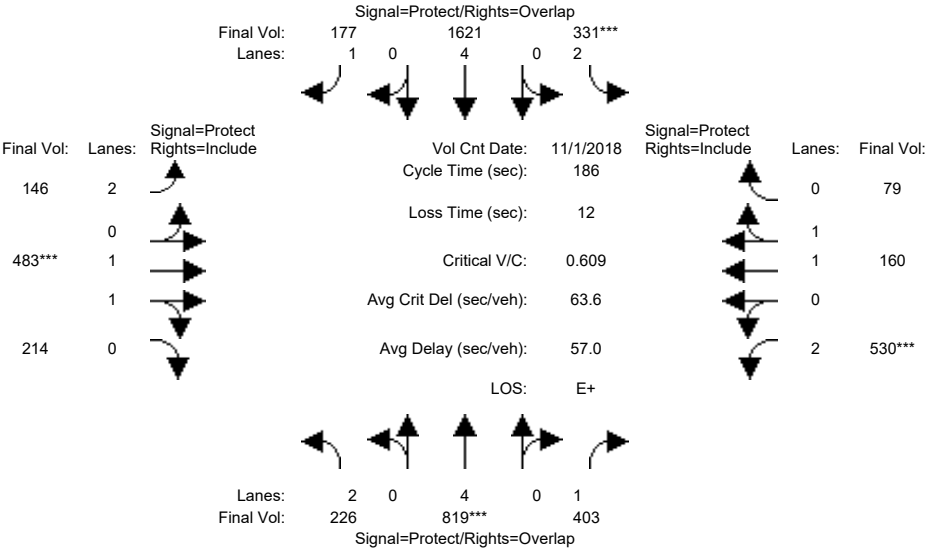
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	71	71	16	69	69	23	38	38	23	38	38
Y+R:	5.5	6.2	6.2	5.7	6.2	6.2	5.0	5.8	5.8	5.6	5.3	5.3
Volume Module: >> Count Date: 17 May 2018 << 7:55 AM - 8:55 AM												
Base Vol:	163	2104	283	62	747	80	247	132	209	299	238	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	2104	283	62	747	80	247	132	209	299	238	194
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	2104	283	62	747	80	247	132	209	299	238	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	2104	283	62	747	80	247	132	209	299	238	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	2104	283	62	747	80	247	132	209	299	238	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	2104	283	62	747	80	247	132	209	299	238	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.00	1.00	2.00	1.08	0.92
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	1900	1750	3150	2037	1661
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.16	0.02	0.10	0.05	0.08	0.07	0.12	0.09	0.12	0.12
Crit Moves:	****				****				****	****		
Green Time:	17.7	70.9	93.6	15.5	68.9	92.1	23.2	37.4	48.1	22.7	38.0	38.0
Volume/Cap:	0.50	0.66	0.29	0.22	0.24	0.08	0.57	0.32	0.42	0.71	0.52	0.52
Uniform Del:	71.9	39.9	20.5	71.6	33.3	18.7	68.8	55.6	49.6	70.5	58.0	58.0
IncremntDel:	1.2	0.5	0.2	0.4	0.0	0.0	1.9	0.2	0.4	5.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.1	40.5	20.6	72.0	33.4	18.7	70.7	55.7	50.0	76.1	58.6	58.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.1	40.5	20.6	72.0	33.4	18.7	70.7	55.7	50.0	76.1	58.6	58.6
LOS by Move:	E	D	C+	E	C-	B-	E	E+	D	E-	E+	E+
HCM2kAvgQ:	5	23	11	2	7	3	7	5	9	9	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



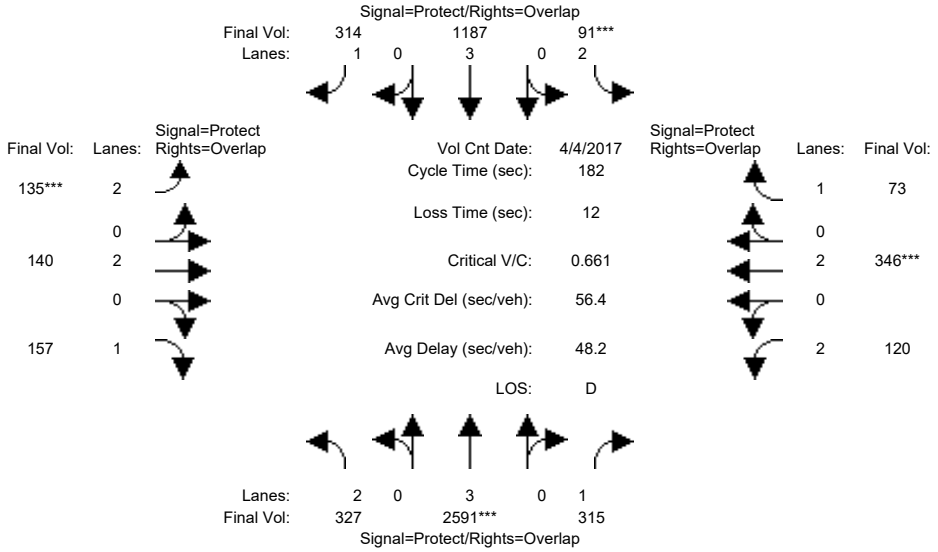
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	19	52	52	25	58	58	39	46	46	37	44	44
Y+R:	7.1	6.2	6.2	7.1	6.2	6.2	7.0	6.1	6.1	7.1	6.2	6.2
Volume Module: >> Count Date: 1 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	226	819	403	331	1621	177	146	483	214	530	160	79
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	226	819	403	331	1621	177	146	483	214	530	160	79
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	226	819	403	331	1621	177	146	483	214	530	160	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	226	819	403	331	1621	177	146	483	214	530	160	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	226	819	403	331	1621	177	146	483	214	530	160	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	226	819	403	331	1621	177	146	483	214	530	160	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.37	0.63	2.00	1.32	0.68
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	2563	1136	3150	2476	1223
Capacity Analysis Module:												
Vol/Sat:	0.07	0.11	0.23	0.11	0.21	0.10	0.05	0.19	0.19	0.17	0.06	0.06
Crit Moves:		****		****				****		****		
Green Time:	19.7	52.0	96.5	27.8	60.1	104.4	44.3	49.8	49.8	44.5	50.0	50.0
Volume/Cap:	0.68	0.39	0.44	0.70	0.66	0.18	0.19	0.70	0.70	0.70	0.24	0.24
Uniform Del:	80.1	54.1	28.0	75.2	54.2	19.9	56.6	61.5	61.5	64.8	53.2	53.2
IncremntDel:	5.5	0.1	0.3	4.8	0.7	0.1	0.1	2.3	2.3	3.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.6	54.2	28.4	80.0	54.9	20.0	56.7	63.8	63.8	67.8	53.3	53.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	54.2	28.4	80.0	54.9	20.0	56.7	63.8	63.8	67.8	53.3	53.3
LOS by Move:	F	D-	C	F	D-	C+	E+	E	E	E	D-	D-
HCM2kAvgQ:	8	10	18	12	21	7	4	18	18	17	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



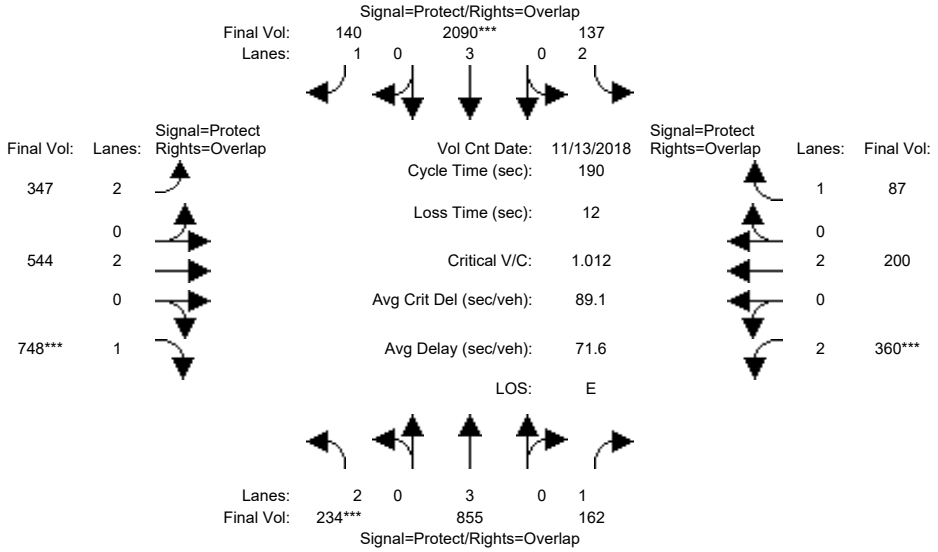
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	327	2978	315	91	1364	314	135	140	157	120	346	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	2978	315	91	1364	314	135	140	157	120	346	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	2978	315	91	1364	314	135	140	157	120	346	73
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	2591	315	91	1187	314	135	140	157	120	346	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	2591	315	91	1187	314	135	140	157	120	346	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	2591	315	91	1187	314	135	140	157	120	346	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.45	0.18	0.03	0.21	0.18	0.04	0.04	0.10	0.04	0.09	0.04
Crit Moves:		****			****			****			****	
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.81	0.88	0.30	0.31	0.43	0.32	0.50	0.21	0.32	0.46	0.53	0.16
Uniform Del:	77.1	39.0	17.9	76.9	31.1	20.9	79.5	64.3	48.9	79.7	68.6	51.2
IncremntDel:	11.4	3.4	0.2	0.6	0.1	0.2	1.5	0.2	0.4	1.3	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	88.5	52.6	25.0	77.5	24.8	13.8	80.9	64.4	49.3	81.0	69.5	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	52.6	25.0	77.5	24.8	13.8	80.9	64.4	49.3	81.0	69.5	51.3
LOS by Move:	F	D-	C	E-	C	B	F	E	D	F	E	D-
HCM2kAvgQ:	13	46	12	3	11	6	4	3	7	4	9	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



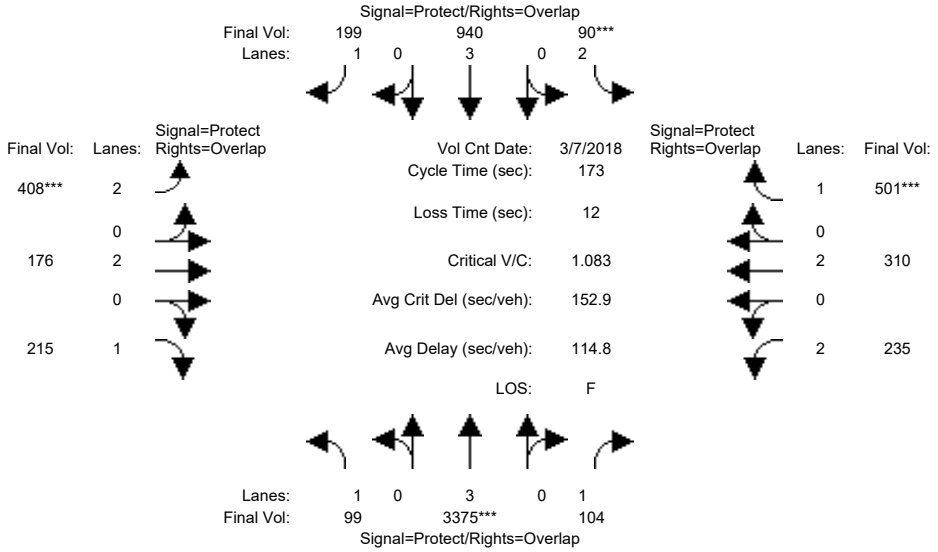
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	234	1276	162	137	2612	140	347	544	748	360	200	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	1276	162	137	2612	140	347	544	748	360	200	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	1276	162	137	2612	140	347	544	748	360	200	87
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	855	162	137	2090	140	347	544	748	360	200	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	855	162	137	2090	140	347	544	748	360	200	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	855	162	137	2090	140	347	544	748	360	200	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.15	0.09	0.04	0.37	0.08	0.11	0.14	0.47	0.11	0.05	0.05
Crit Moves:	****				****				****	****		
Green Time:	22.0	86.0	110.0	15.0	79.0	107.4	28.4	53.0	75.0	24.0	48.6	63.6
Volume/Cap:	0.64	0.33	0.16	0.55	0.88	0.14	0.74	0.51	1.18	0.90	0.21	0.15
Uniform Del:	80.2	33.5	18.6	84.3	51.2	19.5	77.2	57.6	57.5	81.9	55.6	44.3
IncremntDel:	3.9	0.1	0.1	2.6	4.2	0.1	6.0	0.4	98.0	23.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.1	28.0	11.6	86.9	63.1	26.1	83.2	58.1	155.5	105.4	55.7	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.1	28.0	11.6	86.9	63.1	26.1	83.2	58.1	155.5	105.4	55.7	44.4
LOS by Move:	F	C	B+	F	E	C	F	E+	F	F	E+	D
HCM2kAvgQ:	9	8	3	4	38	5	12	13	63	14	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5613: LAWRENCE EXPWY/REED AVE



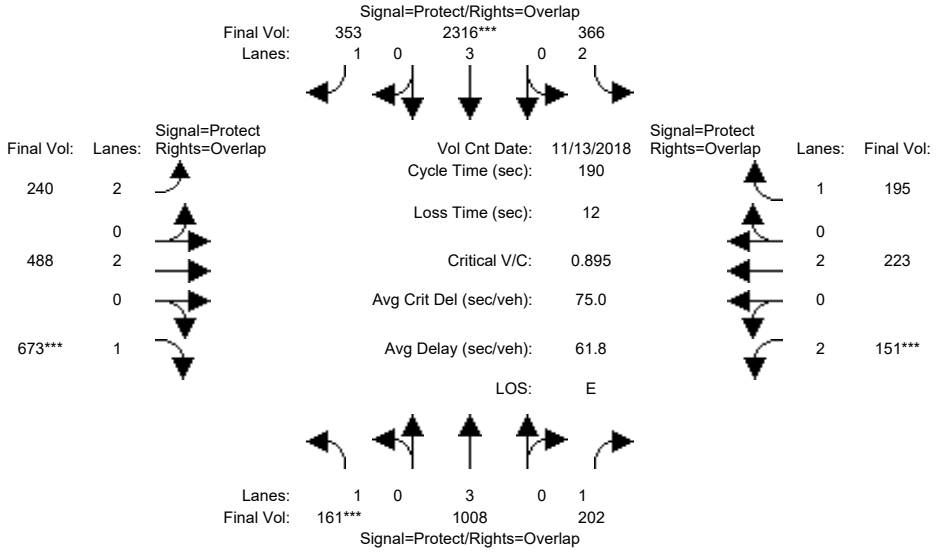
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	99	3879	104	90	1081	199	408	176	215	235	310	501
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	3879	104	90	1081	199	408	176	215	235	310	501
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	3879	104	90	1081	199	408	176	215	235	310	501
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	3375	104	90	940	199	408	176	215	235	310	501
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	3375	104	90	940	199	408	176	215	235	310	501
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	3375	104	90	940	199	408	176	215	235	310	501
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.59	0.06	0.03	0.16	0.11	0.13	0.05	0.12	0.07	0.08	0.29
Crit Moves:		****		****			****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	0.69	1.27	0.11	0.37	0.36	0.19	0.97	0.21	0.40	0.75	0.43	1.08
Uniform Del:	77.4	46.3	17.4	76.0	30.1	16.1	74.6	54.8	47.8	75.7	62.1	63.6
IncremntDel:	13.8	126	0.0	1.0	0.1	0.1	36.0	0.1	0.5	9.4	0.4	66.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	91.2	163	11.4	77.0	24.9	9.6	110.6	55.0	48.3	85.1	62.5	129.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.2	163	11.4	77.0	24.9	9.6	110.6	55.0	48.3	85.1	62.5	129.9
LOS by Move:	F	F	B+	E-	C	A	F	D-	D	F	E	F
HCM2kAvgQ:	5	85	1	3	8	3	15	4	9	7	7	36

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5613: LAWRENCE EXPWY/REED AVE



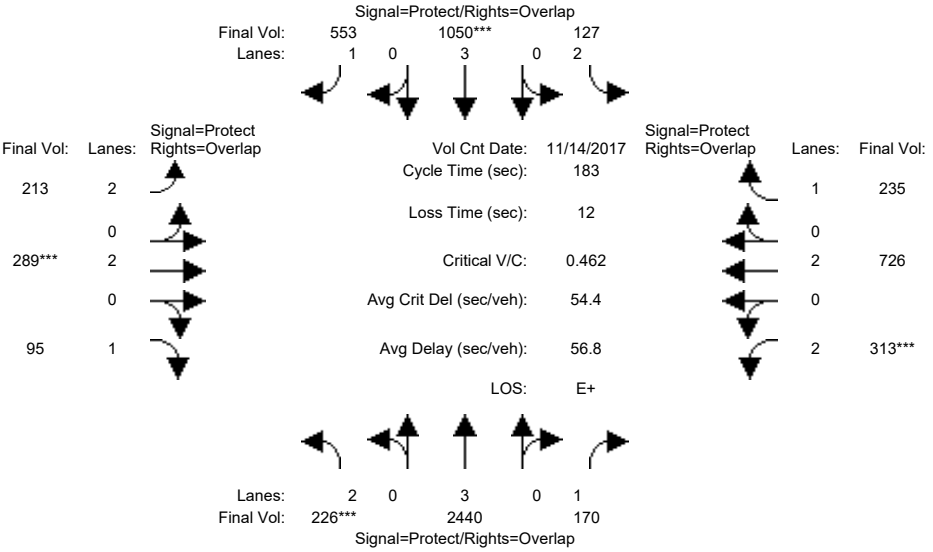
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	161	1245	202	366	3216	353	240	488	673	151	223	195
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	1245	202	366	3216	353	240	488	673	151	223	195
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	1245	202	366	3216	353	240	488	673	151	223	195
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	1008	202	366	2316	353	240	488	673	151	223	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	1008	202	366	2316	353	240	488	673	151	223	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	1008	202	366	2316	353	240	488	673	151	223	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.12	0.12	0.41	0.20	0.08	0.13	0.38	0.05	0.06	0.11
Crit Moves:	****				****				****	****		
Green Time:	17.0	90.0	104.0	27.0	100	118.7	18.7	47.0	64.0	14.0	42.3	69.3
Volume/Cap:	1.03	0.37	0.21	0.82	0.77	0.32	0.78	0.52	1.14	0.65	0.26	0.31
Uniform Del:	86.5	32.0	22.0	79.1	35.9	16.8	83.6	61.7	63.0	85.6	61.0	43.1
IncremntDel:	79.6	0.1	0.1	11.2	1.3	0.2	11.6	0.5	82.7	6.4	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.00	1.27	1.45	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	166.1	25.8	15.2	90.3	47.0	24.4	95.2	62.3	145.7	92.0	61.1	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	166.1	25.8	15.2	90.3	47.0	24.4	95.2	62.3	145.7	92.0	61.1	43.4
LOS by Move:	F	C	B	F	D	C	F	E	F	F	E	D
HCM2kAvgQ:	12	9	4	12	37	14	9	12	54	5	5	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



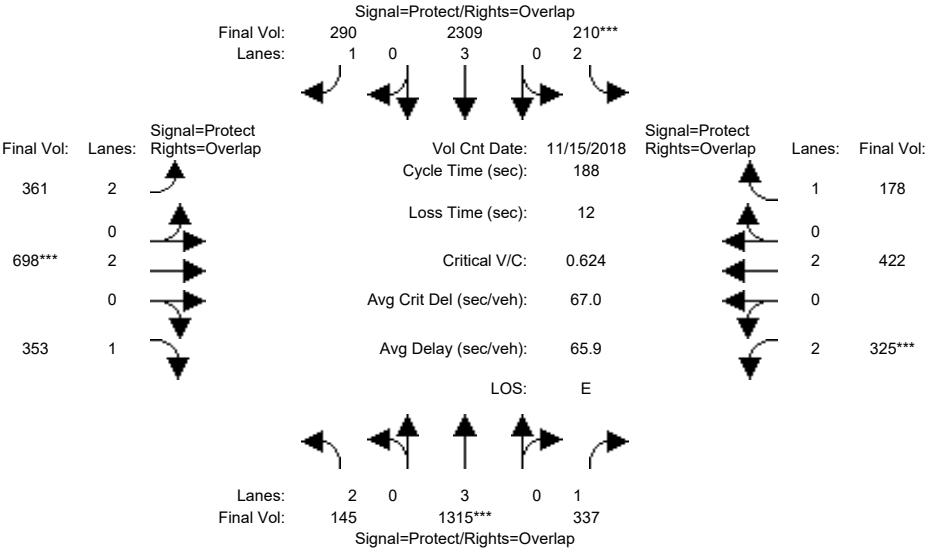
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	85	85	13	80	80	15	40	40	21	46	46
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	226	2805	170	127	1207	553	213	289	95	313	726	235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	226	2805	170	127	1207	553	213	289	95	313	726	235
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	226	2805	170	127	1207	553	213	289	95	313	726	235
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	226	2440	170	127	1050	553	213	289	95	313	726	235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	226	2440	170	127	1050	553	213	289	95	313	726	235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	226	2440	170	127	1050	553	213	289	95	313	726	235
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.10	0.04	0.18	0.32	0.07	0.08	0.05	0.10	0.19	0.13
Crit Moves:	****				****			****			****	
Green Time:	17.6	85.1	105.7	12.5	79.5	94.3	14.8	40.4	58.0	20.6	46.1	58.6
Volume/Cap:	0.75	0.92	0.17	0.59	0.42	0.61	0.84	0.34	0.17	0.88	0.76	0.42
Uniform Del:	80.5	45.8	18.1	82.8	35.9	31.4	82.9	60.1	45.1	80.0	63.3	48.8
IncremntDel:	9.7	5.9	0.1	4.3	0.1	1.3	20.7	0.2	0.1	21.9	3.6	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.20	1.35	1.00	0.86	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	90.2	60.8	24.6	87.1	30.8	24.6	103.6	60.4	45.3	101.9	66.9	49.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.2	60.8	24.6	87.1	30.8	24.6	103.6	60.4	45.3	101.9	66.9	49.4
LOS by Move:	F	E	C	F	C	C	F	E	D	F	E	D
HCM2kAvgQ:	7	42	6	4	11	18	8	6	4	13	20	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



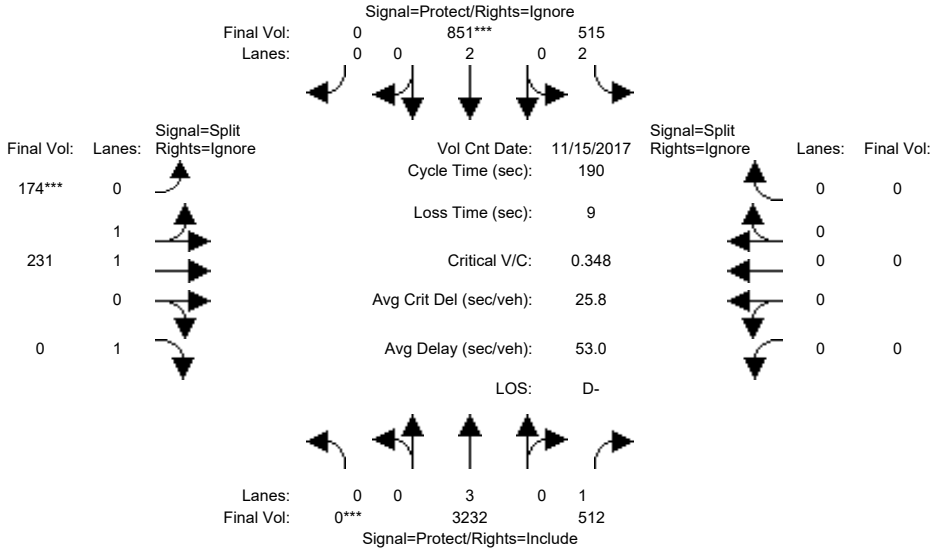
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	85	85	20	91	91	22	42	42	17	37	37
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	145	1708	337	210	2960	290	361	698	353	325	422	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	1708	337	210	2960	290	361	698	353	325	422	178
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	1708	337	210	2960	290	361	698	353	325	422	178
User Adj:	1.00	0.77	1.00	1.00	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	1315	337	210	2309	290	361	698	353	325	422	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1315	337	210	2309	290	361	698	353	325	422	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	1315	337	210	2309	290	361	698	353	325	422	178
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.19	0.07	0.41	0.17	0.11	0.18	0.20	0.10	0.11	0.10
Crit Moves:		****		****				****		****		
Green Time:	14.0	85.0	110.5	20.0	91.0	117.5	26.5	45.5	59.5	25.5	44.5	64.5
Volume/Cap:	0.62	0.51	0.33	0.63	0.84	0.27	0.81	0.76	0.64	0.76	0.47	0.30
Uniform Del:	84.4	36.7	19.8	80.4	42.1	15.9	78.4	66.2	55.0	78.3	61.6	45.1
IncremntDel:	4.9	0.2	0.2	3.7	2.4	0.1	11.0	3.7	2.5	7.7	0.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.05	1.55	1.95	1.08	1.63	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.9	57.0	38.8	90.5	70.8	33.6	89.4	69.9	57.5	86.0	62.0	45.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.9	57.0	38.8	90.5	70.8	33.6	89.4	69.9	57.5	86.0	62.0	45.4
LOS by Move:	F	E+	D+	F	E	C-	F	E	E+	F	E	D
HCM2kAvgQ:	5	22	17	7	42	14	12	18	18	12	10	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



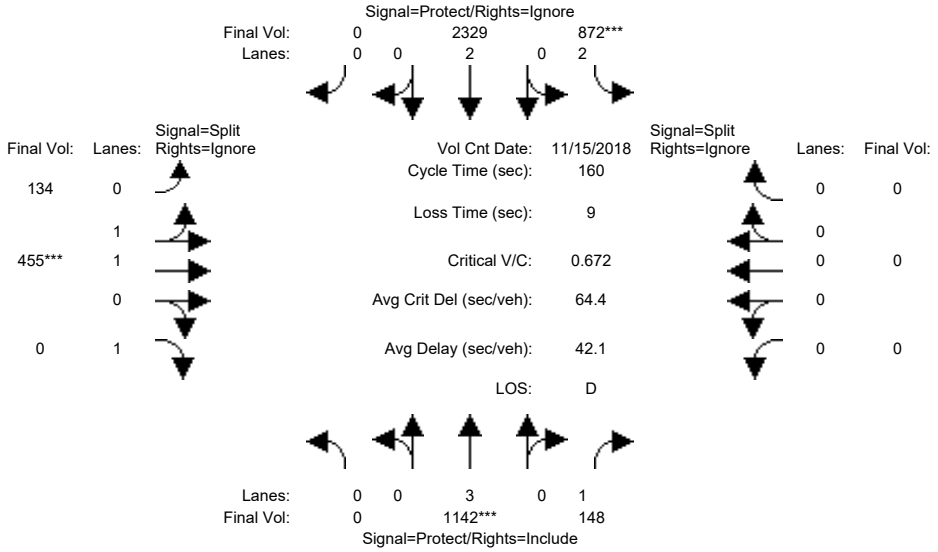
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	114	114	29	148	0	29	29	29	0	0	0
Y+R:	0.0	6.2	6.2	5.5	6.2	6.2	5.7	5.7	5.7	0.0	0.0	0.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	3232	512	515	851	0	174	231	239	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3232	512	515	851	0	174	231	239	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3232	512	515	851	0	174	231	239	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	3232	512	515	851	0	174	231	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3232	512	515	851	0	174	231	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	3232	512	515	851	0	174	231	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.96	1.01	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	0.88	1.12	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	1617	2147	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.57	0.29	0.16	0.22	0.00	0.11	0.11	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	0.0	115	114.8	29.5	149	0.0	29.3	29.3	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.94	0.48	1.05	0.29	0.00	0.70	0.70	0.00	0.00	0.00	0.00
Uniform Del:	0.0	34.4	21.0	80.2	5.8	0.0	76.2	76.2	0.0	0.0	0.0	0.0
IncremntDel:	0.0	5.9	0.4	55.3	0.1	0.0	3.7	3.7	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.40	1.40	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	54.2	29.9	135.5	0.1	0.0	79.9	79.9	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	54.2	29.9	135.5	0.1	0.0	79.9	79.9	0.0	0.0	0.0	0.0
LOS by Move:	A	D-	C	F	A	A	E-	E-	A	A	A	A
HCM2kAvgQ:	0	63	23	24	0	0	11	11	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



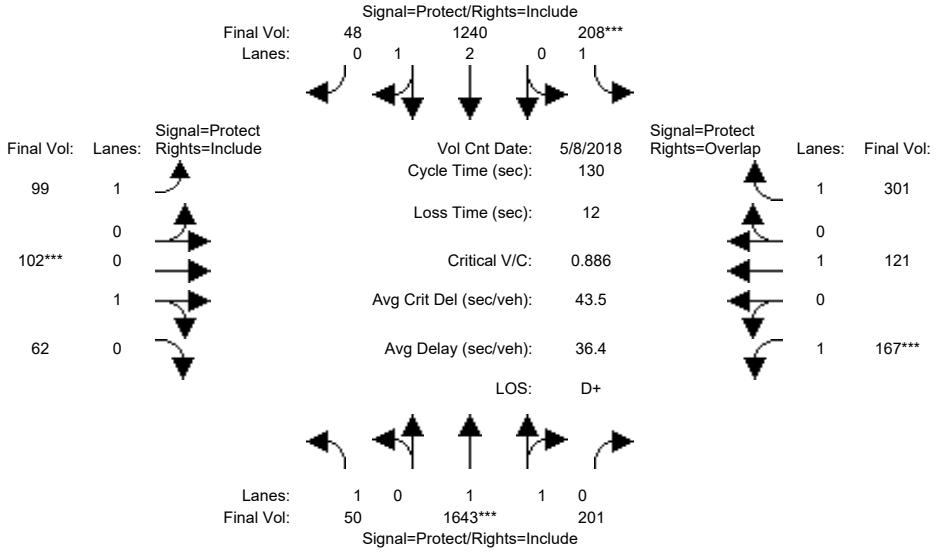
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	67	67	44	110	0	49	49	49	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	1142	148	872	2329	0	134	455	956	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1142	148	872	2329	0	134	455	956	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1142	148	872	2329	0	134	455	956	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1142	148	872	2329	0	134	455	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1142	148	872	2329	0	134	455	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1142	148	872	2329	0	134	455	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.95	0.98	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	0.47	1.53	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	842	2858	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.08	0.28	0.61	0.00	0.16	0.16	0.00	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	0.0	63.4	63.4	41.7	105	0.0	46.4	46.4	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.51	0.21	1.06	0.93	0.00	0.55	0.55	0.00	0.00	0.00	0.00
Uniform Del:	0.0	38.5	33.6	62.5	25.7	0.0	50.7	50.7	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.2	49.6	7.2	0.0	0.6	0.6	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.90	0.90	1.00	0.42	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	34.8	30.4	112.1	18.0	0.0	51.3	51.3	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	34.8	30.4	112.1	18.0	0.0	51.3	51.3	0.0	0.0	0.0	0.0
LOS by Move:	A	C-	C	F	B	A	D-	D-	A	A	A	A
HCM2kAvgQ:	0	12	4	35	45	0	13	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #41: Fair Oaks Ave & Duane Ave



Street Name: Fair Oaks Ave Duane Ave

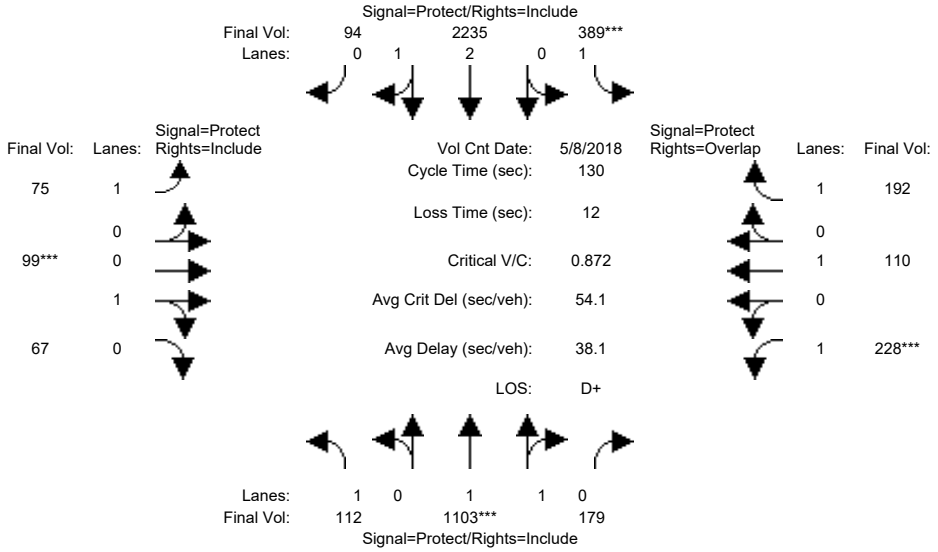
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	50	1643	201	208	1240	48	99	102	62	167	121	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	1643	201	208	1240	48	99	102	62	167	121	301
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1643	201	208	1240	48	99	102	62	167	121	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1643	201	208	1240	48	99	102	62	167	121	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1643	201	208	1240	48	99	102	62	167	121	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1643	201	208	1240	48	99	102	62	167	121	301
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.78	0.22	1.00	2.88	0.12	1.00	0.62	0.38	1.00	1.00	1.00
Final Sat.:	1750	3296	403	1750	5391	209	1750	1120	680	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.50	0.50	0.12	0.23	0.23	0.06	0.09	0.09	0.10	0.06	0.17
Crit Moves:		****		****				****		****		
Green Time:	17.2	73.2	73.2	17.4	73.4	73.4	11.6	13.4	13.4	14.0	15.8	33.2
Volume/Cap:	0.22	0.89	0.89	0.89	0.41	0.41	0.63	0.89	0.89	0.89	0.52	0.67
Uniform Del:	50.4	24.8	24.8	55.3	16.0	16.0	57.1	57.6	57.6	57.2	53.6	43.5
IncremntDel:	0.5	5.0	5.0	30.4	0.1	0.1	8.2	36.1	36.1	35.7	2.2	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.9	29.7	29.7	85.7	16.1	16.1	65.4	93.7	93.7	92.9	55.8	47.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	29.7	29.7	85.7	16.1	16.1	65.4	93.7	93.7	92.9	55.8	47.5
LOS by Move:	D	C	C	F	B	B	E	F	F	F	E+	D
HCM2kAvgQ:	2	35	35	10	9	9	5	10	10	10	5	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #41: Fair Oaks Ave & Duane Ave



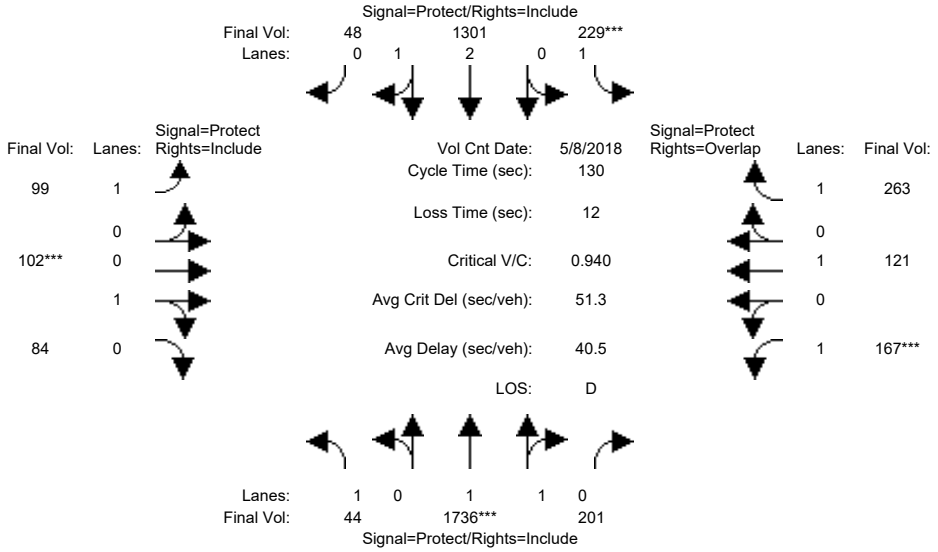
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	112	1103	179	389	2235	94	75	99	67	228	110	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	112	1103	179	389	2235	94	75	99	67	228	110	192
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	112	1103	179	389	2235	94	75	99	67	228	110	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	112	1103	179	389	2235	94	75	99	67	228	110	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1103	179	389	2235	94	75	99	67	228	110	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	1103	179	389	2235	94	75	99	67	228	110	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.71	0.29	1.00	2.87	0.13	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	1750	3183	517	1750	5374	226	1750	1073	727	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.35	0.22	0.42	0.42	0.04	0.09	0.09	0.13	0.06	0.11
Crit Moves:		****		****				****		****		
Green Time:	11.3	51.7	51.7	33.1	73.5	73.5	13.7	13.8	13.8	19.4	19.5	52.7
Volume/Cap:	0.74	0.87	0.87	0.87	0.74	0.74	0.41	0.87	0.87	0.87	0.39	0.27
Uniform Del:	57.9	36.1	36.1	46.4	21.0	21.0	54.4	57.3	57.3	54.1	49.8	25.8
IncremntDel:	17.0	6.0	6.0	16.9	0.9	0.9	1.5	32.6	32.6	25.7	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.9	42.1	42.1	63.3	21.9	21.9	55.9	89.9	89.9	79.8	50.7	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.9	42.1	42.1	63.3	21.9	21.9	55.9	89.9	89.9	79.8	50.7	26.0
LOS by Move:	E	D	D	E	C+	C+	E+	F	F	E-	D	C
HCM2kAvgQ:	5	26	26	17	23	23	3	10	10	12	4	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #41: Fair Oaks Ave & Duane Ave



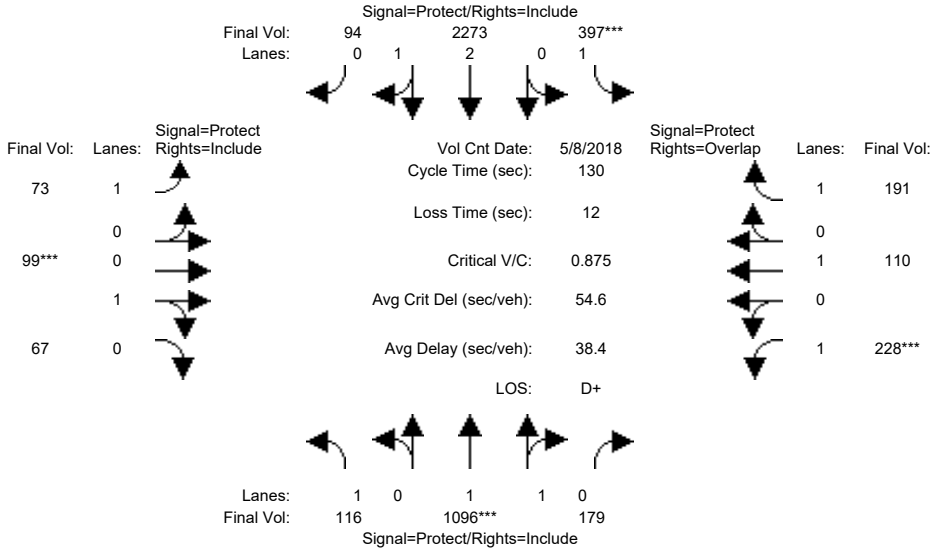
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	44	1736	201	229	1301	48	99	102	84	167	121	263
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	1736	201	229	1301	48	99	102	84	167	121	263
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	1736	201	229	1301	48	99	102	84	167	121	263
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	1736	201	229	1301	48	99	102	84	167	121	263
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	1736	201	229	1301	48	99	102	84	167	121	263
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	1736	201	229	1301	48	99	102	84	167	121	263
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.79	0.21	1.00	2.89	0.11	1.00	0.55	0.45	1.00	1.00	1.00
Final Sat.:	1750	3316	384	1750	5400	199	1750	987	813	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.52	0.52	0.13	0.24	0.24	0.06	0.10	0.10	0.10	0.06	0.15
Crit Moves:		****		****				****		****		
Green Time:	16.5	72.4	72.4	18.1	74.0	74.0	11.6	14.3	14.3	13.2	15.8	33.9
Volume/Cap:	0.20	0.94	0.94	0.94	0.42	0.42	0.63	0.94	0.94	0.94	0.52	0.58
Uniform Del:	50.8	26.8	26.8	55.4	15.9	15.9	57.1	57.4	57.4	58.0	53.5	41.8
IncremntDel:	0.4	9.2	9.2	41.3	0.1	0.1	8.1	47.0	47.0	50.2	2.2	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.2	36.0	36.0	96.7	16.0	16.0	65.2	104	104.4	108.2	55.7	43.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	36.0	36.0	96.7	16.0	16.0	65.2	104	104.4	108.2	55.7	43.6
LOS by Move:	D-	D+	D+	F	B	B	E	F	F	F	E+	D
HCM2kAvgQ:	2	40	40	11	10	10	5	11	11	11	5	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #41: Fair Oaks Ave & Duane Ave



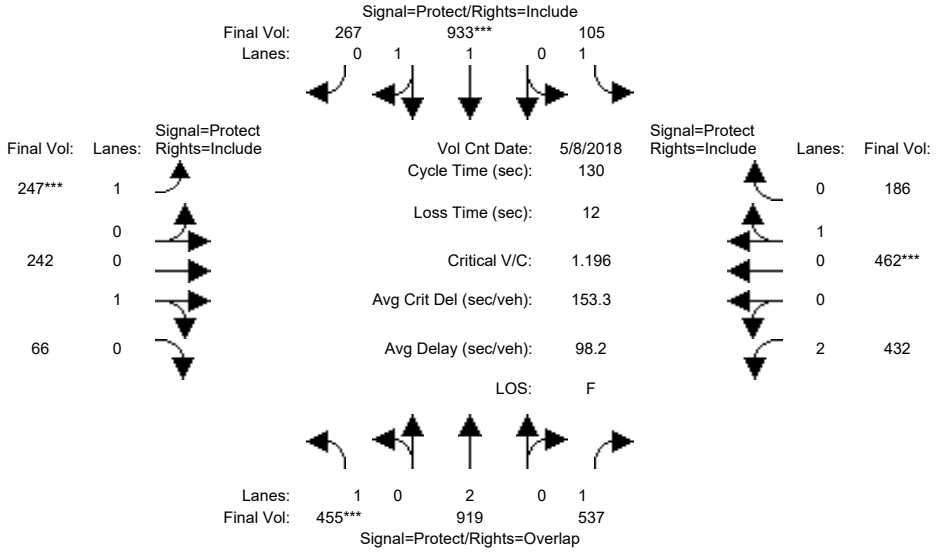
Street Name:	Fair Oaks Ave						Duane Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	116	1096	179	397	2273	94	73	99	67	228	110	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	1096	179	397	2273	94	73	99	67	228	110	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	1096	179	397	2273	94	73	99	67	228	110	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	1096	179	397	2273	94	73	99	67	228	110	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	1096	179	397	2273	94	73	99	67	228	110	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	1096	179	397	2273	94	73	99	67	228	110	191
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	1.71	0.29	1.00	2.88	0.12	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	1750	3180	519	1750	5377	222	1750	1073	727	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.34	0.34	0.23	0.42	0.42	0.04	0.09	0.09	0.13	0.06	0.11
Crit Moves:		****		****				****		****		
Green Time:	11.5	51.2	51.2	33.7	73.4	73.4	13.6	13.7	13.7	19.4	19.5	53.2
Volume/Cap:	0.75	0.87	0.87	0.87	0.75	0.75	0.40	0.87	0.87	0.87	0.39	0.27
Uniform Del:	57.8	36.4	36.4	46.1	21.3	21.3	54.4	57.3	57.3	54.1	49.9	25.5
IncremntDel:	18.1	6.2	6.2	17.0	1.0	1.0	1.4	33.3	33.3	26.3	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.9	42.6	42.6	63.1	22.3	22.3	55.8	90.6	90.6	80.4	50.8	25.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.9	42.6	42.6	63.1	22.3	22.3	55.8	90.6	90.6	80.4	50.8	25.7
LOS by Move:	E-	D	D	E	C+	C+	E+	F	F	F	D	C
HCM2kAvgQ:	5	26	26	17	24	24	3	10	10	13	4	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #42: Fair Oaks Ave & Arques Ave



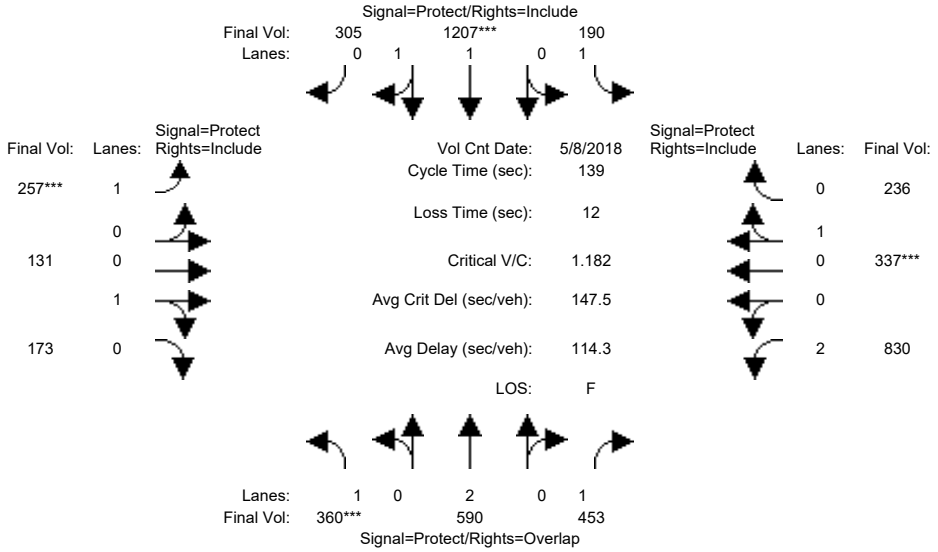
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	455	919	537	105	933	267	247	242	66	432	462	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	455	919	537	105	933	267	247	242	66	432	462	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	455	919	537	105	933	267	247	242	66	432	462	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	455	919	537	105	933	267	247	242	66	432	462	186
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	455	919	537	105	933	267	247	242	66	432	462	186
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	455	919	537	105	933	267	247	242	66	432	462	186
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.54	0.46	1.00	0.79	0.21	2.00	0.71	0.29
Final Sat.:	1750	3800	1750	1750	2876	823	1750	1414	386	3150	1283	517
Capacity Analysis Module:												
Vol/Sat:	0.26	0.24	0.31	0.06	0.32	0.32	0.14	0.17	0.17	0.14	0.36	0.36
Crit Moves:	****				****		****				****	
Green Time:	28.3	50.9	75.1	12.6	35.3	35.3	15.3	30.2	30.2	24.2	39.1	39.1
Volume/Cap:	1.20	0.62	0.53	0.62	1.20	1.20	1.20	0.74	0.74	0.74	1.20	1.20
Uniform Del:	50.9	31.7	16.7	56.4	47.4	47.4	57.3	46.2	46.2	49.9	45.4	45.4
IncremntDel:	111.1	0.8	0.5	6.7	98.0	98.0	125.5	6.7	6.7	4.8	105	105.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	162.0	32.5	17.2	63.1	145	145.4	182.9	52.9	52.9	54.7	151	150.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	162.0	32.5	17.2	63.1	145	145.4	182.9	52.9	52.9	54.7	151	150.6
LOS by Move:	F	C-	B	E	F	F	F	D-	D-	D-	F	F
HCM2kAvgQ:	30	14	13	5	39	39	19	13	13	10	41	41

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #42: Fair Oaks Ave & Arques Ave



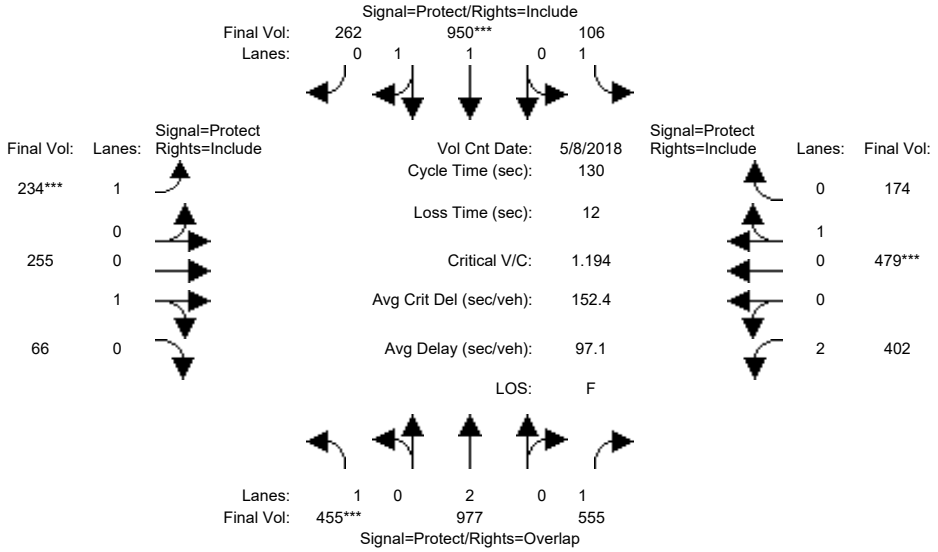
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	360	590	453	190	1207	305	257	131	173	830	337	236
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	360	590	453	190	1207	305	257	131	173	830	337	236
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	360	590	453	190	1207	305	257	131	173	830	337	236
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	360	590	453	190	1207	305	257	131	173	830	337	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	360	590	453	190	1207	305	257	131	173	830	337	236
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	360	590	453	190	1207	305	257	131	173	830	337	236
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.59	0.41	1.00	0.43	0.57	2.00	0.59	0.41
Final Sat.:	1750	3800	1750	1750	2953	746	1750	776	1024	3150	1059	741
Capacity Analysis Module:												
Vol/Sat:	0.21	0.16	0.26	0.11	0.41	0.41	0.15	0.17	0.17	0.26	0.32	0.32
Crit Moves:	****				****		****				****	
Green Time:	24.2	42.5	75.9	29.7	48.1	48.1	17.3	21.4	21.4	33.3	37.4	37.4
Volume/Cap:	1.18	0.51	0.47	0.51	1.18	1.18	1.18	1.10	1.10	1.10	1.18	1.18
Uniform Del:	57.4	39.6	19.3	48.2	45.5	45.5	60.9	58.8	58.8	52.8	50.8	50.8
IncremntDel:	110.2	0.4	0.4	1.1	90.0	90.0	118.8	83.0	83.0	62.9	101	101.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	167.6	40.0	19.7	49.3	136	135.5	179.6	142	141.8	115.8	152	152.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	167.6	40.0	19.7	49.3	136	135.5	179.6	142	141.8	115.8	152	152.0
LOS by Move:	F	D	B-	D	F	F	F	F	F	F	F	F
HCM2kAvgQ:	25	10	12	8	50	50	20	21	21	28	37	37

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #42: Fair Oaks Ave & Arques Ave



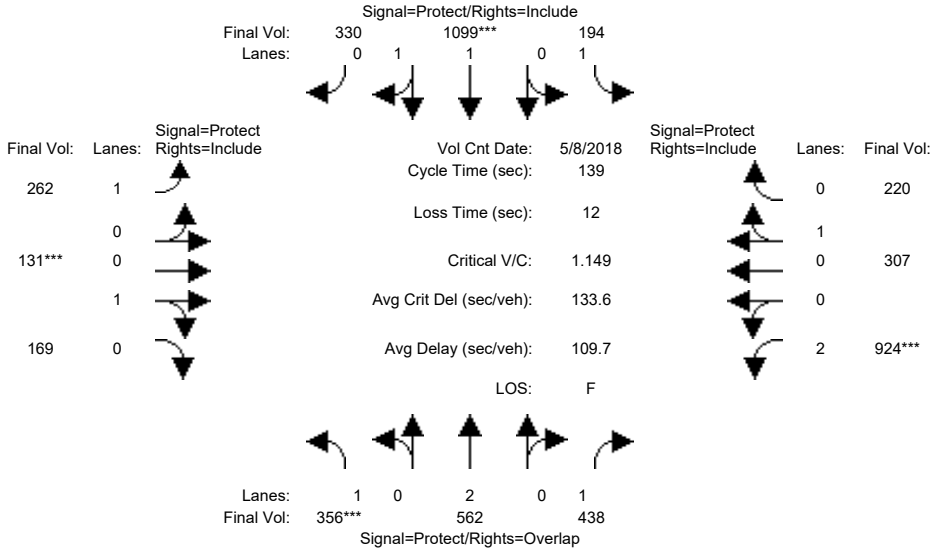
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	455	977	555	106	950	262	234	255	66	402	479	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	455	977	555	106	950	262	234	255	66	402	479	174
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	455	977	555	106	950	262	234	255	66	402	479	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	455	977	555	106	950	262	234	255	66	402	479	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	455	977	555	106	950	262	234	255	66	402	479	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	455	977	555	106	950	262	234	255	66	402	479	174
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.56	0.44	1.00	0.79	0.21	2.00	0.73	0.27
Final Sat.:	1750	3800	1750	1750	2900	800	1750	1430	370	3150	1320	480
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.32	0.06	0.33	0.33	0.13	0.18	0.18	0.13	0.36	0.36
Crit Moves:	****				****		****				****	
Green Time:	28.3	51.8	74.3	12.2	35.7	35.7	14.6	31.5	31.5	22.5	39.5	39.5
Volume/Cap:	1.19	0.65	0.55	0.65	1.19	1.19	1.19	0.74	0.74	0.74	1.19	1.19
Uniform Del:	50.9	31.7	17.5	56.8	47.2	47.2	57.7	45.4	45.4	50.9	45.3	45.3
IncremntDel:	110.5	1.0	0.7	8.6	97.3	97.3	126.5	6.4	6.4	5.2	104	104.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	161.3	32.7	18.2	65.4	144	144.4	184.2	51.9	51.9	56.1	150	149.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	161.3	32.7	18.2	65.4	144	144.4	184.2	51.9	51.9	56.1	150	149.7
LOS by Move:	F	C-	B-	E	F	F	F	D-	D-	E+	F	F
HCM2kAvgQ:	30	15	14	6	40	40	18	14	14	9	42	42

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #42: Fair Oaks Ave & Arques Ave



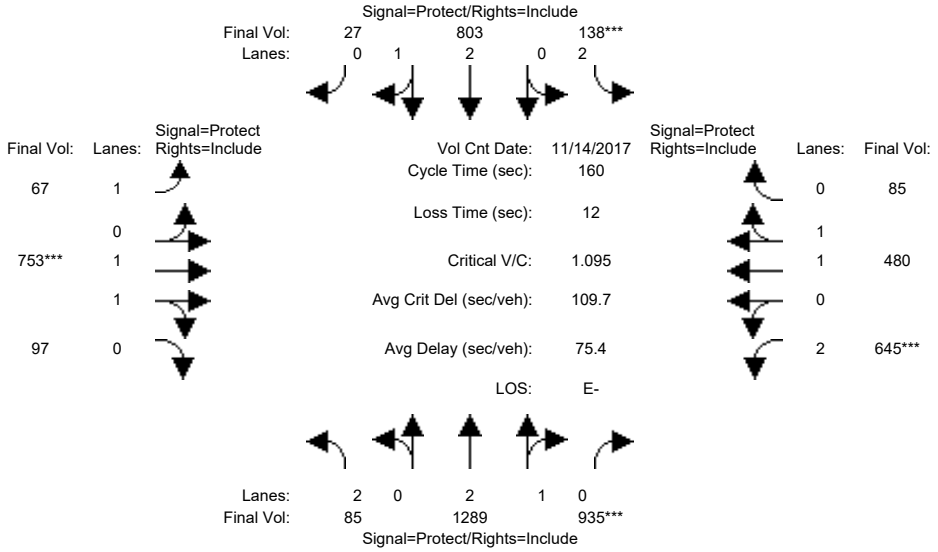
Street Name:	Fair Oaks Ave						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	356	562	438	194	1099	330	262	131	169	924	307	220
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	356	562	438	194	1099	330	262	131	169	924	307	220
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	562	438	194	1099	330	262	131	169	924	307	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	356	562	438	194	1099	330	262	131	169	924	307	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	356	562	438	194	1099	330	262	131	169	924	307	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	356	562	438	194	1099	330	262	131	169	924	307	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.95	0.95	0.83	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	1.53	0.47	1.00	0.44	0.56	2.00	0.58	0.42
Final Sat.:	1750	3800	1750	1750	2845	854	1750	786	1014	3150	1049	751
Capacity Analysis Module:												
Vol/Sat:	0.20	0.15	0.25	0.11	0.39	0.39	0.15	0.17	0.17	0.29	0.29	0.29
Crit Moves:	****				****			****			****	
Green Time:	24.6	40.8	76.3	30.6	46.7	46.7	18.8	20.2	20.2	35.5	36.8	36.8
Volume/Cap:	1.15	0.50	0.46	0.50	1.15	1.15	1.11	1.15	1.15	1.15	1.11	1.11
Uniform Del:	57.2	40.7	18.9	47.6	46.1	46.1	60.1	59.4	59.4	51.8	51.1	51.1
IncremntDel:	97.7	0.4	0.3	1.1	76.8	76.8	89.5	102	102.0	81.3	73.0	73.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	154.9	41.1	19.2	48.6	123	122.9	149.6	161	161.4	133.0	124	124.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	154.9	41.1	19.2	48.6	123	122.9	149.6	161	161.4	133.0	124	124.1
LOS by Move:	F	D	B-	D	F	F	F	F	F	F	F	F
HCM2kAvgQ:	24	10	12	8	46	46	19	22	22	33	31	31

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #43: Wolfe Rd & Arques Ave



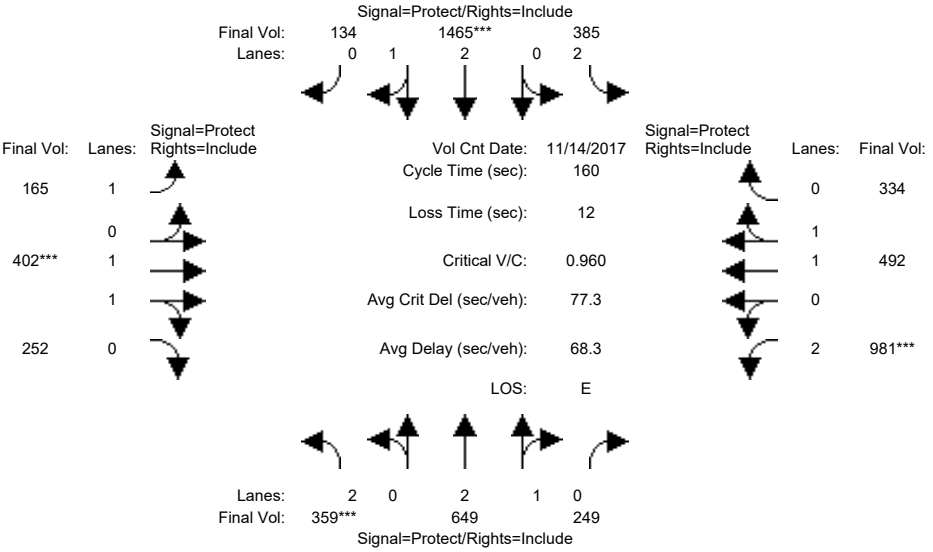
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	85	1289	935	138	803	27	67	753	97	645	480	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	85	1289	935	138	803	27	67	753	97	645	480	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	1289	935	138	803	27	67	753	97	645	480	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	1289	935	138	803	27	67	753	97	645	480	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	1289	935	138	803	27	67	753	97	645	480	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	1289	935	138	803	27	67	753	97	645	480	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.90	0.10	1.00	1.77	0.23	2.00	1.69	0.31
Final Sat.:	3150	3800	1750	3150	5418	182	1750	3277	422	3150	3143	557
Capacity Analysis Module:												
Vol/Sat:	0.03	0.34	0.53	0.04	0.15	0.15	0.04	0.23	0.23	0.20	0.15	0.15
Crit Moves:			****	****				****		****		
Green Time:	19.3	77.8	77.8	7.0	65.4	65.4	14.1	33.4	33.4	29.8	49.2	49.2
Volume/Cap:	0.22	0.70	1.10	1.00	0.36	0.36	0.44	1.10	1.10	1.10	0.50	0.50
Uniform Del:	63.6	32.0	41.1	76.5	32.8	32.8	69.2	63.3	63.3	65.1	45.3	45.3
IncremntDel:	0.3	0.7	53.0	77.0	0.1	0.1	2.0	63.0	63.0	67.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	63.9	32.7	94.1	153.5	32.9	32.9	71.2	126	126.3	132.4	45.7	45.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.9	32.7	94.1	153.5	32.9	32.9	71.2	126	126.3	132.4	45.7	45.7
LOS by Move:	E	C-	F	F	C-	C-	E	F	F	F	D	D
HCM2kAvgQ:	2	24	62	5	9	9	3	27	27	25	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #43: Wolfe Rd & Arques Ave



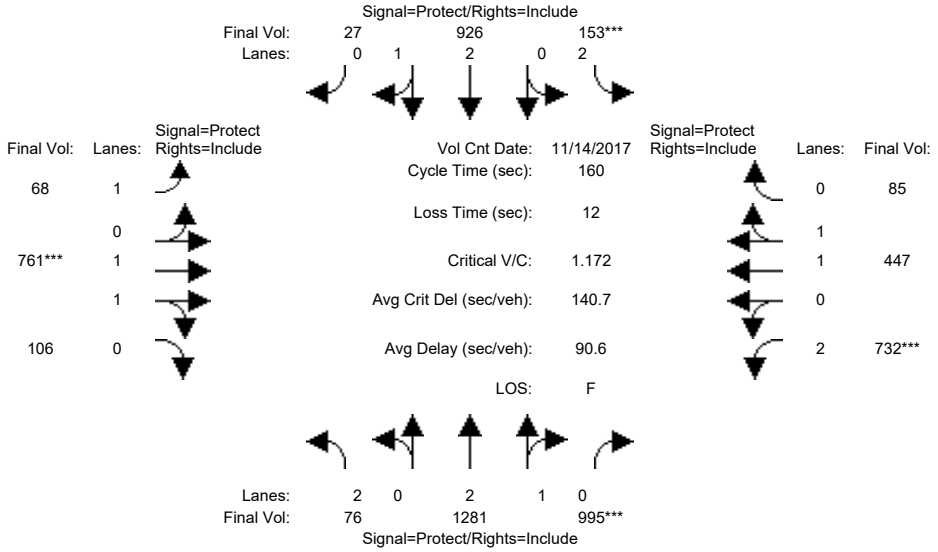
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	359	649	249	385	1465	134	165	402	252	981	492	334
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	359	649	249	385	1465	134	165	402	252	981	492	334
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	359	649	249	385	1465	134	165	402	252	981	492	334
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	359	649	249	385	1465	134	165	402	252	981	492	334
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	649	249	385	1465	134	165	402	252	981	492	334
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	359	649	249	385	1465	134	165	402	252	981	492	334
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	0.99	0.95	0.92	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	2.14	0.86	2.00	2.74	0.26	1.00	1.21	0.79	2.00	1.17	0.83
Final Sat.:	3150	4045	1552	3150	5130	469	1750	2273	1425	3150	2203	1495
Capacity Analysis Module:												
Vol/Sat:	0.11	0.16	0.16	0.12	0.29	0.29	0.09	0.18	0.18	0.31	0.22	0.22
Crit Moves:	****				****			****			****	
Green Time:	19.0	37.8	37.8	28.8	47.6	47.6	24.2	29.5	29.5	51.9	57.2	57.2
Volume/Cap:	0.96	0.68	0.68	0.68	0.96	0.96	0.62	0.96	0.96	0.96	0.62	0.62
Uniform Del:	70.1	55.6	55.6	61.3	55.3	55.3	63.7	64.7	64.7	53.0	42.5	42.5
IncremntDel:	36.0	1.4	1.4	3.3	13.7	13.7	4.6	24.9	24.9	19.1	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	106.1	57.0	57.0	64.6	69.0	69.0	68.3	89.5	89.5	72.1	43.4	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.1	57.0	57.0	64.6	69.0	69.0	68.3	89.5	89.5	72.1	43.4	43.4
LOS by Move:	F	E+	E+	E	E	E	E	F	F	E	D	D
HCM2kAvgQ:	12	13	13	10	29	29	8	16	16	31	17	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #43: Wolfe Rd & Arques Ave



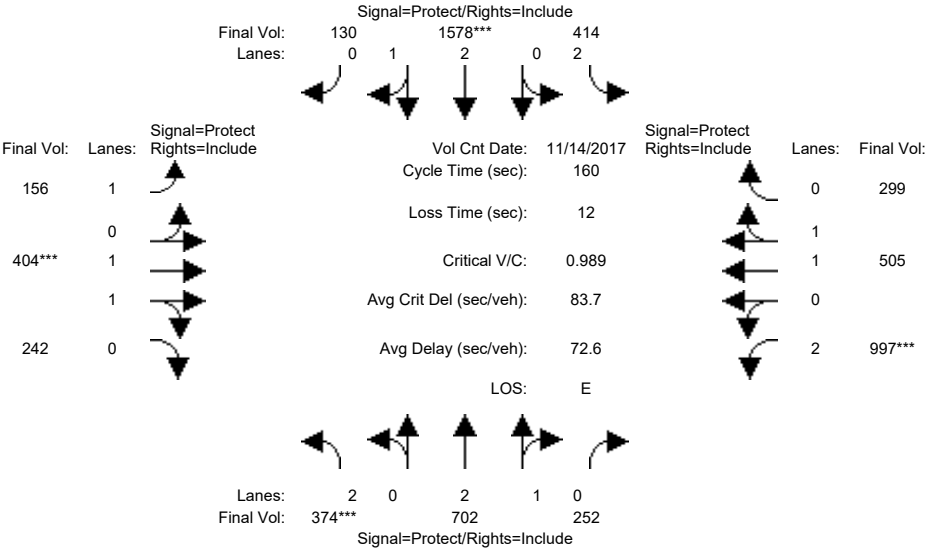
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	76	1281	995	153	926	27	68	761	106	732	447	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	1281	995	153	926	27	68	761	106	732	447	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	1281	995	153	926	27	68	761	106	732	447	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	1281	995	153	926	27	68	761	106	732	447	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	1281	995	153	926	27	68	761	106	732	447	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	1281	995	153	926	27	68	761	106	732	447	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.92	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.91	0.09	1.00	1.75	0.25	2.00	1.67	0.33
Final Sat.:	3150	3800	1750	3150	5441	159	1750	3247	452	3150	3108	591
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.57	0.05	0.17	0.17	0.04	0.23	0.23	0.23	0.14	0.14
Crit Moves:			****	****				****		****		
Green Time:	17.3	77.4	77.4	7.0	67.2	67.2	14.8	31.9	31.9	31.6	48.7	48.7
Volume/Cap:	0.22	0.70	1.17	1.11	0.41	0.41	0.42	1.17	1.17	1.17	0.47	0.47
Uniform Del:	65.2	32.1	41.3	76.5	32.5	32.5	68.5	64.0	64.0	64.2	45.2	45.2
IncremntDel:	0.3	0.7	84.5	109.3	0.1	0.1	1.8	92.6	92.6	94.8	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.6	32.8	125.8	185.8	32.6	32.6	70.3	157	156.6	159.0	45.5	45.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.6	32.8	125.8	185.8	32.6	32.6	70.3	157	156.6	159.0	45.5	45.5
LOS by Move:	E	C-	F	F	C-	C-	E	F	F	F	D	D
HCM2kAvgQ:	2	24	72	6	11	11	3	30	30	31	10	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #43: Wolfe Rd & Arques Ave



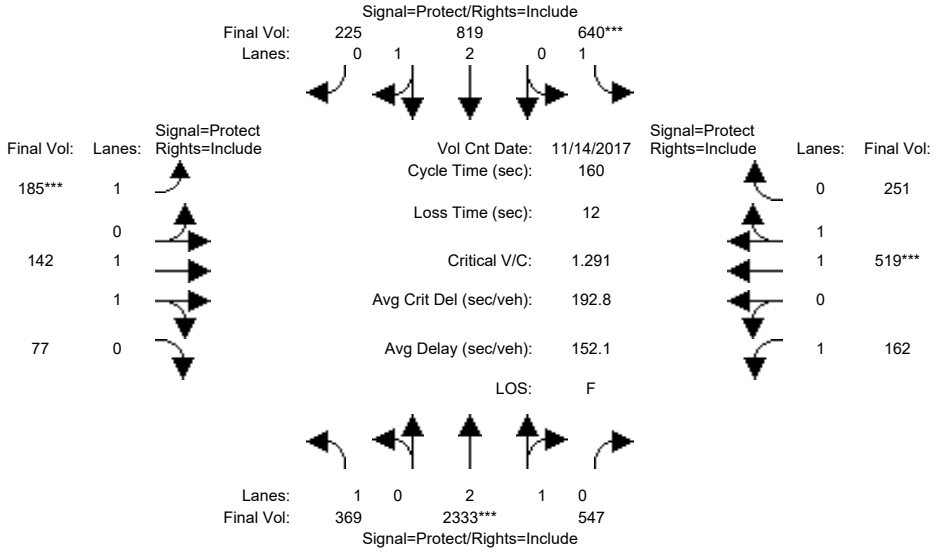
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	374	702	252	414	1578	130	156	404	242	997	505	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	702	252	414	1578	130	156	404	242	997	505	299
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	702	252	414	1578	130	156	404	242	997	505	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	702	252	414	1578	130	156	404	242	997	505	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	702	252	414	1578	130	156	404	242	997	505	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	702	252	414	1578	130	156	404	242	997	505	299
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	0.99	0.95	0.92	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	2.18	0.82	2.00	2.76	0.24	1.00	1.23	0.77	2.00	1.24	0.76
Final Sat.:	3150	4119	1479	3150	5173	426	1750	2313	1385	3150	2323	1375
Capacity Analysis Module:												
Vol/Sat:	0.12	0.17	0.17	0.13	0.31	0.31	0.09	0.17	0.17	0.32	0.22	0.22
Crit Moves:	****				****			****			****	
Green Time:	19.2	38.7	38.7	29.8	49.3	49.3	23.1	28.3	28.3	51.2	56.3	56.3
Volume/Cap:	0.99	0.70	0.70	0.70	0.99	0.99	0.62	0.99	0.99	0.99	0.62	0.62
Uniform Del:	70.3	55.4	55.4	60.9	55.1	55.1	64.3	65.7	65.7	54.1	42.9	42.9
IncremntDel:	43.2	1.7	1.7	3.9	19.0	19.0	4.6	32.4	32.4	25.6	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	113.5	57.1	57.1	64.8	74.1	74.1	68.9	98.1	98.1	79.7	43.8	43.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	113.5	57.1	57.1	64.8	74.1	74.1	68.9	98.1	98.1	79.7	43.8	43.8
LOS by Move:	F	E+	E+	E	E	E	E	F	F	E-	D	D
HCM2kAvgQ:	13	14	14	11	31	31	7	16	16	33	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #44: Wolfe Rd & Kifer Rd



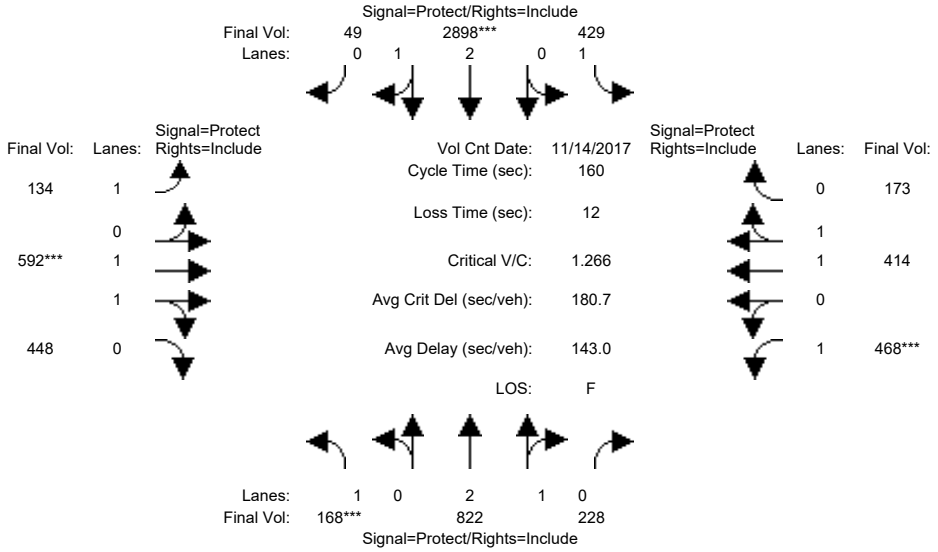
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	369	2333	547	640	819	225	185	142	77	162	519	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	369	2333	547	640	819	225	185	142	77	162	519	251
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	369	2333	547	640	819	225	185	142	77	162	519	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	369	2333	547	640	819	225	185	142	77	162	519	251
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	369	2333	547	640	819	225	185	142	77	162	519	251
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	369	2333	547	640	819	225	185	142	77	162	519	251
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.41	0.59	1.00	2.33	0.67	1.00	1.28	0.72	1.00	1.33	0.67
Final Sat.:	1750	4535	1063	1750	4392	1206	1750	2398	1300	1750	2493	1206
Capacity Analysis Module:												
Vol/Sat:	0.21	0.51	0.51	0.37	0.19	0.19	0.11	0.06	0.06	0.09	0.21	0.21
Crit Moves:		****		****			****				****	
Green Time:	57.9	63.8	63.8	45.3	51.2	51.2	13.1	15.7	15.7	23.2	25.8	25.8
Volume/Cap:	0.58	1.29	1.29	1.29	0.58	0.58	1.29	0.60	0.60	0.64	1.29	1.29
Uniform Del:	41.3	48.1	48.1	57.3	45.5	45.5	73.4	69.2	69.2	64.4	67.1	67.1
IncremntDel:	1.4	134	134.4	145.4	0.5	0.5	173.1	2.9	2.9	5.3	143	143.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.7	182	182.5	202.7	46.0	46.0	246.5	72.1	72.1	69.7	210	210.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.7	182	182.5	202.7	46.0	46.0	246.5	72.1	72.1	69.7	210	210.2
LOS by Move:	D	F	F	F	D	D	F	E	E	E	F	F
HCM2kAvgQ:	14	71	71	53	14	14	16	5	5	8	30	30

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #44: Wolfe Rd & Kifer Rd



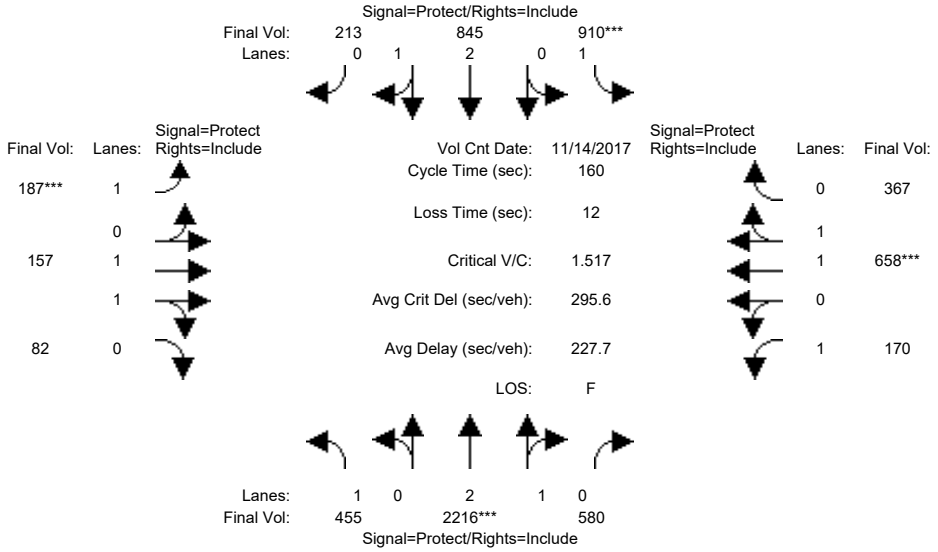
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	168	822	228	429	2898	49	134	592	448	468	414	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	822	228	429	2898	49	134	592	448	468	414	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	822	228	429	2898	49	134	592	448	468	414	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	822	228	429	2898	49	134	592	448	468	414	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	822	228	429	2898	49	134	592	448	468	414	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	822	228	429	2898	49	134	592	448	468	414	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	2.32	0.68	1.00	2.95	0.05	1.00	1.12	0.88	1.00	1.39	0.61
Final Sat.:	1750	4382	1216	1750	5507	93	1750	2105	1593	1750	2609	1090
Capacity Analysis Module:												
Vol/Sat:	0.10	0.19	0.19	0.25	0.53	0.53	0.08	0.28	0.28	0.27	0.16	0.16
Crit Moves:	****				****			****			****	
Green Time:	12.1	34.1	34.1	44.6	66.5	66.5	22.6	35.5	35.5	33.8	46.8	46.8
Volume/Cap:	1.27	0.88	0.88	0.88	1.27	1.27	0.54	1.27	1.27	1.27	0.54	0.54
Uniform Del:	73.9	61.0	61.0	55.2	46.7	46.7	63.9	62.2	62.2	63.1	47.6	47.6
IncremntDel:	166.1	7.8	7.8	16.7	123	123.2	2.5	129	129.3	139.5	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	240.1	68.8	68.8	71.9	170	170.0	66.4	192	191.5	202.6	48.2	48.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	240.1	68.8	68.8	71.9	170	170.0	66.4	192	191.5	202.6	48.2	48.2
LOS by Move:	F	E	E	E	F	F	E	F	F	F	D	D
HCM2kAvgQ:	14	18	18	21	72	72	7	40	40	37	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #44: Wolfe Rd & Kifer Rd



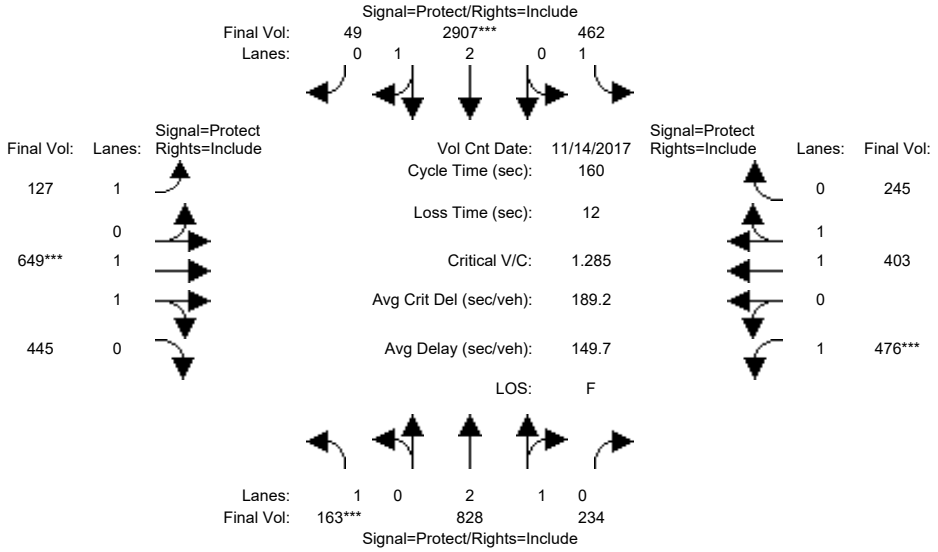
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	455	2216	580	910	845	213	187	157	82	170	658	367
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	455	2216	580	910	845	213	187	157	82	170	658	367
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	455	2216	580	910	845	213	187	157	82	170	658	367
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	455	2216	580	910	845	213	187	157	82	170	658	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	455	2216	580	910	845	213	187	157	82	170	658	367
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	455	2216	580	910	845	213	187	157	82	170	658	367
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.35	0.65	1.00	2.37	0.63	1.00	1.30	0.70	1.00	1.26	0.74
Final Sat.:	1750	4437	1161	1750	4471	1127	1750	2430	1269	1750	2374	1324
Capacity Analysis Module:												
Vol/Sat:	0.26	0.50	0.50	0.52	0.19	0.19	0.11	0.06	0.06	0.10	0.28	0.28
Crit Moves:		****		****			****				****	
Green Time:	62.3	52.7	52.7	54.8	45.3	45.3	11.3	16.2	16.2	24.3	29.2	29.2
Volume/Cap:	0.67	1.52	1.52	1.52	0.67	0.67	1.52	0.64	0.64	0.64	1.52	1.52
Uniform Del:	40.3	53.7	53.7	52.6	50.7	50.7	74.4	69.1	69.1	63.7	65.4	65.4
IncremntDel:	2.6	236	235.6	241.3	1.1	1.1	269.7	3.7	3.7	5.1	240	240.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.9	289	289.3	293.8	51.8	51.8	344.1	72.8	72.8	68.9	306	305.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	289	289.3	293.8	51.8	51.8	344.1	72.8	72.8	68.9	306	305.7
LOS by Move:	D	F	F	F	D-	D-	F	E	E	E	F	F
HCM2kAvgQ:	18	83	83	88	15	15	18	6	6	8	47	47

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #44: Wolfe Rd & Kifer Rd



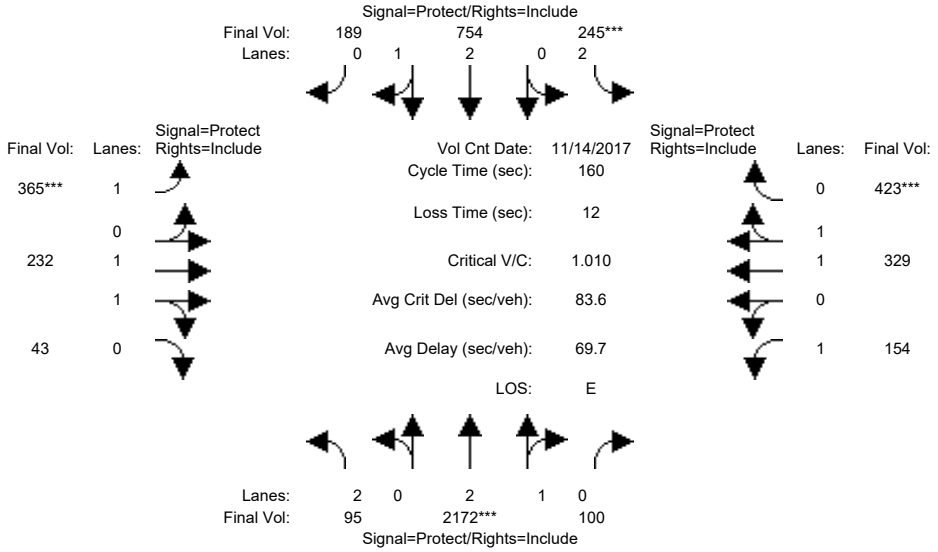
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	163	828	234	462	2907	49	127	649	445	476	403	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	828	234	462	2907	49	127	649	445	476	403	245
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	828	234	462	2907	49	127	649	445	476	403	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	828	234	462	2907	49	127	649	445	476	403	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	828	234	462	2907	49	127	649	445	476	403	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	828	234	462	2907	49	127	649	445	476	403	245
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	1.00	2.31	0.69	1.00	2.95	0.05	1.00	1.16	0.84	1.00	1.22	0.78
Final Sat.:	1750	4364	1233	1750	5507	93	1750	2194	1504	1750	2300	1398
Capacity Analysis Module:												
Vol/Sat:	0.09	0.19	0.19	0.26	0.53	0.53	0.07	0.30	0.30	0.27	0.18	0.18
Crit Moves:	****				****			****			****	
Green Time:	11.6	32.3	32.3	45.0	65.7	65.7	20.7	36.8	36.8	33.9	50.0	50.0
Volume/Cap:	1.29	0.94	0.94	0.94	1.29	1.29	0.56	1.29	1.29	1.29	0.56	0.56
Uniform Del:	74.2	62.9	62.9	56.2	47.1	47.1	65.4	61.6	61.6	63.1	45.9	45.9
IncremntDel:	175.2	14.5	14.5	26.1	132	131.8	3.2	137	137.3	147.4	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	249.4	77.3	77.3	82.2	179	178.9	68.6	199	198.8	210.5	46.5	46.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	249.4	77.3	77.3	82.2	179	178.9	68.6	199	198.8	210.5	46.5	46.5
LOS by Move:	F	E-	E-	F	F	F	E	F	F	F	D	D
HCM2kAvgQ:	14	19	19	25	74	74	6	43	43	39	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #45: Wolfe Rd & Reed Ave



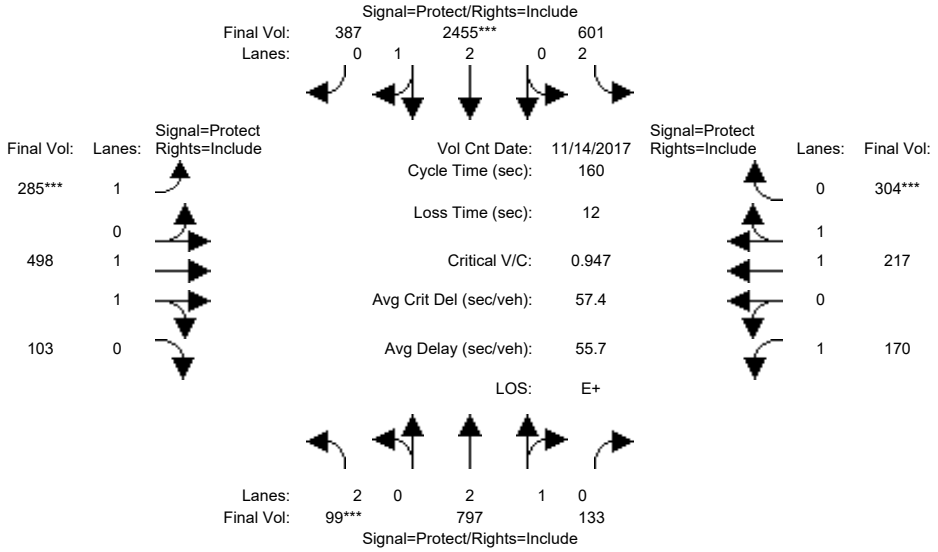
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	95	2172	100	245	754	189	365	232	43	154	329	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	2172	100	245	754	189	365	232	43	154	329	423
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	2172	100	245	754	189	365	232	43	154	329	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	2172	100	245	754	189	365	232	43	154	329	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	2172	100	245	754	189	365	232	43	154	329	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	2172	100	245	754	189	365	232	43	154	329	423
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.86	0.14	2.00	2.38	0.62	1.00	1.68	0.32	1.00	1.00	1.00
Final Sat.:	3150	5353	246	3150	4476	1122	1750	3121	578	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.41	0.41	0.08	0.17	0.17	0.21	0.07	0.07	0.09	0.17	0.24
Crit Moves:		****		****			****					****
Green Time:	15.8	64.3	64.3	12.3	60.8	60.8	33.1	32.7	32.7	38.7	38.3	38.3
Volume/Cap:	0.31	1.01	1.01	1.01	0.44	0.44	1.01	0.36	0.36	0.36	0.72	1.01
Uniform Del:	67.0	47.8	47.8	73.8	37.0	37.0	63.5	54.7	54.7	50.4	56.0	60.8
IncremntDel:	0.6	21.3	21.3	60.2	0.1	0.1	49.7	0.3	0.3	0.5	2.5	35.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.6	69.2	69.2	134.1	37.1	37.1	113.2	55.0	55.0	51.0	58.5	96.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	69.2	69.2	134.1	37.1	37.1	113.2	55.0	55.0	51.0	58.5	96.2
LOS by Move:	E	E	E	F	D+	D+	F	E+	E+	D	E+	F
HCM2kAvgQ:	2	39	39	9	11	11	23	6	6	6	15	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #45: Wolfe Rd & Reed Ave



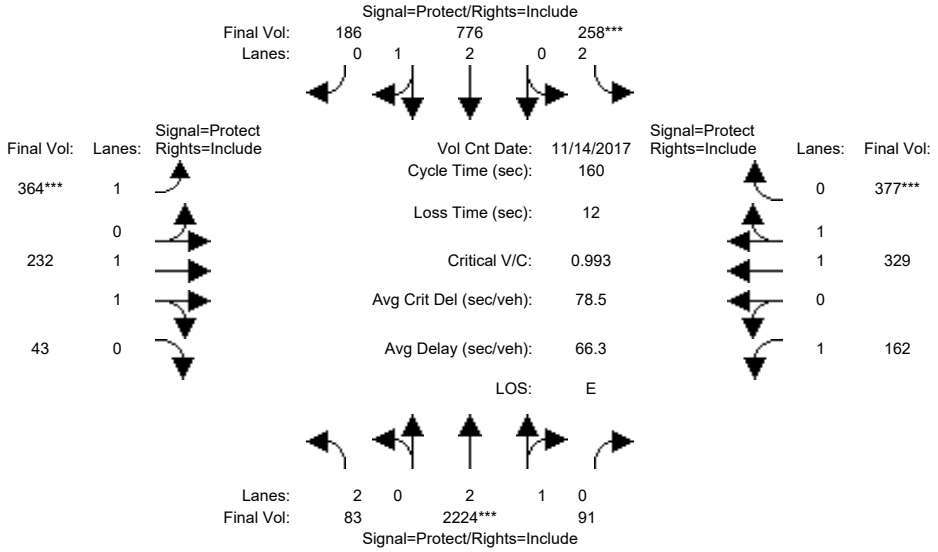
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	797	133	601	2455	387	285	498	103	170	217	304
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	797	133	601	2455	387	285	498	103	170	217	304
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	797	133	601	2455	387	285	498	103	170	217	304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	797	133	601	2455	387	285	498	103	170	217	304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	797	133	601	2455	387	285	498	103	170	217	304
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	797	133	601	2455	387	285	498	103	170	217	304
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.56	0.44	2.00	2.58	0.42	1.00	1.65	0.35	1.00	1.00	1.00
Final Sat.:	3150	4798	801	3150	4836	762	1750	3065	634	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.19	0.51	0.51	0.16	0.16	0.16	0.10	0.11	0.17
Crit Moves:	****				****		****					****
Green Time:	7.0	42.7	42.7	49.1	84.8	84.8	27.2	35.2	35.2	21.0	29.0	29.0
Volume/Cap:	0.72	0.62	0.62	0.62	0.96	0.96	0.96	0.74	0.74	0.74	0.63	0.96
Uniform Del:	75.5	51.5	51.5	47.5	35.9	35.9	65.8	58.1	58.1	66.8	60.5	64.9
IncremntDel:	16.7	0.8	0.8	1.3	8.8	8.8	40.8	3.6	3.6	11.9	1.6	28.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	92.2	52.4	52.4	48.8	44.7	44.7	106.6	61.7	61.7	78.8	62.1	93.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.2	52.4	52.4	48.8	44.7	44.7	106.6	61.7	61.7	78.8	62.1	93.1
LOS by Move:	F	D-	D-	D	D	D	F	E	E	E-	E	F
HCM2kAvgQ:	3	13	13	14	42	42	16	14	14	9	10	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #45: Wolfe Rd & Reed Ave



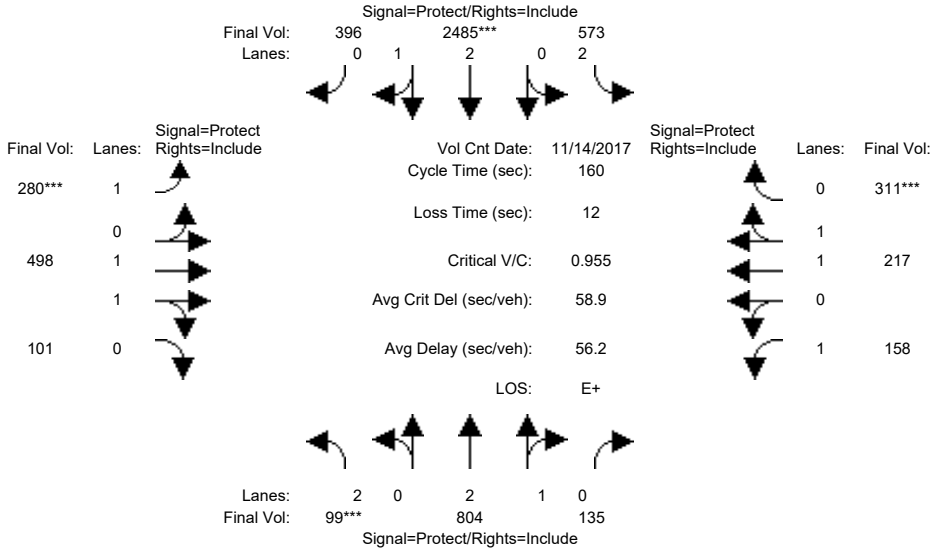
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	83	2224	91	258	776	186	364	232	43	162	329	377
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	2224	91	258	776	186	364	232	43	162	329	377
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	2224	91	258	776	186	364	232	43	162	329	377
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	2224	91	258	776	186	364	232	43	162	329	377
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	2224	91	258	776	186	364	232	43	162	329	377
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	2224	91	258	776	186	364	232	43	162	329	377
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.88	0.12	2.00	2.40	0.60	1.00	1.68	0.32	1.00	1.00	1.00
Final Sat.:	3150	5380	220	3150	4516	1082	1750	3121	578	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.41	0.41	0.08	0.17	0.17	0.21	0.07	0.07	0.09	0.17	0.22
Crit Moves:		****		****			****					****
Green Time:	16.2	66.6	66.6	13.2	63.6	63.6	33.5	30.4	30.4	37.8	34.7	34.7
Volume/Cap:	0.26	0.99	0.99	0.99	0.43	0.43	0.99	0.39	0.39	0.39	0.80	0.99
Uniform Del:	66.4	46.5	46.5	73.4	35.1	35.1	63.1	56.7	56.7	51.4	59.3	62.5
IncremntDel:	0.4	17.0	17.0	53.9	0.1	0.1	45.1	0.4	0.4	0.6	5.2	32.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.8	63.5	63.5	127.2	35.2	35.2	108.2	57.1	57.1	52.0	64.5	94.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.8	63.5	63.5	127.2	35.2	35.2	108.2	57.1	57.1	52.0	64.5	94.5
LOS by Move:	E	E	E	F	D+	D+	F	E+	E+	D-	E	F
HCM2kAvgQ:	2	39	39	9	11	11	22	6	6	7	15	23

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #45: Wolfe Rd & Reed Ave



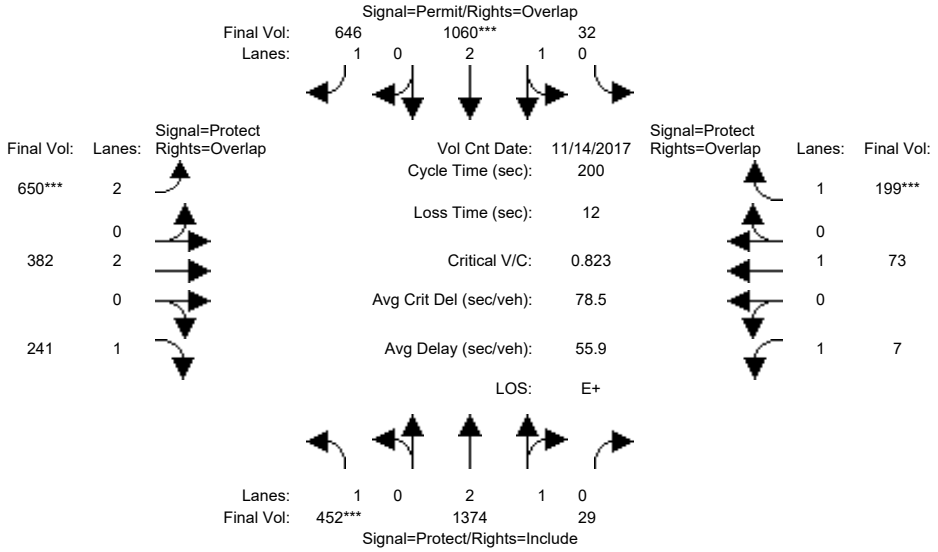
Street Name:	Wolfe Rd						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	99	804	135	573	2485	396	280	498	101	158	217	311
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	804	135	573	2485	396	280	498	101	158	217	311
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	804	135	573	2485	396	280	498	101	158	217	311
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	804	135	573	2485	396	280	498	101	158	217	311
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	804	135	573	2485	396	280	498	101	158	217	311
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	804	135	573	2485	396	280	498	101	158	217	311
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.55	0.45	2.00	2.57	0.43	1.00	1.65	0.35	1.00	1.00	1.00
Final Sat.:	3150	4794	805	3150	4829	770	1750	3076	624	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.18	0.51	0.51	0.16	0.16	0.16	0.09	0.11	0.18
Crit Moves:	****				****		****					****
Green Time:	7.0	44.2	44.2	47.9	85.1	85.1	26.5	35.9	35.9	20.0	29.4	29.4
Volume/Cap:	0.72	0.61	0.61	0.61	0.97	0.97	0.97	0.72	0.72	0.72	0.62	0.97
Uniform Del:	75.5	50.4	50.4	48.0	36.1	36.1	66.3	57.5	57.5	67.3	60.2	64.8
IncremntDel:	16.7	0.7	0.7	1.1	10.0	10.0	43.8	3.1	3.1	11.2	1.4	30.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	92.2	51.1	51.1	49.1	46.1	46.1	110.1	60.6	60.6	78.5	61.6	95.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.2	51.1	51.1	49.1	46.1	46.1	110.1	60.6	60.6	78.5	61.6	95.0
LOS by Move:	F	D-	D-	D	D	D	F	E	E	E-	E	F
HCM2kAvgQ:	3	13	13	13	44	44	16	13	13	8	9	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #46: Wolfe Rd & Fremont Ave



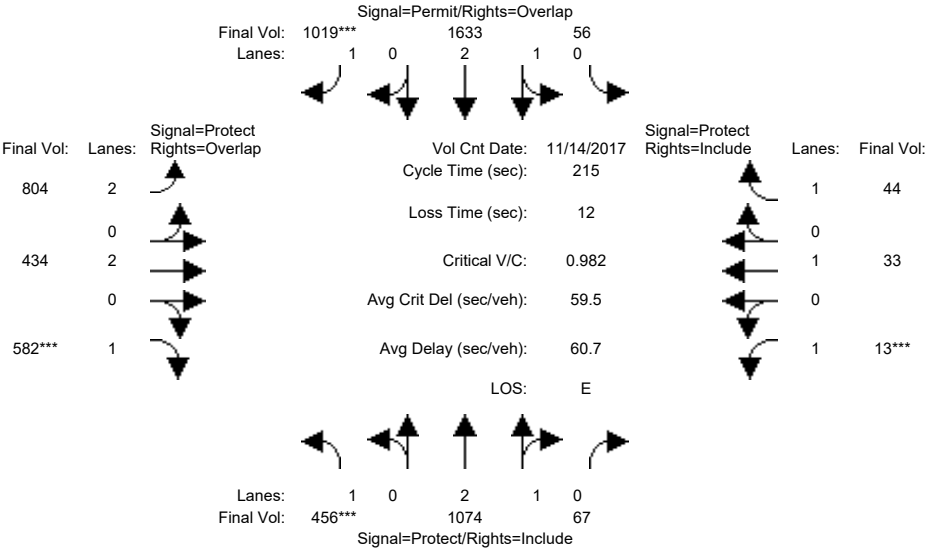
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	452	1374	29	32	1060	646	650	382	241	7	73	199
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	452	1374	29	32	1060	646	650	382	241	7	73	199
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	452	1374	29	32	1060	646	650	382	241	7	73	199
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	452	1374	29	32	1060	646	650	382	241	7	73	199
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	452	1374	29	32	1060	646	650	382	241	7	73	199
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	452	1374	29	32	1060	646	650	382	241	7	73	199
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.98	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.94	0.06	0.09	2.91	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5484	116	164	5436	1750	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.26	0.25	0.25	0.20	0.20	0.37	0.21	0.10	0.14	0.00	0.04	0.11
Crit Moves:	****				****		****					****
Green Time:	62.8	110	110.2	47.4	47.4	97.6	50.2	57.7	120.5	20.1	27.6	27.6
Volume/Cap:	0.82	0.45	0.45	0.82	0.82	0.76	0.82	0.35	0.23	0.04	0.28	0.82
Uniform Del:	63.5	26.9	26.9	72.3	72.3	41.6	70.7	56.3	18.3	81.2	77.2	83.8
IncremntDel:	9.7	0.1	0.1	4.3	4.3	3.9	7.0	0.2	0.1	0.1	0.6	19.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.2	27.0	27.0	76.6	76.6	45.5	77.7	56.5	18.4	81.3	77.8	103.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.2	27.0	27.0	76.6	76.6	45.5	77.7	56.5	18.4	81.3	77.8	103.6
LOS by Move:	E	C	C	E-	E-	D	E-	E+	B-	F	E-	F
HCM2kAvgQ:	27	16	1	21	21	34	23	9	7	0	4	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #46: Wolfe Rd & Fremont Ave



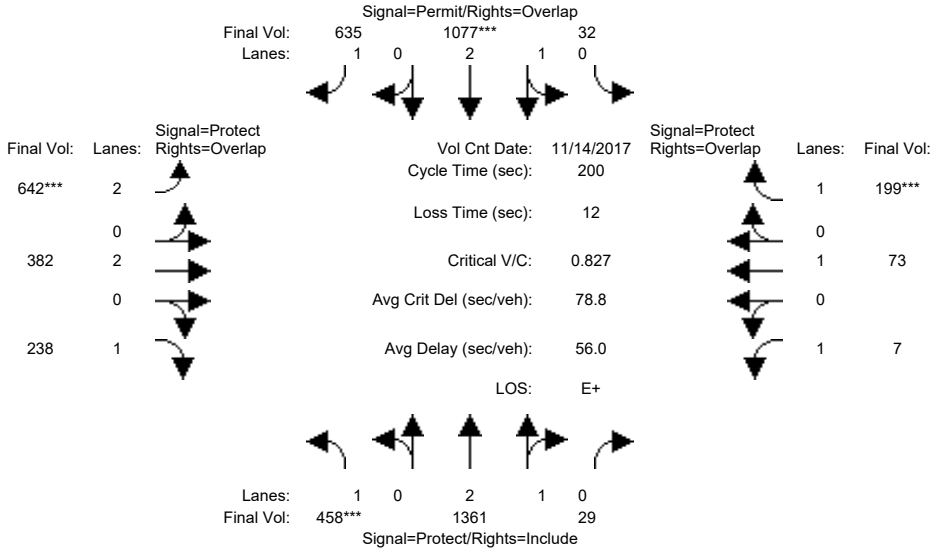
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	456	1074	67	56	1633	1019	804	434	582	13	33	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	456	1074	67	56	1633	1019	804	434	582	13	33	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	456	1074	67	56	1633	1019	804	434	582	13	33	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	456	1074	67	56	1633	1019	804	434	582	13	33	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	1074	67	56	1633	1019	804	434	582	13	33	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	1074	67	56	1633	1019	804	434	582	13	33	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.98	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.82	0.18	0.10	2.90	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5271	329	186	5414	1750	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.26	0.20	0.20	0.30	0.30	0.58	0.26	0.11	0.33	0.01	0.02	0.03
Crit Moves:	****					****			****	****		
Green Time:	55.5	125	125.2	69.7	69.7	135.5	65.8	70.8	126.3	7.0	12.0	12.0
Volume/Cap:	1.01	0.35	0.35	0.93	0.93	0.92	0.83	0.35	0.57	0.23	0.31	0.45
Uniform Del:	79.7	23.6	23.6	70.3	70.3	35.2	69.5	54.6	27.4	101.4	97.5	98.3
IncremntDel:	44.7	0.1	0.1	9.2	9.2	12.7	6.3	0.2	0.7	2.0	1.7	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	124.5	23.6	23.6	79.5	79.5	47.9	75.8	54.7	28.1	103.4	99.2	101.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	124.5	23.6	23.6	79.5	79.5	47.9	75.8	54.7	28.1	103.4	99.2	101.6
LOS by Move:	F	C	C	E-	E-	D	E-	D-	C	F	F	F
HCM2kAvgQ:	33	12	2	34	34	60	27	10	23	1	2	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #46: Wolfe Rd & Fremont Ave



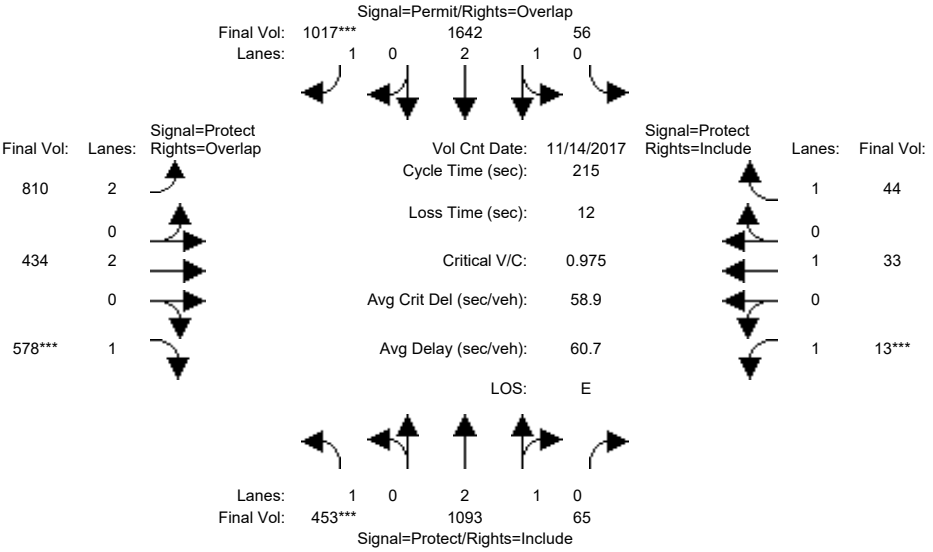
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	458	1361	29	32	1077	635	642	382	238	7	73	199
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	458	1361	29	32	1077	635	642	382	238	7	73	199
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	1361	29	32	1077	635	642	382	238	7	73	199
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	458	1361	29	32	1077	635	642	382	238	7	73	199
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	1361	29	32	1077	635	642	382	238	7	73	199
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	458	1361	29	32	1077	635	642	382	238	7	73	199
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.98	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.94	0.06	0.09	2.91	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5483	117	162	5438	1750	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.26	0.25	0.25	0.20	0.20	0.36	0.20	0.10	0.14	0.00	0.04	0.11
Crit Moves:	****				****		****					****
Green Time:	63.3	111	111.2	47.9	47.9	97.2	49.3	57.0	120.3	19.8	27.5	27.5
Volume/Cap:	0.83	0.45	0.45	0.83	0.83	0.75	0.83	0.35	0.23	0.04	0.28	0.83
Uniform Del:	63.3	26.2	26.2	72.1	72.1	41.5	71.3	56.9	18.4	81.5	77.4	83.9
IncremntDel:	10.0	0.1	0.1	4.4	4.4	3.7	7.3	0.2	0.1	0.1	0.6	20.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.2	26.3	26.3	76.5	76.5	45.1	78.6	57.1	18.5	81.6	77.9	104.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.2	26.3	26.3	76.5	76.5	45.1	78.6	57.1	18.5	81.6	77.9	104.4
LOS by Move:	E	C	C	E-	E-	D	E-	E+	B-	F	E-	F
HCM2kAvgQ:	27	16	1	22	22	33	22	9	7	0	4	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #46: Wolfe Rd & Fremont Ave



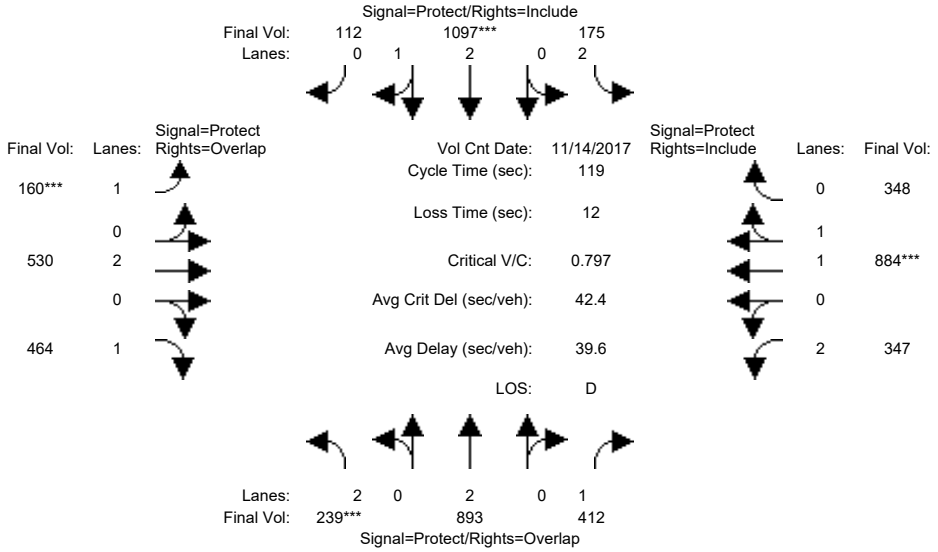
Street Name:	Wolfe Rd						Fremont Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	453	1093	65	56	1642	1017	810	434	578	13	33	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	453	1093	65	56	1642	1017	810	434	578	13	33	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	453	1093	65	56	1642	1017	810	434	578	13	33	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	453	1093	65	56	1642	1017	810	434	578	13	33	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	453	1093	65	56	1642	1017	810	434	578	13	33	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	453	1093	65	56	1642	1017	810	434	578	13	33	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.95	0.98	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.83	0.17	0.10	2.90	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5285	314	185	5415	1750	3150	3800	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.26	0.21	0.21	0.30	0.30	0.58	0.26	0.11	0.33	0.01	0.02	0.03
Crit Moves:	****					****			****	****		
Green Time:	55.6	125	125.1	69.5	69.5	135.5	66.0	70.9	126.5	7.0	11.9	11.9
Volume/Cap:	1.00	0.36	0.36	0.94	0.94	0.92	0.84	0.35	0.56	0.23	0.31	0.45
Uniform Del:	79.7	23.7	23.7	70.6	70.6	35.1	69.5	54.5	27.2	101.4	97.6	98.4
IncremntDel:	42.7	0.1	0.1	9.9	9.9	12.5	6.6	0.2	0.7	2.0	1.7	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	122.5	23.8	23.8	80.5	80.5	47.6	76.1	54.7	27.9	103.4	99.3	101.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	122.5	23.8	23.8	80.5	80.5	47.6	76.1	54.7	27.9	103.4	99.3	101.7
LOS by Move:	F	C	C	F	F	D	E-	D-	C	F	F	F
HCM2kAvgQ:	33	12	2	34	34	59	28	10	23	1	2	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #47: Wolfe Rd & Homestead Rd



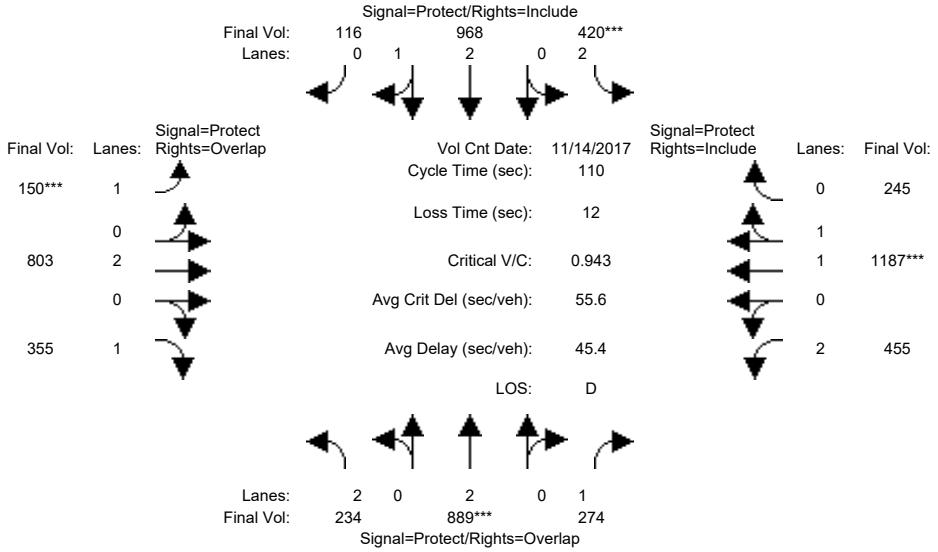
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	239	893	412	175	1097	112	160	530	464	347	884	348
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	893	412	175	1097	112	160	530	464	347	884	348
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	893	412	175	1097	112	160	530	464	347	884	348
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	893	412	175	1097	112	160	530	464	347	884	348
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	893	412	175	1097	112	160	530	464	347	884	348
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	893	412	175	1097	112	160	530	464	347	884	348
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.71	0.29	1.00	2.00	1.00	2.00	1.42	0.58
Final Sat.:	3150	3800	1750	3150	5081	519	1750	3800	1750	3150	2654	1045
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.24	0.06	0.22	0.22	0.09	0.14	0.27	0.11	0.33	0.33
Crit Moves:	****				****		****				****	
Green Time:	11.3	34.9	58.2	8.7	32.3	32.3	13.7	40.1	51.4	23.3	49.8	49.8
Volume/Cap:	0.80	0.80	0.48	0.76	0.80	0.80	0.80	0.41	0.61	0.56	0.80	0.80
Uniform Del:	52.7	38.9	20.3	54.1	40.3	40.3	51.3	30.4	26.1	43.2	30.2	30.2
IncremntDel:	13.8	4.3	0.4	13.5	3.0	3.0	19.5	0.2	1.5	1.2	3.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.5	43.2	20.7	67.6	43.4	43.4	70.9	30.6	27.6	44.4	33.2	33.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	43.2	20.7	67.6	43.4	43.4	70.9	30.6	27.6	44.4	33.2	33.2
LOS by Move:	E	D	C+	E	D	D	E	C	C	D	C-	C-
HCM2kAvgQ:	5	15	10	4	14	14	6	7	13	7	20	20

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #47: Wolfe Rd & Homestead Rd



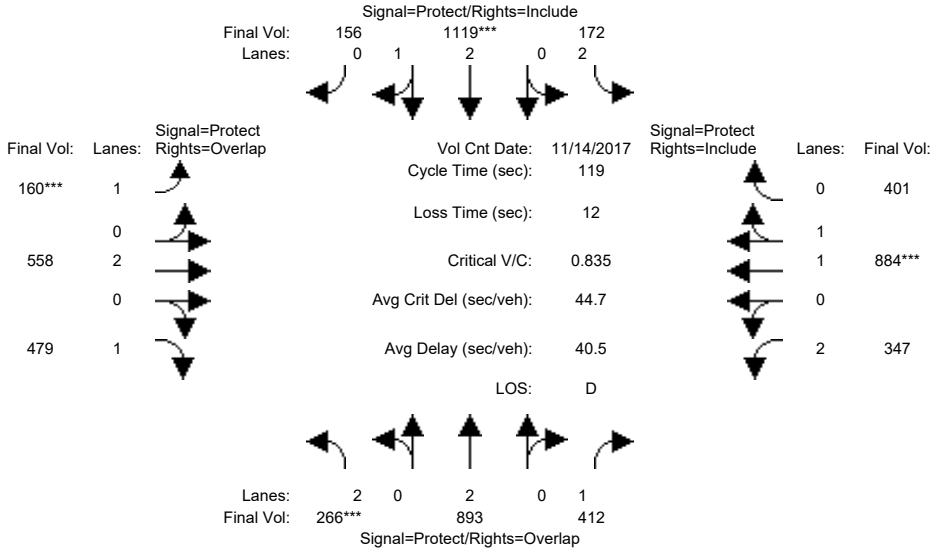
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	234	889	274	420	968	116	150	803	355	455	1187	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	889	274	420	968	116	150	803	355	455	1187	245
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	889	274	420	968	116	150	803	355	455	1187	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	889	274	420	968	116	150	803	355	455	1187	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	889	274	420	968	116	150	803	355	455	1187	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	889	274	420	968	116	150	803	355	455	1187	245
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.67	0.33	1.00	2.00	1.00	2.00	1.65	0.35
Final Sat.:	3150	3800	1750	3150	5000	599	1750	3800	1750	3150	3066	633
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.16	0.13	0.19	0.19	0.09	0.21	0.20	0.14	0.39	0.39
Crit Moves:		****		****			****				****	
Green Time:	11.9	27.3	49.7	15.6	31.0	31.0	10.0	32.8	44.6	22.4	45.2	45.2
Volume/Cap:	0.69	0.94	0.35	0.94	0.69	0.69	0.94	0.71	0.50	0.71	0.94	0.94
Uniform Del:	47.3	40.6	19.6	46.8	35.2	35.2	49.7	34.4	24.4	40.8	31.2	31.2
IncremntDel:	5.8	17.2	0.3	28.7	1.3	1.3	54.5	2.1	0.6	3.7	12.1	12.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.1	57.8	19.9	75.5	36.5	36.5	104.2	36.5	24.9	44.5	43.3	43.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.1	57.8	19.9	75.5	36.5	36.5	104.2	36.5	24.9	44.5	43.3	43.3
LOS by Move:	D-	E+	B-	E-	D+	D+	F	D+	C	D	D	D
HCM2kAvgQ:	5	17	6	9	10	10	5	11	9	9	27	27

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #47: Wolfe Rd & Homestead Rd



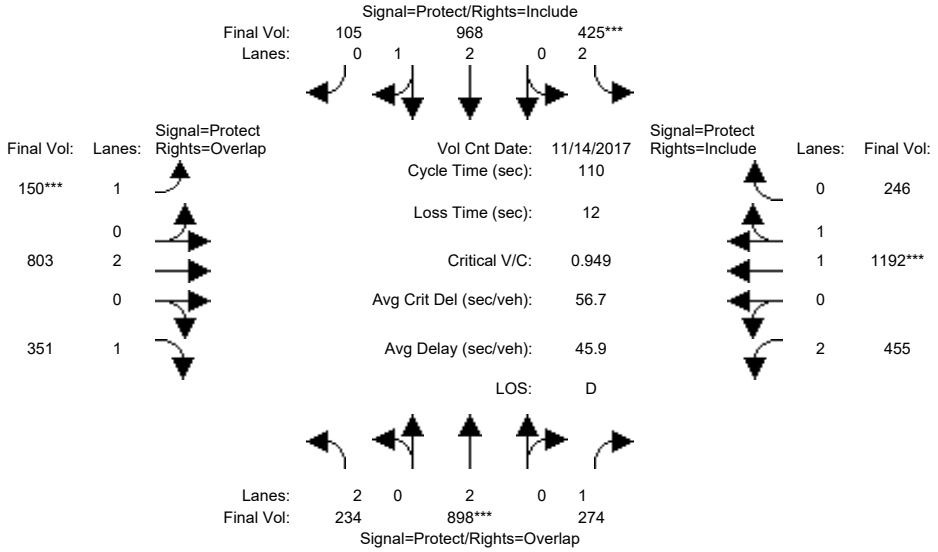
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	266	893	412	172	1119	156	160	558	479	347	884	401
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	893	412	172	1119	156	160	558	479	347	884	401
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	893	412	172	1119	156	160	558	479	347	884	401
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	893	412	172	1119	156	160	558	479	347	884	401
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	893	412	172	1119	156	160	558	479	347	884	401
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	893	412	172	1119	156	160	558	479	347	884	401
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	2.00	1.00	2.00	2.62	0.38	1.00	2.00	1.00	2.00	1.36	0.64
Final Sat.:	3150	3800	1750	3150	4914	685	1750	3800	1750	3150	2545	1154
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.24	0.05	0.23	0.23	0.09	0.15	0.27	0.11	0.35	0.35
Crit Moves:	****				****		****				****	
Green Time:	12.0	35.6	58.6	8.9	32.4	32.4	13.0	39.5	51.6	23.0	49.5	49.5
Volume/Cap:	0.84	0.79	0.48	0.73	0.84	0.84	0.84	0.44	0.63	0.57	0.84	0.84
Uniform Del:	52.5	38.2	20.1	53.9	40.8	40.8	51.9	31.1	26.3	43.5	31.1	31.1
IncremntDel:	17.1	3.7	0.4	11.0	4.2	4.2	26.0	0.2	1.7	1.3	4.1	4.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.6	41.9	20.5	64.9	44.9	44.9	77.9	31.4	28.1	44.8	35.2	35.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.6	41.9	20.5	64.9	44.9	44.9	77.9	31.4	28.1	44.8	35.2	35.2
LOS by Move:	E	D	C+	E	D	D	E-	C	C	D	D+	D+
HCM2kAvgQ:	6	15	10	4	15	15	6	7	14	7	22	22

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #47: Wolfe Rd & Homestead Rd



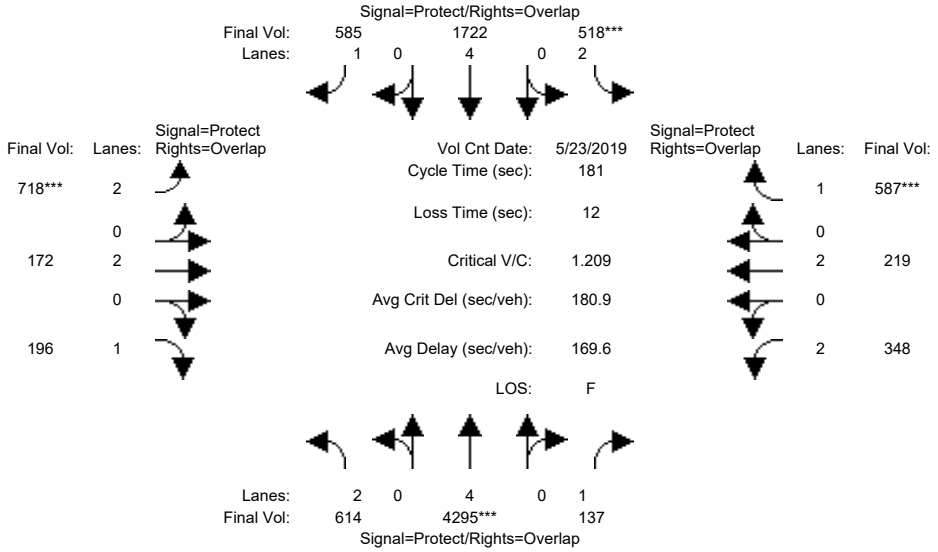
Street Name:	Wolfe Rd						Homestead Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	234	898	274	425	968	105	150	803	351	455	1192	246
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	898	274	425	968	105	150	803	351	455	1192	246
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	898	274	425	968	105	150	803	351	455	1192	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	898	274	425	968	105	150	803	351	455	1192	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	898	274	425	968	105	150	803	351	455	1192	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	898	274	425	968	105	150	803	351	455	1192	246
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.70	0.30	1.00	2.00	1.00	2.00	1.65	0.35
Final Sat.:	3150	3800	1750	3150	5051	548	1750	3800	1750	3150	3067	633
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.16	0.13	0.19	0.19	0.09	0.21	0.20	0.14	0.39	0.39
Crit Moves:		****		****			****				****	
Green Time:	12.0	27.4	49.7	15.6	31.0	31.0	9.9	32.7	44.7	22.3	45.0	45.0
Volume/Cap:	0.68	0.95	0.35	0.95	0.68	0.68	0.95	0.71	0.49	0.71	0.95	0.95
Uniform Del:	47.1	40.6	19.6	46.8	35.1	35.1	49.8	34.5	24.3	40.8	31.4	31.4
IncremntDel:	5.4	18.2	0.3	29.9	1.2	1.2	56.4	2.2	0.5	3.8	13.0	13.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.6	58.8	19.9	76.7	36.3	36.3	106.2	36.6	24.8	44.6	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	58.8	19.9	76.7	36.3	36.3	106.2	36.6	24.8	44.6	44.4	44.4
LOS by Move:	D-	E+	B-	E-	D+	D+	F	D+	C	D	D	D
HCM2kAvgQ:	5	17	6	9	10	10	5	11	9	9	27	27

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



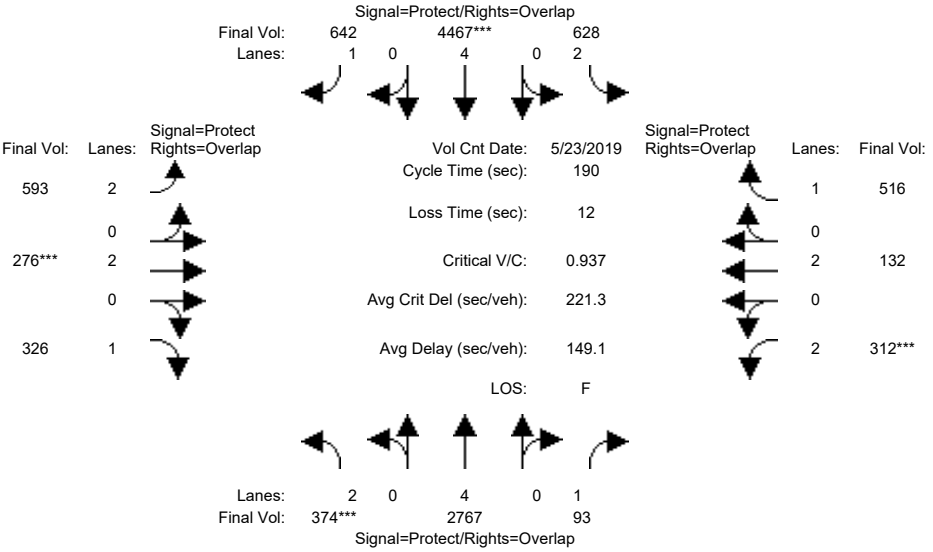
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	614	4295	137	518	1722	585	718	172	196	348	219	587
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	614	4295	137	518	1722	585	718	172	196	348	219	587
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	614	4295	137	518	1722	585	718	172	196	348	219	587
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	614	4295	137	518	1722	585	718	172	196	348	219	587
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	614	4295	137	518	1722	585	718	172	196	348	219	587
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	614	4295	137	518	1722	585	718	172	196	348	219	587
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.57	0.08	0.16	0.23	0.33	0.23	0.05	0.11	0.11	0.06	0.34
Crit Moves:		****		****			****					****
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	2.05	1.18	0.15	1.47	0.46	0.53	1.73	0.21	0.36	1.90	0.40	1.31
Uniform Del:	81.9	47.1	20.9	80.3	29.6	18.8	78.6	58.1	48.2	85.3	70.5	67.4
IncremntDel:	484.8	82.9	0.1	224.5	0.1	0.5	340.0	0.1	0.4	426.9	0.5	156.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	566.7	120	14.8	304.8	23.0	9.9	418.6	58.2	48.6	512.2	71.0	223.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	566.7	120	14.8	304.8	23.0	9.9	418.6	58.2	48.6	512.2	71.0	223.9
LOS by Move:	F	F	B	F	C+	A	F	E+	D	F	E	F
HCM2kAvgQ:	42	75	2	31	11	10	47	4	9	25	6	55

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



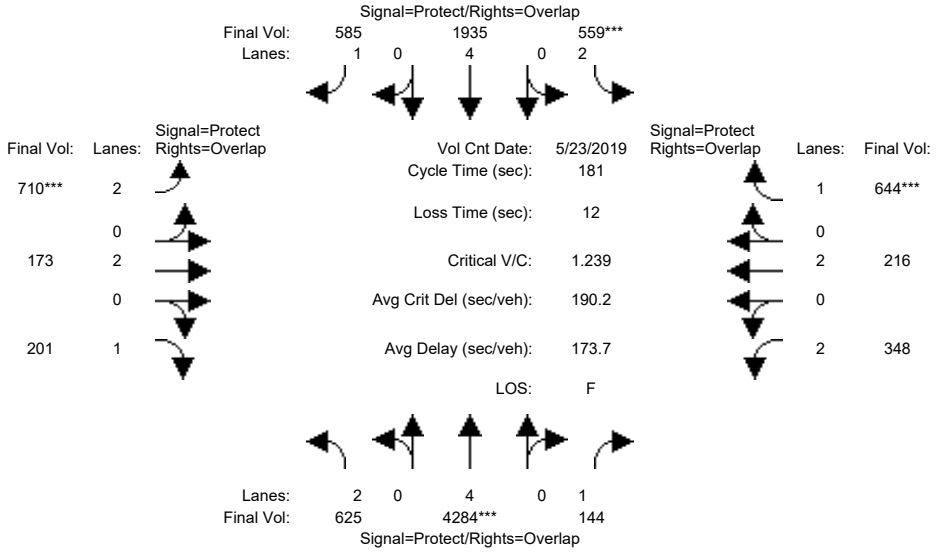
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	374	2767	93	628	4467	642	593	276	326	312	132	516
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	2767	93	628	4467	642	593	276	326	312	132	516
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	2767	93	628	4467	642	593	276	326	312	132	516
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	2767	93	628	4467	642	593	276	326	312	132	516
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	2767	93	628	4467	642	593	276	326	312	132	516
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	2767	93	628	4467	642	593	276	326	312	132	516
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.05	0.20	0.59	0.37	0.19	0.07	0.19	0.10	0.03	0.29
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	1.12	0.97	0.12	1.20	1.36	0.60	1.04	0.26	0.48	1.88	0.23	0.92
Uniform Del:	84.9	58.6	33.0	79.2	53.8	22.3	77.8	52.9	43.8	90.0	70.7	62.5
IncremntDel:	86.5	11.5	0.1	106.8	162	0.9	48.3	0.1	0.5	419.3	0.2	21.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	171.5	65.5	28.6	186.0	216	23.2	126.1	53.0	44.4	509.3	70.9	83.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	171.5	65.5	28.6	186.0	216	23.2	126.1	53.0	44.4	509.3	70.9	83.8
LOS by Move:	F	E	C	F	F	C	F	D-	D	F	E	F
HCM2kAvgQ:	17	42	3	32	99	24	26	6	15	23	3	35

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



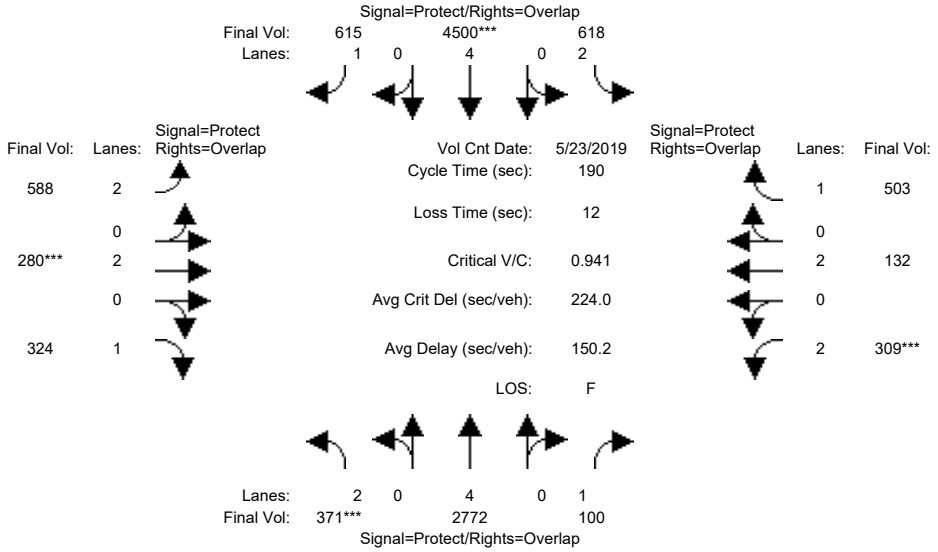
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	86	86	20	89	89	23	39	39	10	20	25
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	625	4284	144	559	1935	585	710	173	201	348	216	644
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	625	4284	144	559	1935	585	710	173	201	348	216	644
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	625	4284	144	559	1935	585	710	173	201	348	216	644
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	625	4284	144	559	1935	585	710	173	201	348	216	644
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	625	4284	144	559	1935	585	710	173	201	348	216	644
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	625	4284	144	559	1935	585	710	173	201	348	216	644
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.56	0.08	0.18	0.25	0.33	0.23	0.05	0.11	0.11	0.06	0.37
Crit Moves:		****			****			****				****
Green Time:	17.2	86.9	97.4	20.3	89.9	113.7	23.8	39.3	56.5	10.5	25.9	46.2
Volume/Cap:	2.09	1.17	0.15	1.58	0.51	0.53	1.71	0.21	0.37	1.90	0.40	1.44
Uniform Del:	81.9	47.1	21.0	80.3	30.8	18.8	78.6	58.1	48.4	85.3	70.5	67.4
IncremntDel:	501.1	81.5	0.1	274.9	0.1	0.5	331.4	0.1	0.4	426.9	0.5	211.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.70	1.00	0.77	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	583.0	119	14.9	355.3	23.9	9.9	410.0	58.2	48.8	512.2	70.9	278.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	583.0	119	14.9	355.3	23.9	9.9	410.0	58.2	48.8	512.2	70.9	278.4
LOS by Move:	F	F	B	F	C	A	F	E+	D	F	E	F
HCM2kAvgQ:	44	74	3	35	13	10	46	4	9	25	6	65

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #49: Lawrence Expwy & Oakmead Pkwy



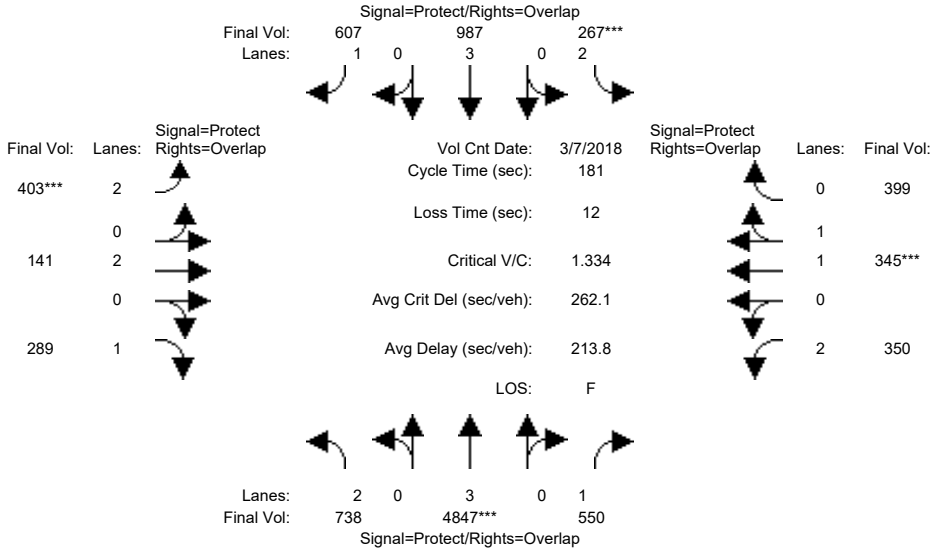
Street Name:	Lawrence Expwy						Oakmead Pkwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	71	71	31	82	82	34	53	53	10	29	29
Y+R:	6.4	6.2	6.2	6.3	6.2	6.2	5.6	5.5	5.5	5.6	5.6	5.6
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	371	2772	100	618	4500	615	588	280	324	309	132	503
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	371	2772	100	618	4500	615	588	280	324	309	132	503
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	371	2772	100	618	4500	615	588	280	324	309	132	503
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	371	2772	100	618	4500	615	588	280	324	309	132	503
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	371	2772	100	618	4500	615	588	280	324	309	132	503
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	371	2772	100	618	4500	615	588	280	324	309	132	503
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.06	0.20	0.59	0.35	0.19	0.07	0.19	0.10	0.03	0.29
Crit Moves:	****				****			****			****	
Green Time:	20.1	71.0	81.0	31.6	82.4	116.8	34.4	53.5	73.6	10.0	29.0	60.6
Volume/Cap:	1.11	0.98	0.13	1.18	1.37	0.57	1.03	0.26	0.48	1.86	0.23	0.90
Uniform Del:	84.9	58.7	33.2	79.2	53.8	21.7	77.8	52.9	43.8	90.0	70.7	61.8
IncremntDel:	83.4	11.8	0.1	99.3	166	0.7	45.8	0.1	0.5	411.4	0.2	17.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.92	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	168.3	65.9	28.8	178.5	220	22.5	123.6	53.1	44.3	501.4	70.9	79.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	168.3	65.9	28.8	178.5	220	22.5	123.6	53.1	44.3	501.4	70.9	79.6
LOS by Move:	F	E	C	F	F	C+	F	D-	D	F	E	E-
HCM2kAvgQ:	17	43	3	31	100	22	26	6	15	22	3	33

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #51: Lawrence Expwy & Kifer Rd



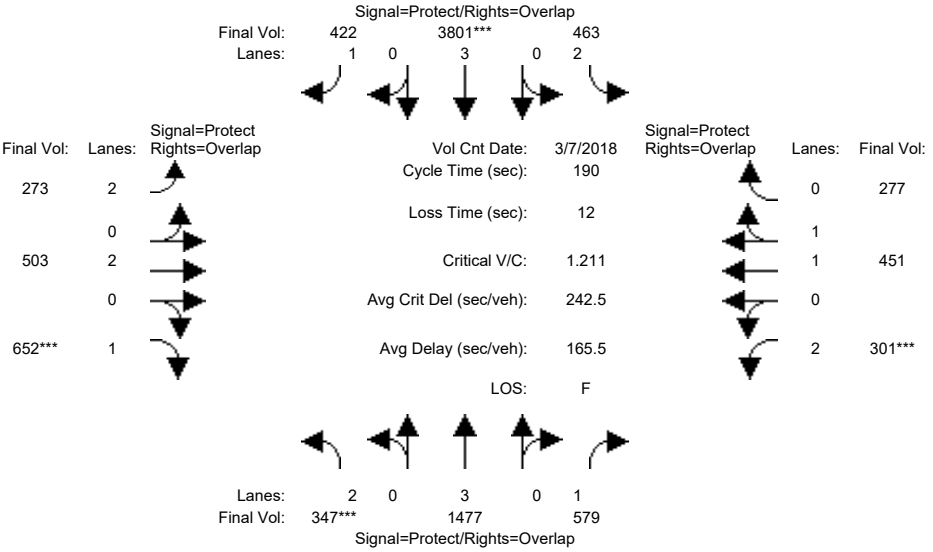
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	738	5571	550	267	1134	607	403	141	289	350	345	399
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	738	5571	550	267	1134	607	403	141	289	350	345	399
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	738	5571	550	267	1134	607	403	141	289	350	345	399
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	738	4847	550	267	987	607	403	141	289	350	345	399
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	738	4847	550	267	987	607	403	141	289	350	345	399
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	738	4847	550	267	987	607	403	141	289	350	345	399
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.91
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1887	1737
Capacity Analysis Module:												
Vol/Sat:	0.23	0.85	0.31	0.08	0.17	0.35	0.13	0.04	0.17	0.11	0.18	0.23
Crit Moves:		****			****			****			****	
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	1.68	1.52	0.51	0.90	0.34	0.59	1.81	0.23	0.55	1.86	1.23	0.94
Uniform Del:	77.9	40.0	19.3	81.1	25.8	23.9	84.1	66.5	53.4	85.1	77.1	67.3
IncremntDel:	317.2	237	0.4	27.6	0.1	0.9	381.6	0.2	1.3	407.2	118	19.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	395.1	264	10.6	108.6	19.3	15.5	465.7	66.7	54.7	492.3	195	87.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	395.1	264	10.6	108.6	19.3	15.5	465.7	66.7	54.7	492.3	195	87.1
LOS by Move:	F	F	B+	F	B-	B	F	E	D-	F	F	F
HCM2kAvgQ:	45	151	9	11	7	15	26	3	14	23	27	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #51: Lawrence Expwy & Kifer Rd



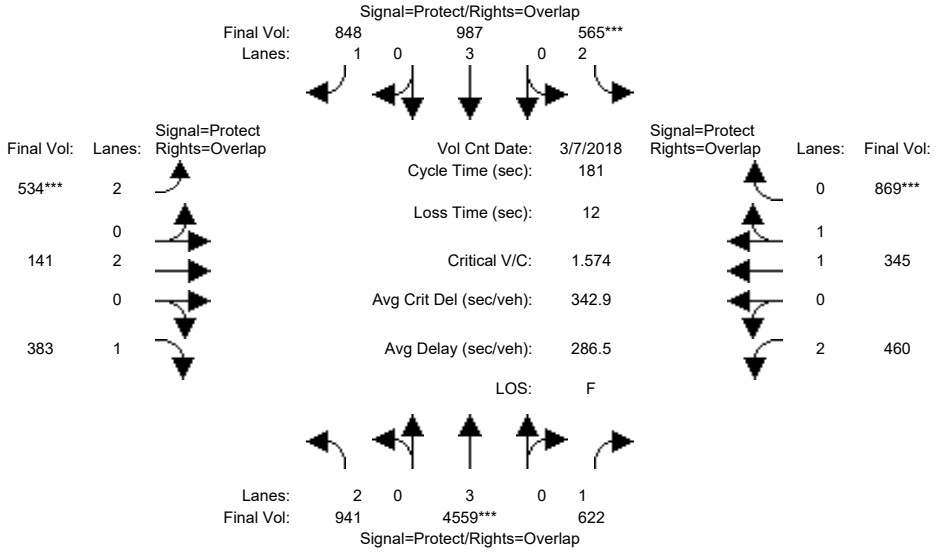
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	347	1846	579	463	4811	422	273	503	652	301	451	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	347	1846	579	463	4811	422	273	503	652	301	451	277
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	347	1846	579	463	4811	422	273	503	652	301	451	277
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	347	1477	579	463	3801	422	273	503	652	301	451	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	347	1477	579	463	3801	422	273	503	652	301	451	277
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	347	1477	579	463	3801	422	273	503	652	301	451	277
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.22	0.78
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2291	1407
Capacity Analysis Module:												
Vol/Sat:	0.11	0.26	0.33	0.15	0.67	0.24	0.09	0.13	0.37	0.10	0.20	0.20
Crit Moves:	****				****				****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	2.35	0.58	0.59	1.04	1.23	0.39	1.04	0.76	1.69	0.84	0.96	0.57
Uniform Del:	90.6	39.2	27.4	81.5	43.5	17.5	87.1	74.8	74.1	82.4	74.8	50.5
IncremntDel:	629.8	0.3	1.0	52.8	106	0.2	66.9	5.2	321.4	15.6	23.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	723.3	60.7	51.6	143.3	184	37.3	154.0	80.0	395.4	98.0	98.4	51.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	723.3	60.7	51.6	143.3	184	37.3	154.0	80.0	395.4	98.0	98.4	51.2
LOS by Move:	F	E	D-	F	F	D+	F	E-	F	F	F	D-
HCM2kAvgQ:	26	25	31	21	101	21	11	14	75	11	23	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #51: Lawrence Expwy & Kifer Rd



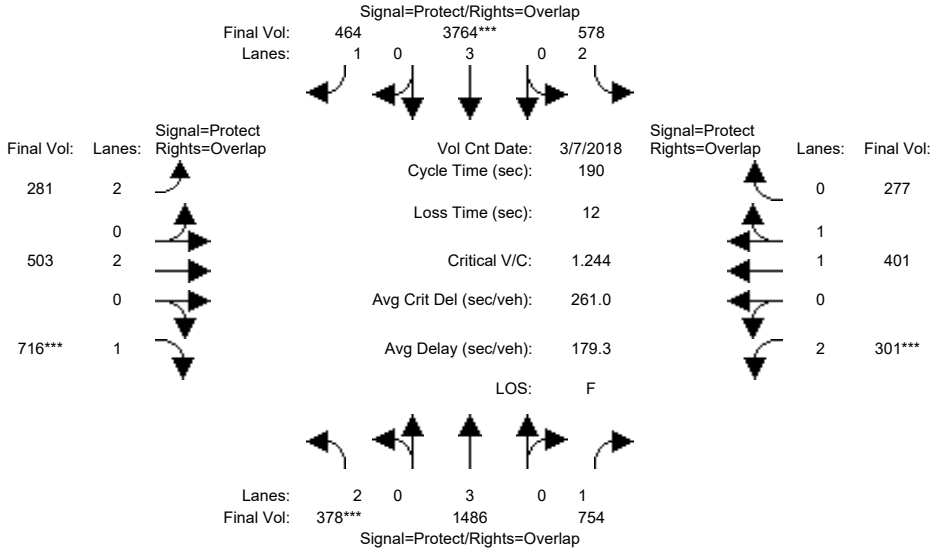
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	25	101	101	17	93	93	13	29	29	11	27	27
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	941	5240	622	565	1134	848	534	141	383	460	345	869
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	941	5240	622	565	1134	848	534	141	383	460	345	869
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	941	5240	622	565	1134	848	534	141	383	460	345	869
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	941	4559	622	565	987	848	534	141	383	460	345	869
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	941	4559	622	565	987	848	534	141	383	460	345	869
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	941	4559	622	565	987	848	534	141	383	460	345	869
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.91
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	1887	1737
Capacity Analysis Module:												
Vol/Sat:	0.30	0.80	0.36	0.18	0.17	0.48	0.17	0.04	0.22	0.15	0.18	0.50
Crit Moves:		****		****			****					****
Green Time:	25.2	101	111.8	17.1	93.1	105.9	12.8	28.8	54.0	10.8	26.9	44.0
Volume/Cap:	2.15	1.43	0.58	1.90	0.34	0.83	2.40	0.23	0.73	2.45	1.23	2.06
Uniform Del:	77.9	40.0	20.5	81.9	25.8	30.2	84.1	66.5	57.0	85.1	77.1	68.5
IncremntDel:	523.3	197	0.8	416.5	0.1	5.7	642.6	0.2	5.3	666.5	113	481.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.67	0.53	1.00	0.74	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	601.2	223	11.7	498.5	19.3	24.1	726.7	66.7	62.4	751.6	190	550.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	601.2	223	11.7	498.5	19.3	24.1	726.7	66.7	62.4	751.6	190	550.3
LOS by Move:	F	F	B+	F	B-	C	F	E	E	F	F	F
HCM2kAvgQ:	67	134	12	39	7	33	40	3	21	35	26	109

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #51: Lawrence Expwy & Kifer Rd



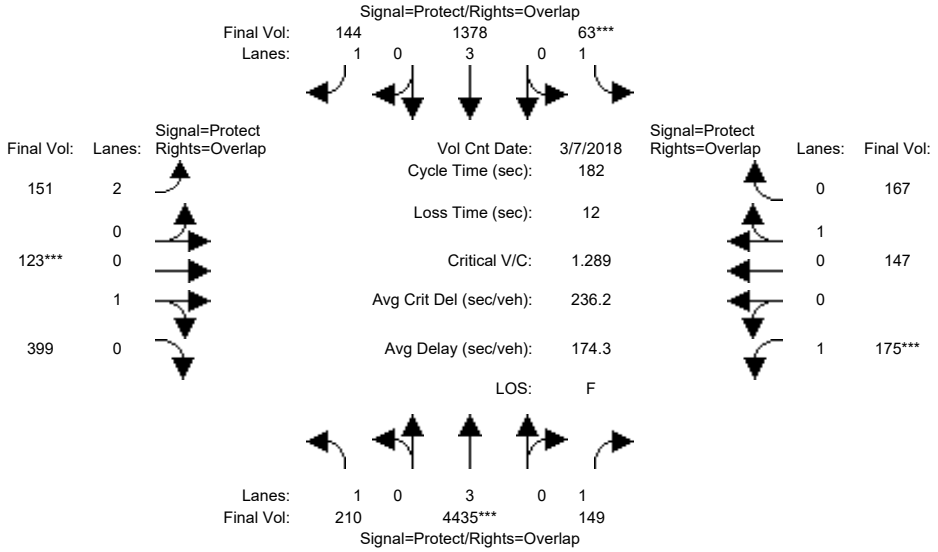
Street Name:	Lawrence Expwy						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	9	85	85	27	103	103	16	33	33	22	39	39
Y+R:	5.9	6.2	6.2	6.1	6.2	6.2	5.8	5.5	5.5	5.9	5.5	5.5
Volume Module: >> Count Date: 7 Mar 2018 << 4:15 PM - 5:15 PM												
Base Vol:	378	1858	754	578	4765	464	281	503	716	301	401	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	378	1858	754	578	4765	464	281	503	716	301	401	277
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	378	1858	754	578	4765	464	281	503	716	301	401	277
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	378	1486	754	578	3764	464	281	503	716	301	401	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	378	1486	754	578	3764	464	281	503	716	301	401	277
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	378	1486	754	578	3764	464	281	503	716	301	401	277
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.16	0.84
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2187	1511
Capacity Analysis Module:												
Vol/Sat:	0.12	0.26	0.43	0.18	0.66	0.27	0.09	0.13	0.41	0.10	0.18	0.18
Crit Moves:	****				****				****	****		
Green Time:	8.9	84.9	106.6	26.9	103	118.9	15.8	33.0	41.9	21.7	38.9	65.8
Volume/Cap:	2.56	0.58	0.77	1.30	1.22	0.42	1.07	0.76	1.86	0.84	0.90	0.53
Uniform Del:	90.6	39.3	32.2	81.5	43.5	18.1	87.1	74.8	74.1	82.4	73.6	49.7
IncremntDel:	723.3	0.3	3.7	148.9	101	0.3	76.1	5.2	394.8	15.6	13.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.03	1.54	1.85	1.11	1.79	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	816.8	60.9	63.3	239.4	179	38.5	163.2	80.0	468.9	98.0	86.8	50.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	816.8	60.9	63.3	239.4	179	38.5	163.2	80.0	468.9	98.0	86.8	50.1
LOS by Move:	F	E	E	F	F	D+	F	E-	F	F	F	D
HCM2kAvgQ:	30	25	43	32	99	24	12	14	87	10	19	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #53: Lawrence Expwy & Cabrillo Ave



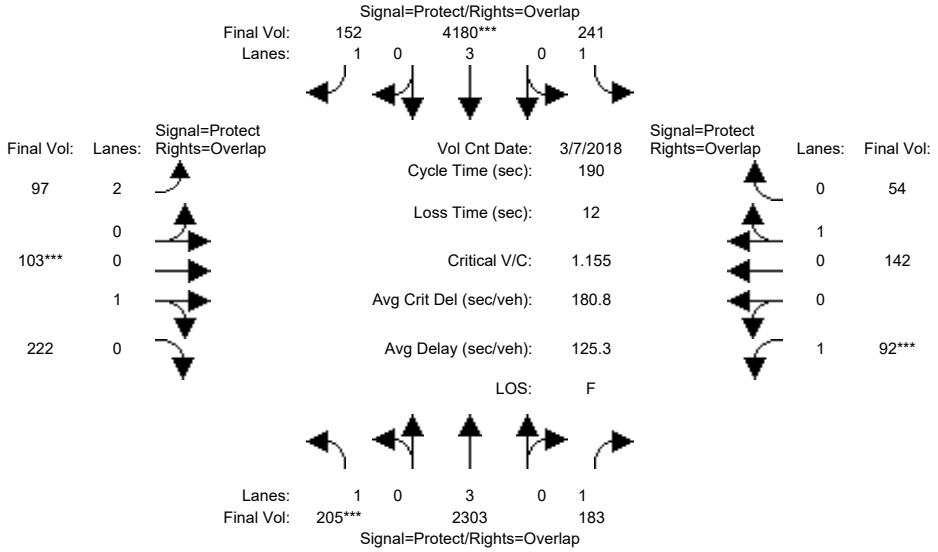
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	11	107	107	11	107	107	15	25	25	15	25	25
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	210	5098	149	63	1584	144	151	123	399	175	147	167
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	5098	149	63	1584	144	151	123	399	175	147	167
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	5098	149	63	1584	144	151	123	399	175	147	167
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	4435	149	63	1378	144	151	123	399	175	147	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	4435	149	63	1378	144	151	123	399	175	147	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	4435	149	63	1378	144	151	123	399	175	147	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.95	0.95	0.92	0.95	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.24	0.76	1.00	0.47	0.53
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	424	1376	1750	843	957
Capacity Analysis Module:												
Vol/Sat:	0.12	0.78	0.09	0.04	0.24	0.08	0.05	0.29	0.29	0.10	0.17	0.17
Crit Moves:		****		****				****		****		
Green Time:	10.9	107	122.3	11.1	108	123.2	15.4	25.7	36.6	15.5	25.3	36.4
Volume/Cap:	2.00	1.33	0.13	0.59	0.41	0.12	0.57	2.05	1.44	1.17	1.25	0.87
Uniform Del:	85.5	37.6	10.7	83.2	19.9	10.4	80.1	78.2	72.7	83.2	78.4	70.5
IncremntDel:	483.5	149	0.0	8.5	0.1	0.0	2.8	488	214.0	128.0	143	20.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.37	1.57	1.00	0.59	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	569.1	200	16.8	91.7	11.9	3.6	82.9	566	286.7	211.2	221	90.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	569.1	200	16.8	91.7	11.9	3.6	82.9	566	286.7	211.2	221	90.7
LOS by Move:	F	F	B	F	B+	A	F	F	F	F	F	F
HCM2kAvgQ:	26	123	5	4	8	1	6	65	52	17	29	20

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #53: Lawrence Expwy & Cabrillo Ave



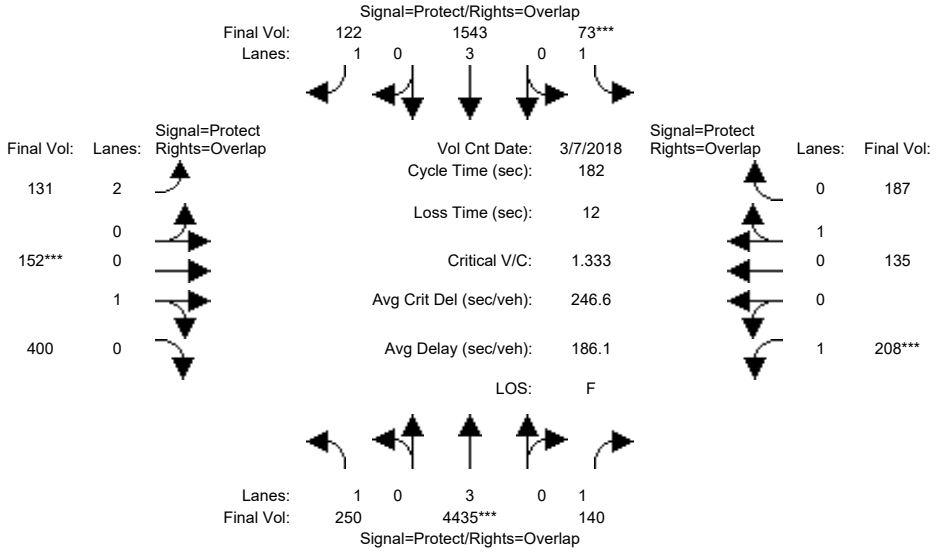
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	107	107	18	111	111	12	30	30	13	31	31
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	205	2879	183	241	5291	152	97	103	222	92	142	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	2879	183	241	5291	152	97	103	222	92	142	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	2879	183	241	5291	152	97	103	222	92	142	54
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	2303	183	241	4180	152	97	103	222	92	142	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	2303	183	241	4180	152	97	103	222	92	142	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	2303	183	241	4180	152	97	103	222	92	142	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.96	0.96	0.92	0.97	0.97
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.32	0.68	1.00	0.72	0.28
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	576	1242	1750	1333	507
Capacity Analysis Module:												
Vol/Sat:	0.12	0.40	0.10	0.14	0.73	0.09	0.03	0.18	0.18	0.05	0.11	0.11
Crit Moves:	****				****			****			****	
Green Time:	13.8	107	120.4	17.9	111	122.7	11.8	29.6	43.4	13.5	30.8	48.7
Volume/Cap:	1.61	0.72	0.17	1.46	1.26	0.13	0.50	1.15	0.78	0.74	0.66	0.42
Uniform Del:	88.1	30.5	14.2	86.1	39.5	13.1	86.2	80.2	68.9	86.5	74.7	58.8
IncremntDel:	309.3	0.8	0.1	238.0	118	0.1	2.0	99.3	9.3	20.8	5.3	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.66	0.49	1.00	1.36	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	397.4	20.8	7.0	324.1	172	19.6	88.2	180	78.2	107.3	79.9	59.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	397.4	20.8	7.0	324.1	172	19.6	88.2	180	78.2	107.3	79.9	59.4
LOS by Move:	F	C+	A	F	F	B-	F	F	E-	F	E-	E+
HCM2kAvgQ:	23	23	2	24	110	5	4	28	20	7	12	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #53: Lawrence Expwy & Cabrillo Ave



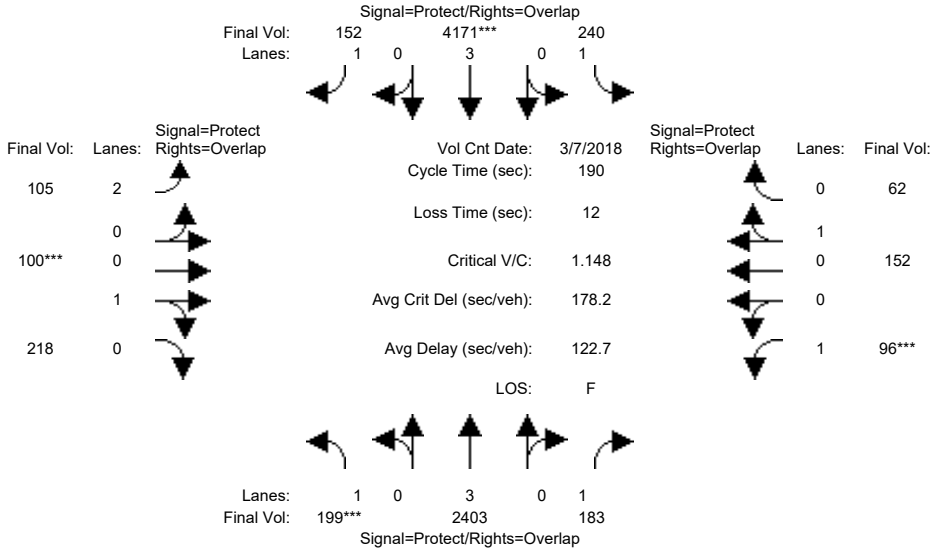
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	11	107	107	11	107	107	15	25	25	15	25	25
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	250	5098	140	73	1774	122	131	152	400	208	135	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	5098	140	73	1774	122	131	152	400	208	135	187
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	5098	140	73	1774	122	131	152	400	208	135	187
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	4435	140	73	1543	122	131	152	400	208	135	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	4435	140	73	1543	122	131	152	400	208	135	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	250	4435	140	73	1543	122	131	152	400	208	135	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.95	0.95	0.92	0.95	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.28	0.72	1.00	0.42	0.58
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	496	1304	1750	755	1045
Capacity Analysis Module:												
Vol/Sat:	0.14	0.78	0.08	0.04	0.27	0.07	0.04	0.31	0.31	0.12	0.18	0.18
Crit Moves:		****		****				****		****		
Green Time:	10.9	107	122.3	11.1	108	123.2	15.4	25.7	36.6	15.5	25.3	36.4
Volume/Cap:	2.38	1.33	0.12	0.68	0.46	0.10	0.49	2.17	1.52	1.40	1.29	0.89
Uniform Del:	85.5	37.6	10.6	83.7	20.7	10.2	79.6	78.2	72.7	83.2	78.4	70.9
IncremntDel:	651.5	149	0.0	16.8	0.1	0.0	1.4	540	249.9	213.3	156	23.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.37	1.57	1.00	0.59	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	737.1	200	16.7	100.5	12.4	3.6	81.0	618	322.6	296.5	234	94.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	737.1	200	16.7	100.5	12.4	3.6	81.0	618	322.6	296.5	234	94.5
LOS by Move:	F	F	B	F	B	A	F	F	F	F	F	F
HCM2kAvgQ:	34	123	5	4	9	1	5	71	57	22	30	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #53: Lawrence Expwy & Cabrillo Ave



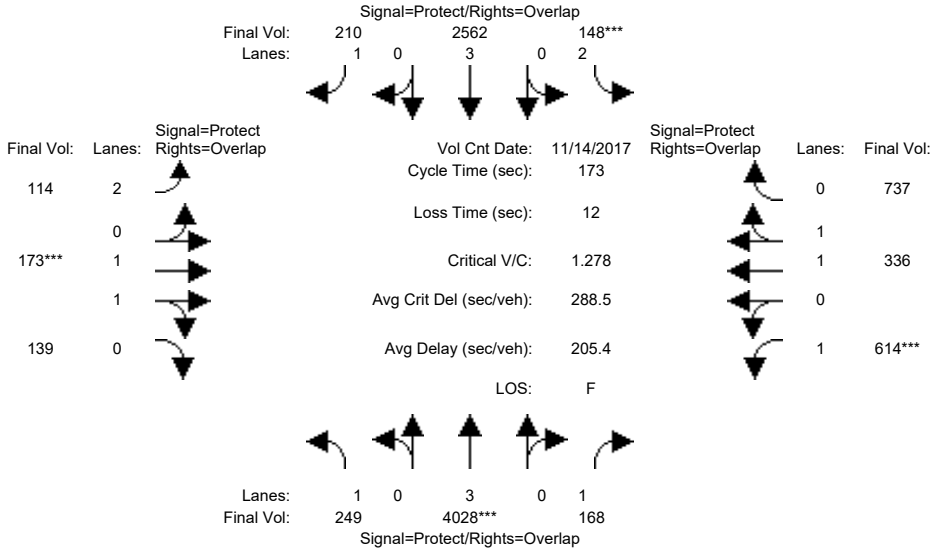
Street Name:	Lawrence Expwy						Cabrillo Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	107	107	18	111	111	12	30	30	13	31	31
Y+R:	5.1	6.2	6.2	4.9	6.2	6.2	5.9	5.8	5.8	5.4	5.8	5.8
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	199	3004	183	240	5280	152	105	100	218	96	152	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	3004	183	240	5280	152	105	100	218	96	152	62
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	3004	183	240	5280	152	105	100	218	96	152	62
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	2403	183	240	4171	152	105	100	218	96	152	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	2403	183	240	4171	152	105	100	218	96	152	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	2403	183	240	4171	152	105	100	218	96	152	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	0.96	0.96	0.92	0.97	0.97
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.31	0.69	1.00	0.71	0.29
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	572	1246	1750	1307	533
Capacity Analysis Module:												
Vol/Sat:	0.11	0.42	0.10	0.14	0.73	0.09	0.03	0.17	0.17	0.05	0.12	0.12
Crit Moves:	****				****			****		****		
Green Time:	13.8	107	120.4	17.9	111	122.7	11.8	29.6	43.4	13.5	30.8	48.7
Volume/Cap:	1.57	0.75	0.17	1.46	1.25	0.13	0.54	1.12	0.77	0.77	0.72	0.45
Uniform Del:	88.1	31.4	14.2	86.1	39.5	13.1	86.4	80.2	68.5	86.7	75.5	59.5
IncremntDel:	289.4	1.0	0.1	235.5	117	0.1	2.9	90.6	8.3	25.1	8.1	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.66	0.49	1.00	1.36	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	377.5	21.7	7.0	321.6	171	19.6	89.4	171	76.9	111.9	83.6	60.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	377.5	21.7	7.0	321.6	171	19.6	89.4	171	76.9	111.9	83.6	60.2
LOS by Move:	F	C+	A	F	F	B-	F	F	E-	F	F	E
HCM2kAvgQ:	21	25	2	24	109	5	4	27	19	8	13	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #54: Lawrence Expwy & Benton St



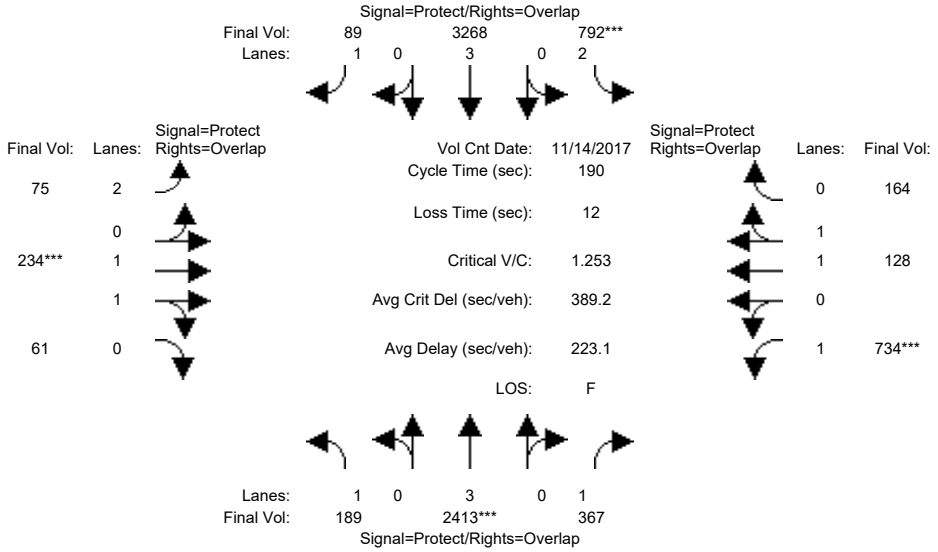
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	16	86	86	19	89	89	19	21	21	25	27	27
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	249	4630	168	148	2945	210	114	173	139	614	336	737
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	4630	168	148	2945	210	114	173	139	614	336	737
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	4630	168	148	2945	210	114	173	139	614	336	737
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	4028	168	148	2562	210	114	173	139	614	336	737
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	4028	168	148	2562	210	114	173	139	614	336	737
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	4028	168	148	2562	210	114	173	139	614	336	737
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.08	0.92	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	2050	1647	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.71	0.10	0.05	0.45	0.12	0.04	0.08	0.08	0.35	0.18	0.42
Crit Moves:		****		****				****		****		
Green Time:	15.7	86.0	111.0	18.6	89.0	107.8	18.8	20.7	36.4	25.0	27.2	45.8
Volume/Cap:	1.57	1.42	0.15	0.44	0.87	0.19	0.33	0.70	0.40	2.43	1.12	1.59
Uniform Del:	78.6	43.5	12.3	72.3	37.0	14.0	71.3	73.2	58.9	74.0	72.9	63.6
IncremntDel:	283.4	192	0.1	0.9	3.2	0.1	0.6	5.1	0.3	654.5	69.9	273.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.24	1.48	1.00	0.74	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	362.0	246	18.3	73.2	30.8	7.3	71.9	78.3	59.2	728.5	143	336.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	362.0	246	18.3	73.2	30.8	7.3	71.9	78.3	59.2	728.5	143	336.6
LOS by Move:	F	F	B-	E	C	A	E	E-	E+	F	F	F
HCM2kAvgQ:	25	115	5	4	36	2	4	9	7	83	25	78

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #54: Lawrence Expwy & Benton St



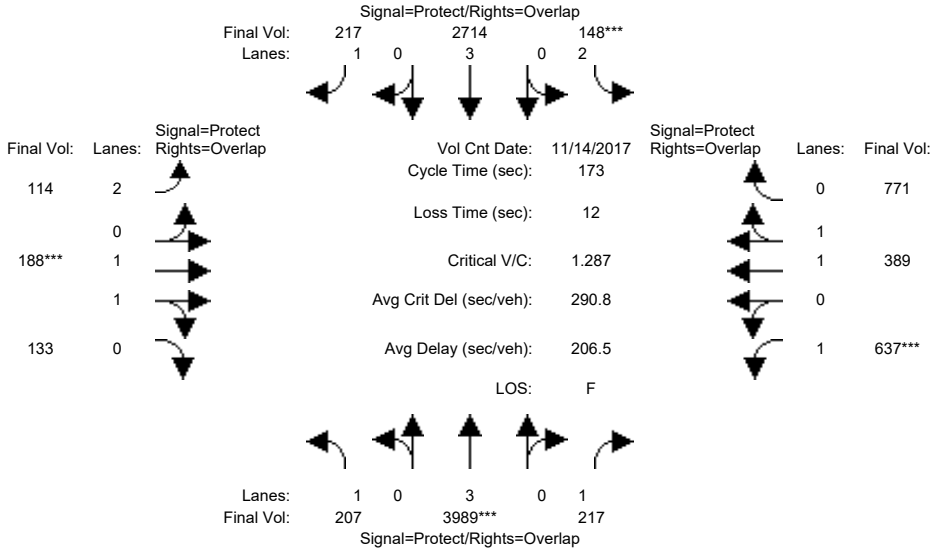
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	83	83	41	104	104	14	28	28	16	30	30
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	189	3016	367	792	4137	89	75	234	61	734	128	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	189	3016	367	792	4137	89	75	234	61	734	128	164
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	189	3016	367	792	4137	89	75	234	61	734	128	164
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	189	2413	367	792	3268	89	75	234	61	734	128	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	2413	367	792	3268	89	75	234	61	734	128	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	189	2413	367	792	3268	89	75	234	61	734	128	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.58	0.42	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	2934	765	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.42	0.21	0.25	0.57	0.05	0.02	0.08	0.08	0.42	0.07	0.09
Crit Moves:		****		****				****		****		
Green Time:	19.8	82.5	98.8	41.4	104	118.3	14.0	27.4	47.2	16.3	29.9	71.3
Volume/Cap:	1.04	0.97	0.40	1.15	1.04	0.08	0.32	0.55	0.32	4.89	0.43	0.25
Uniform Del:	85.1	52.7	27.7	74.3	42.9	14.3	83.5	75.6	58.3	86.8	72.3	40.9
IncremntDel:	76.6	12.7	0.3	85.2	29.3	0.0	0.8	1.3	0.2	1765	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	161.7	57.9	20.6	159.5	58.6	7.4	84.3	76.9	58.5	1852	72.8	41.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	161.7	57.9	20.6	159.5	58.6	7.4	84.3	76.9	58.5	1852	72.8	41.0
LOS by Move:	F	E+	C+	F	E+	A	F	E-	E+	F	E	D
HCM2kAvgQ:	14	47	9	34	67	1	3	9	7	123	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #54: Lawrence Expwy & Benton St



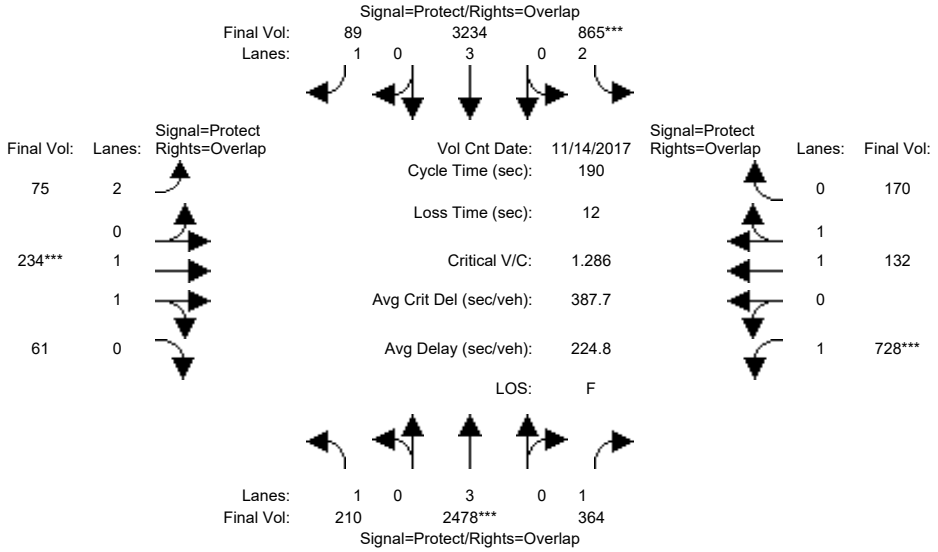
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	16	86	86	19	89	89	19	21	21	25	27	27
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	207	4585	217	148	3119	217	114	188	133	637	389	771
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	207	4585	217	148	3119	217	114	188	133	637	389	771
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	207	4585	217	148	3119	217	114	188	133	637	389	771
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	207	3989	217	148	2714	217	114	188	133	637	389	771
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	207	3989	217	148	2714	217	114	188	133	637	389	771
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	207	3989	217	148	2714	217	114	188	133	637	389	771
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.15	0.85	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	2166	1532	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.70	0.12	0.05	0.48	0.12	0.04	0.09	0.09	0.36	0.20	0.44
Crit Moves:		****		****				****		****		
Green Time:	15.7	86.0	111.0	18.6	89.0	107.8	18.8	20.7	36.4	25.0	27.2	45.8
Volume/Cap:	1.30	1.41	0.19	0.44	0.93	0.20	0.33	0.73	0.41	2.52	1.30	1.66
Uniform Del:	78.6	43.5	12.7	72.3	38.9	14.0	71.3	73.4	59.0	74.0	72.9	63.6
IncremntDel:	174.3	186	0.1	0.9	5.7	0.1	0.6	5.9	0.4	695.2	144	305.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.24	1.48	1.00	0.74	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	253.0	239	18.9	73.2	34.7	7.3	71.9	79.3	59.4	769.2	217	368.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	253.0	239	18.9	73.2	34.7	7.3	71.9	79.3	59.4	769.2	217	368.9
LOS by Move:	F	F	B-	E	C-	A	E	E-	E+	F	F	F
HCM2kAvgQ:	17	112	7	4	42	2	4	10	8	87	33	84

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #54: Lawrence Expwy & Benton St



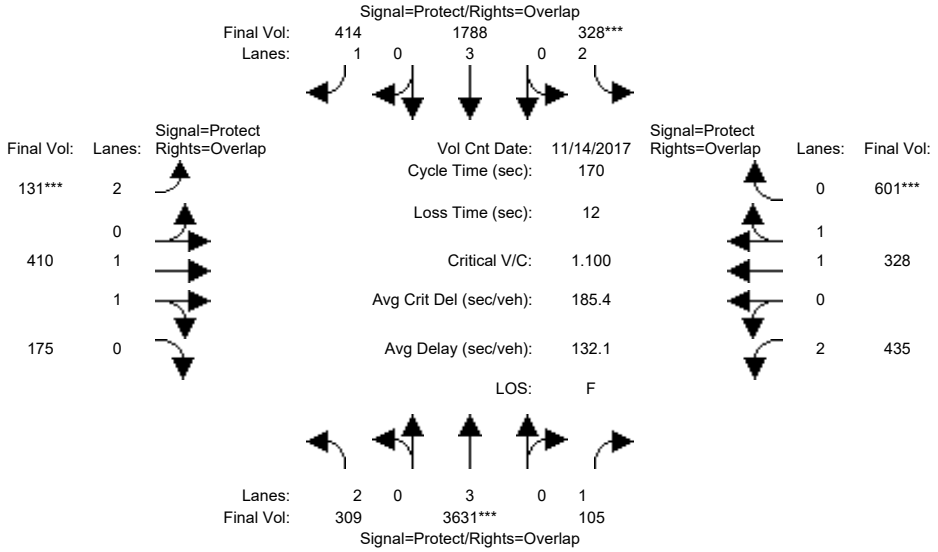
Street Name:	Lawrence Expwy						Benton St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	83	83	41	104	104	14	28	28	16	30	30
Y+R:	5.2	6.2	6.2	5.3	6.2	6.2	5.1	5.7	5.7	5.3	5.7	5.7
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	210	3098	364	865	4094	89	75	234	61	728	132	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	3098	364	865	4094	89	75	234	61	728	132	170
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	3098	364	865	4094	89	75	234	61	728	132	170
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	2478	364	865	3234	89	75	234	61	728	132	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	2478	364	865	3234	89	75	234	61	728	132	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	2478	364	865	3234	89	75	234	61	728	132	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.58	0.42	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	2934	765	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.43	0.21	0.27	0.57	0.05	0.02	0.08	0.08	0.42	0.07	0.10
Crit Moves:		****		****				****		****		
Green Time:	19.8	82.5	98.8	41.4	104	118.3	14.0	27.4	47.2	16.3	29.9	71.3
Volume/Cap:	1.15	1.00	0.40	1.26	1.03	0.08	0.32	0.55	0.32	4.85	0.44	0.26
Uniform Del:	85.1	53.8	27.6	74.3	42.9	14.3	83.5	75.6	58.3	86.8	72.5	41.1
IncremntDel:	113.4	18.4	0.3	128.7	25.6	0.0	0.8	1.3	0.2	1747	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	198.5	64.4	20.6	203.0	54.9	7.4	84.3	76.9	58.5	1834	72.9	41.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	198.5	64.4	20.6	203.0	54.9	7.4	84.3	76.9	58.5	1834	72.9	41.2
LOS by Move:	F	E	C+	F	D-	A	F	E-	E+	F	E	D
HCM2kAvgQ:	17	51	9	42	66	1	3	9	7	121	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #56: Lawrence Expwy & Pruneridge Ave



Street Name: Lawrence Expwy Pruneridge Ave

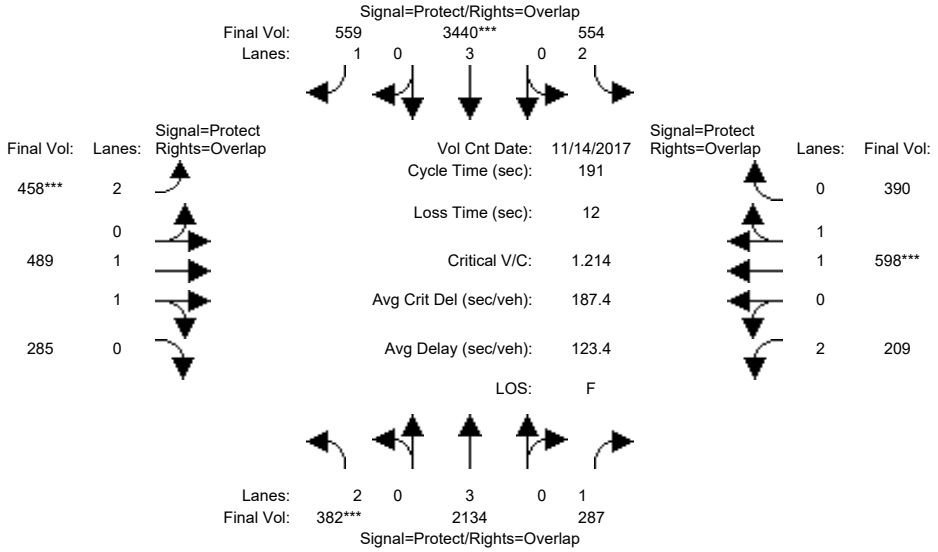
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	16	83	83	13	24	24	26	37	37
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	309	4174	105	328	2055	414	131	410	175	435	328	601
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	309	4174	105	328	2055	414	131	410	175	435	328	601
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	309	4174	105	328	2055	414	131	410	175	435	328	601
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	309	3631	105	328	1788	414	131	410	175	435	328	601
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	3631	105	328	1788	414	131	410	175	435	328	601
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	309	3631	105	328	1788	414	131	410	175	435	328	601
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.39	0.61	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	2592	1106	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.64	0.06	0.10	0.31	0.24	0.04	0.16	0.16	0.14	0.17	0.34
Crit Moves:		****			****			****				****
Green Time:	13.9	81.4	106.9	15.5	83.0	95.4	12.4	23.6	37.5	25.5	36.8	52.3
Volume/Cap:	1.20	1.33	0.10	1.14	0.64	0.42	0.57	1.14	0.72	0.92	0.80	1.12
Uniform Del:	78.0	44.3	12.5	77.2	32.4	21.4	76.2	73.2	61.3	71.3	63.1	58.8
IncremntDel:	120.8	151	0.0	97.0	0.5	0.3	3.4	84.1	3.1	23.3	3.9	68.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.21	1.46	1.00	0.78	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	198.9	205	18.2	174.2	26.0	14.4	79.6	157	64.4	94.6	67.0	127.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	198.9	205	18.2	174.2	26.0	14.4	79.6	157	64.4	94.6	67.0	127.0
LOS by Move:	F	F	B-	F	C	B	E-	F	E	F	E	F
HCM2kAvgQ:	16	98	3	13	17	8	5	23	15	17	18	45

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #56: Lawrence Expwy & Pruneridge Ave



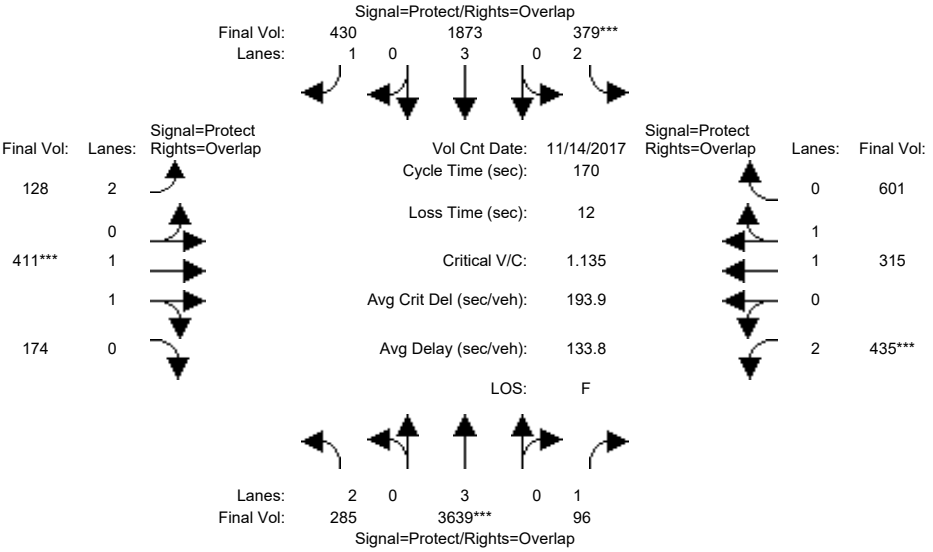
Street Name:	Lawrence Expwy						Pruneridge Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	13	82	82	37	106	106	15	30	30	18	33	33
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	382	2668	287	554	4354	559	458	489	285	209	598	390
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	2668	287	554	4354	559	458	489	285	209	598	390
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	382	2668	287	554	4354	559	458	489	285	209	598	390
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	2134	287	554	3440	559	458	489	285	209	598	390
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	2134	287	554	3440	559	458	489	285	209	598	390
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	382	2134	287	554	3440	559	458	489	285	209	598	390
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.24	0.76	2.00	1.19	0.81
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	2331	1358	3150	2238	1460
Capacity Analysis Module:												
Vol/Sat:	0.12	0.37	0.16	0.18	0.60	0.32	0.15	0.21	0.21	0.07	0.27	0.27
Crit Moves:	****				****		****				****	
Green Time:	13.0	81.5	99.8	37.1	106	120.8	15.2	29.6	42.6	18.3	32.8	69.9
Volume/Cap:	1.78	0.88	0.31	0.91	1.09	0.51	1.83	1.35	0.94	0.69	1.56	0.73
Uniform Del:	89.0	50.2	26.0	75.2	42.7	19.0	87.9	80.7	72.9	83.6	79.1	52.4
IncremntDel:	369.5	4.0	0.2	17.1	47.1	0.4	387.2	170	18.5	6.8	258	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	458.5	47.4	19.2	92.3	76.0	9.7	475.1	251	91.4	90.4	337	54.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	458.5	47.4	19.2	92.3	76.0	9.7	475.1	251	91.4	90.4	337	54.5
LOS by Move:	F	D	B-	F	E-	A	F	F	F	F	F	D-
HCM2kAvgQ:	27	38	7	18	74	9	32	37	26	8	52	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #56: Lawrence Expwy & Pruneridge Ave



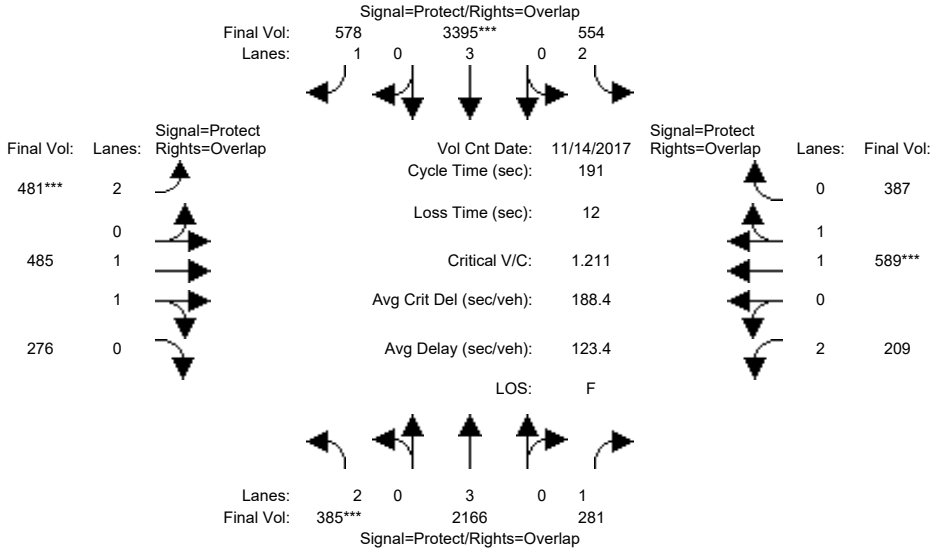
Street Name:	Lawrence Expwy						Pruneridge Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	81	81	16	83	83	13	24	24	26	37	37
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	285	4183	96	379	2153	430	128	411	174	435	315	601
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	4183	96	379	2153	430	128	411	174	435	315	601
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	4183	96	379	2153	430	128	411	174	435	315	601
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	3639	96	379	1873	430	128	411	174	435	315	601
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	3639	96	379	1873	430	128	411	174	435	315	601
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	285	3639	96	379	1873	430	128	411	174	435	315	601
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.39	0.61	2.00	1.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	2599	1100	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.64	0.05	0.12	0.33	0.25	0.04	0.16	0.16	0.14	0.17	0.34
Crit Moves:		****		****				****		****		
Green Time:	13.9	81.4	106.9	15.5	83.0	95.4	12.4	23.6	37.5	25.5	36.8	52.3
Volume/Cap:	1.11	1.33	0.09	1.32	0.67	0.44	0.56	1.14	0.72	0.92	0.77	1.12
Uniform Del:	78.0	44.3	12.4	77.2	33.2	21.7	76.2	73.2	61.3	71.3	62.5	58.8
IncremntDel:	87.5	153	0.0	166.1	0.7	0.3	3.0	84.1	3.1	23.3	3.0	68.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.21	1.46	1.00	0.78	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	165.5	206	18.1	243.3	26.7	14.6	79.2	157	64.4	94.6	65.6	127.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.5	206	18.1	243.3	26.7	14.6	79.2	157	64.4	94.6	65.6	127.2
LOS by Move:	F	F	B-	F	C	B	E-	F	E	F	E	F
HCM2kAvgQ:	14	99	3	18	19	8	5	23	15	17	17	45

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #56: Lawrence Expwy & Pruneridge Ave



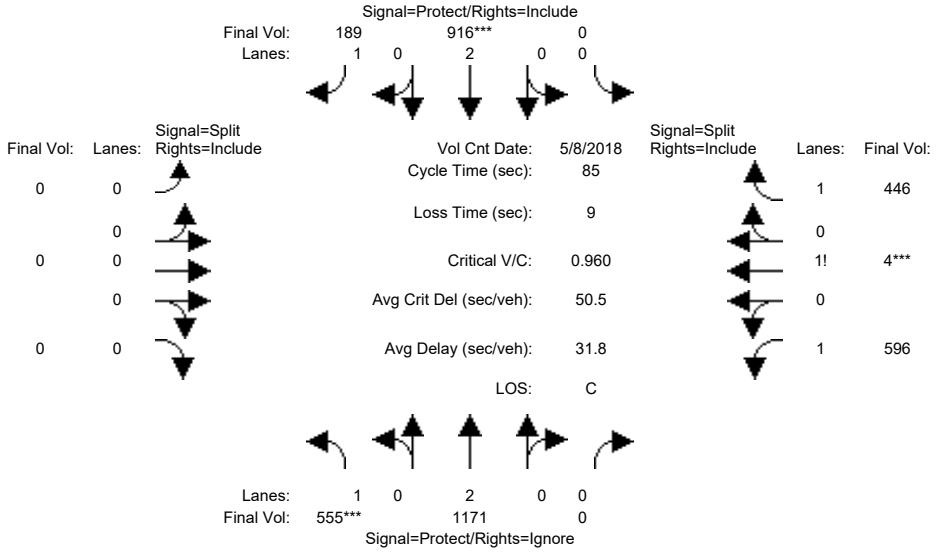
Street Name:	Lawrence Expwy						Pruneridge Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	13	82	82	37	106	106	15	30	30	18	33	33
Y+R:	6.1	6.2	6.2	6.1	6.2	6.2	5.7	5.9	5.9	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 4:30 PM - 5:30 PM												
Base Vol:	385	2707	281	554	4298	578	481	485	276	209	589	387
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	385	2707	281	554	4298	578	481	485	276	209	589	387
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	385	2707	281	554	4298	578	481	485	276	209	589	387
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	385	2166	281	554	3395	578	481	485	276	209	589	387
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	385	2166	281	554	3395	578	481	485	276	209	589	387
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	385	2166	281	554	3395	578	481	485	276	209	589	387
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.25	0.75	2.00	1.19	0.81
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	2351	1338	3150	2232	1466
Capacity Analysis Module:												
Vol/Sat:	0.12	0.38	0.16	0.18	0.60	0.33	0.15	0.21	0.21	0.07	0.26	0.26
Crit Moves:	****				****		****				****	
Green Time:	13.0	81.5	99.8	37.1	106	120.8	15.2	29.6	42.6	18.3	32.8	69.9
Volume/Cap:	1.79	0.89	0.31	0.91	1.08	0.52	1.92	1.33	0.92	0.69	1.54	0.72
Uniform Del:	89.0	50.6	25.9	75.2	42.7	19.3	87.9	80.7	72.6	83.6	79.1	52.2
IncremntDel:	375.7	4.5	0.2	17.1	41.5	0.5	427.7	161	16.0	6.8	250	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.86	0.73	1.00	0.68	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	464.7	48.3	19.1	92.3	70.4	9.9	515.6	241	88.6	90.4	329	54.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	464.7	48.3	19.1	92.3	70.4	9.9	515.6	241	88.6	90.4	329	54.1
LOS by Move:	F	D	B-	F	E	A	F	F	F	F	F	D-
HCM2kAvgQ:	27	39	7	18	71	9	35	36	26	8	51	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



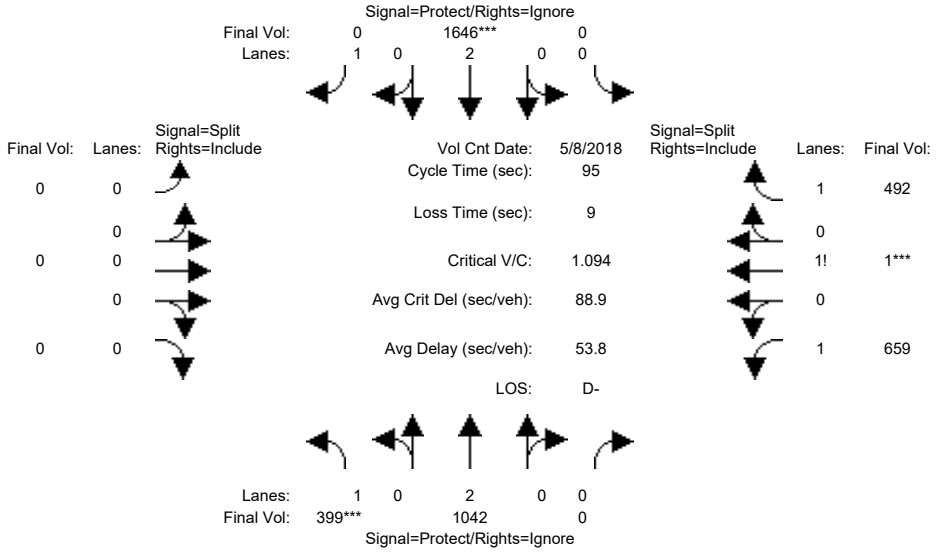
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	555	1171	0	0	916	569	0	0	0	596	4	446
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	555	1171	0	0	916	569	0	0	0	596	4	446
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	555	1171	0	0	916	569	0	0	0	596	4	446
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	555	1171	0	0	916	569	0	0	0	596	4	446
Reduct Vol:	0	0	0	0	0	380	0	0	0	0	0	0
Reduced Vol:	555	1171	0	0	916	189	0	0	0	596	4	446
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	555	1171	0	0	916	189	0	0	0	596	4	446
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.57	0.01	1.42
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2743	13	2493
Capacity Analysis Module:												
Vol/Sat:	0.32	0.31	0.00	0.00	0.24	0.11	0.00	0.00	0.00	0.22	0.30	0.18
Crit Moves:	****				****						****	
Green Time:	28.1	49.4	0.0	0.0	21.3	21.3	0.0	0.0	0.0	26.6	26.6	26.6
Volume/Cap:	0.96	0.53	0.00	0.00	0.96	0.43	0.00	0.00	0.00	0.70	0.96	0.57
Uniform Del:	27.9	10.8	0.0	0.0	31.4	26.7	0.0	0.0	0.0	25.7	28.7	24.5
IncremntDel:	27.6	0.2	0.0	0.0	20.0	0.7	0.0	0.0	0.0	1.4	18.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	55.5	11.0	0.0	0.0	51.4	27.4	0.0	0.0	0.0	27.1	47.0	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.5	11.0	0.0	0.0	51.4	27.4	0.0	0.0	0.0	27.1	47.0	24.9
LOS by Move:	E+	B+	A	A	D-	C	A	A	A	C	D	C
HCM2kAvgQ:	21	9	0	0	15	4	0	0	0	11	20	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



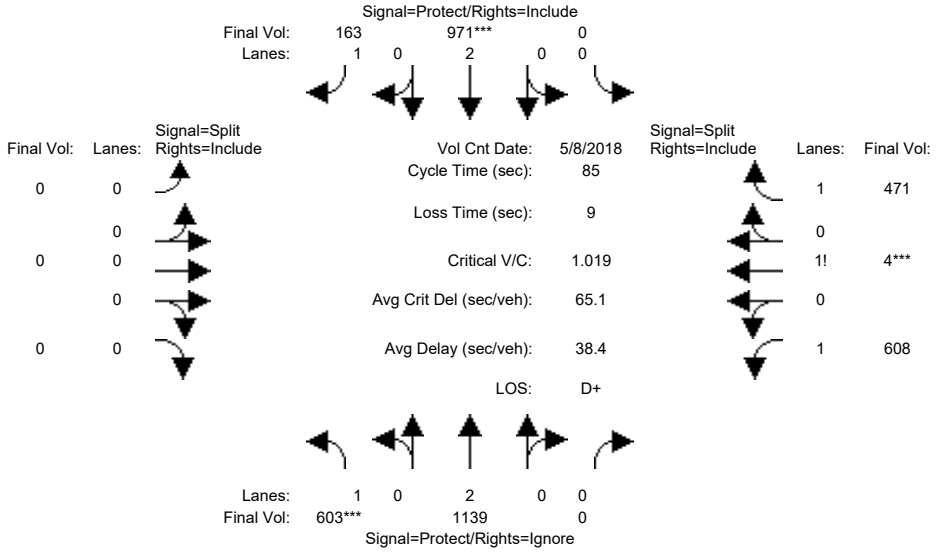
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	399	1042	0	0	1646	737	0	0	0	659	1	492
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	399	1042	0	0	1646	737	0	0	0	659	1	492
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	399	1042	0	0	1646	737	0	0	0	659	1	492
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	399	1042	0	0	1646	0	0	0	0	659	1	492
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	399	1042	0	0	1646	0	0	0	0	659	1	492
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	399	1042	0	0	1646	0	0	0	0	659	1	492
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.57	0.01	1.42
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2750	3	2497
Capacity Analysis Module:												
Vol/Sat:	0.23	0.27	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.24	0.33	0.20
Crit Moves:	****				****						****	
Green Time:	19.8	57.4	0.0	0.0	37.6	0.0	0.0	0.0	0.0	28.6	28.6	28.6
Volume/Cap:	1.09	0.45	0.00	0.00	1.09	0.00	0.00	0.00	0.00	0.80	1.09	0.65
Uniform Del:	37.6	10.3	0.0	0.0	28.7	0.0	0.0	0.0	0.0	30.5	33.2	28.9
IncremntDel:	74.9	0.1	0.0	0.0	53.4	0.0	0.0	0.0	0.0	3.2	57.1	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	112.5	10.4	0.0	0.0	82.1	0.0	0.0	0.0	0.0	33.7	90.3	29.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	112.5	10.4	0.0	0.0	82.1	0.0	0.0	0.0	0.0	33.7	90.3	29.8
LOS by Move:	F	B+	A	A	F	A	A	A	A	C-	F	C
HCM2kAvgQ:	21	8	0	0	32	0	0	0	0	14	29	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



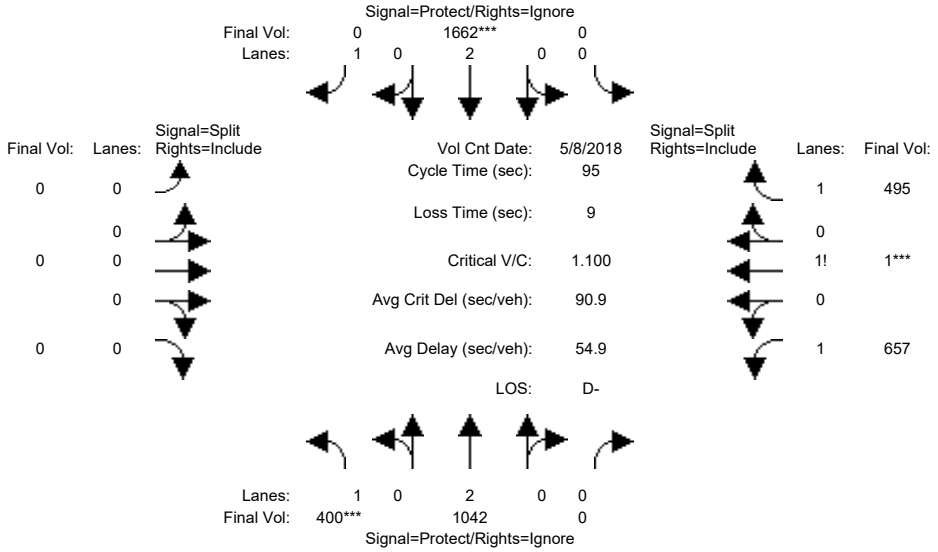
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	603	1139	0	0	971	553	0	0	0	608	4	471
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	603	1139	0	0	971	553	0	0	0	608	4	471
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	603	1139	0	0	971	553	0	0	0	608	4	471
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	603	1139	0	0	971	553	0	0	0	608	4	471
Reduct Vol:	0	0	0	0	0	390	0	0	0	0	0	0
Reduced Vol:	603	1139	0	0	971	163	0	0	0	608	4	471
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	603	1139	0	0	971	163	0	0	0	608	4	471
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.56	0.01	1.43
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2729	13	2508
Capacity Analysis Module:												
Vol/Sat:	0.34	0.30	0.00	0.00	0.26	0.09	0.00	0.00	0.00	0.22	0.31	0.19
Crit Moves:	****				****						****	
Green Time:	28.8	50.1	0.0	0.0	21.3	21.3	0.0	0.0	0.0	25.9	25.9	25.9
Volume/Cap:	1.02	0.51	0.00	0.00	1.02	0.37	0.00	0.00	0.00	0.73	1.02	0.62
Uniform Del:	28.1	10.2	0.0	0.0	31.8	26.3	0.0	0.0	0.0	26.4	29.5	25.3
IncremntDel:	41.7	0.2	0.0	0.0	33.9	0.5	0.0	0.0	0.0	1.9	32.3	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	69.8	10.4	0.0	0.0	65.7	26.8	0.0	0.0	0.0	28.3	61.9	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	10.4	0.0	0.0	65.7	26.8	0.0	0.0	0.0	28.3	61.9	25.9
LOS by Move:	E	B+	A	A	E	C	A	A	A	C	E	C
HCM2kAvgQ:	25	9	0	0	17	4	0	0	0	11	23	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #57: Fair Oaks Ave & US 101 NB Ramps



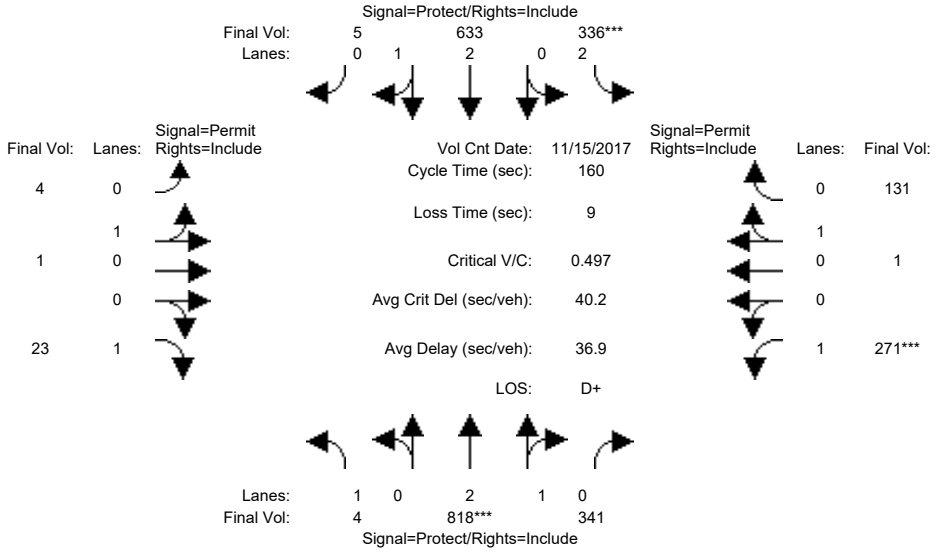
Street Name:	Fair Oaks Ave						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	400	1042	0	0	1662	731	0	0	0	657	1	495
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	1042	0	0	1662	731	0	0	0	657	1	495
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	400	1042	0	0	1662	731	0	0	0	657	1	495
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	400	1042	0	0	1662	0	0	0	0	657	1	495
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	400	1042	0	0	1662	0	0	0	0	657	1	495
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	400	1042	0	0	1662	0	0	0	0	657	1	495
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.57	0.01	1.42
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	2746	3	2501
Capacity Analysis Module:												
Vol/Sat:	0.23	0.27	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.24	0.33	0.20
Crit Moves:	****				****						****	
Green Time:	19.7	57.5	0.0	0.0	37.8	0.0	0.0	0.0	0.0	28.5	28.5	28.5
Volume/Cap:	1.10	0.45	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.80	1.10	0.66
Uniform Del:	37.6	10.2	0.0	0.0	28.6	0.0	0.0	0.0	0.0	30.6	33.3	29.0
IncremntDel:	76.8	0.1	0.0	0.0	55.5	0.0	0.0	0.0	0.0	3.2	59.3	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	114.4	10.3	0.0	0.0	84.2	0.0	0.0	0.0	0.0	33.8	92.5	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.4	10.3	0.0	0.0	84.2	0.0	0.0	0.0	0.0	33.8	92.5	30.0
LOS by Move:	F	B+	A	A	F	A	A	A	A	C-	F	C
HCM2kAvgQ:	22	8	0	0	33	0	0	0	0	14	30	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #58: Wolfe Rd & Stewart Dr



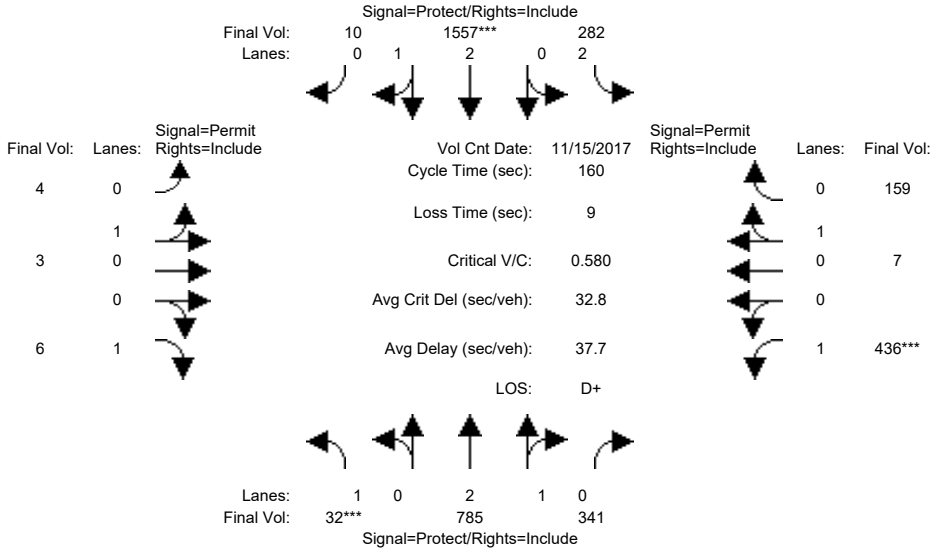
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	818	341	336	633	5	4	1	23	271	1	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	818	341	336	633	5	4	1	23	271	1	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	818	341	336	633	5	4	1	23	271	1	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	818	341	336	633	5	4	1	23	271	1	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	818	341	336	633	5	4	1	23	271	1	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	818	341	336	633	5	4	1	23	271	1	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.09	0.91	2.00	2.98	0.02	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	3950	1647	3150	5556	44	1440	360	1750	1750	14	1786
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.11	0.11	0.11	0.00	0.00	0.01	0.15	0.07	0.07
Crit Moves:		****		****						****		
Green Time:	28.1	66.7	66.7	34.4	73.0	73.0	49.9	49.9	49.9	49.9	49.9	49.9
Volume/Cap:	0.01	0.50	0.50	0.50	0.25	0.25	0.01	0.01	0.04	0.50	0.24	0.24
Uniform Del:	54.5	34.3	34.3	55.2	26.7	26.7	38.0	38.0	38.4	44.8	40.9	40.9
IncremntDel:	0.0	0.2	0.2	0.6	0.1	0.1	0.0	0.0	0.0	0.7	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.5	34.5	34.5	55.8	26.7	26.7	38.0	38.0	38.4	45.5	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	34.5	34.5	55.8	26.7	26.7	38.0	38.0	38.4	45.5	41.1	41.1
LOS by Move:	D-	C-	C-	E+	C	C	D+	D+	D+	D	D	D
HCM2kAvgQ:	0	13	13	8	6	6	0	0	1	12	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #58: Wolfe Rd & Stewart Dr



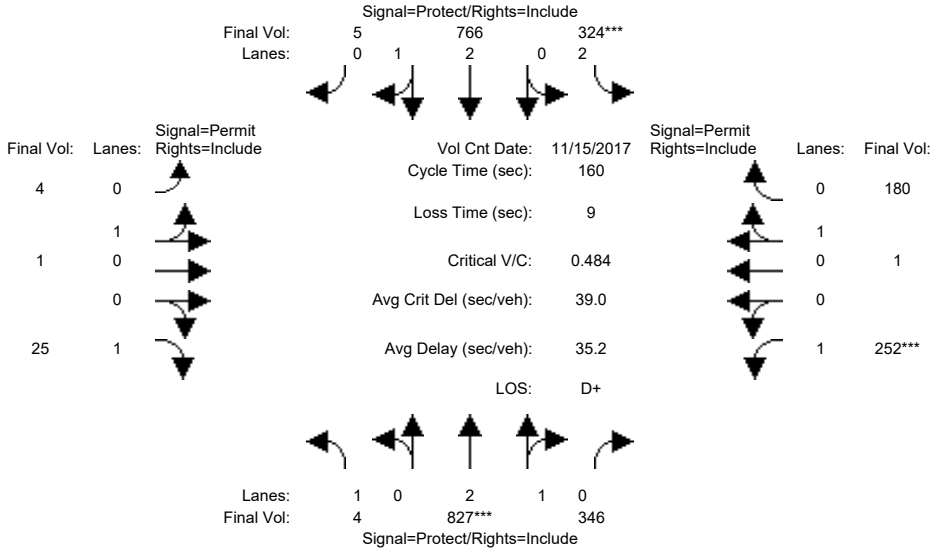
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	32	785	341	282	1557	10	4	3	6	436	7	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	785	341	282	1557	10	4	3	6	436	7	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	785	341	282	1557	10	4	3	6	436	7	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	785	341	282	1557	10	4	3	6	436	7	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	785	341	282	1557	10	4	3	6	436	7	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	785	341	282	1557	10	4	3	6	436	7	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.06	0.94	2.00	2.98	0.02	0.57	0.43	1.00	1.00	0.04	0.96
Final Sat.:	1750	3902	1695	3150	5564	36	1029	771	1750	1750	76	1724
Capacity Analysis Module:												
Vol/Sat:	0.02	0.20	0.20	0.09	0.28	0.28	0.00	0.00	0.00	0.25	0.09	0.09
Crit Moves:	****				****					****		
Green Time:	7.0	57.6	57.6	25.6	76.2	76.2	67.8	67.8	67.8	67.8	67.8	67.8
Volume/Cap:	0.42	0.56	0.56	0.56	0.59	0.59	0.01	0.01	0.01	0.59	0.22	0.22
Uniform Del:	74.5	41.1	41.1	62.0	30.5	30.5	26.7	26.7	26.6	35.4	29.2	29.2
IncremntDel:	3.7	0.4	0.4	1.4	0.3	0.3	0.0	0.0	0.0	1.2	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	78.2	41.4	41.4	63.4	30.8	30.8	26.7	26.7	26.6	36.6	29.4	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.2	41.4	41.4	63.4	30.8	30.8	26.7	26.7	26.6	36.6	29.4	29.4
LOS by Move:	E-	D	D	E	C	C	C	C	C	D+	C	C
HCM2kAvgQ:	2	14	14	7	18	18	0	0	0	18	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #58: Wolfe Rd & Stewart Dr



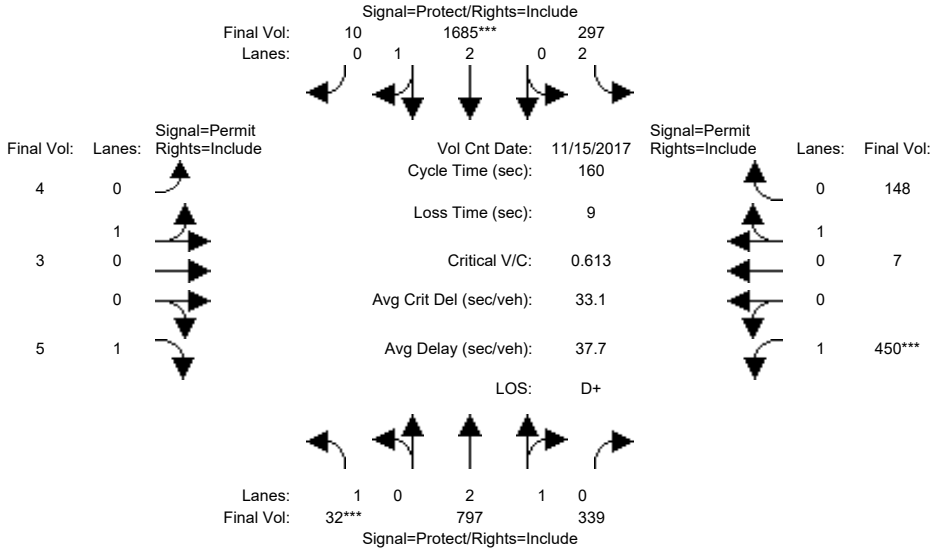
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	4	827	346	324	766	5	4	1	25	252	1	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	827	346	324	766	5	4	1	25	252	1	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	827	346	324	766	5	4	1	25	252	1	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	827	346	324	766	5	4	1	25	252	1	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	827	346	324	766	5	4	1	25	252	1	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	827	346	324	766	5	4	1	25	252	1	180
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.08	0.92	2.00	2.98	0.02	0.80	0.20	1.00	1.00	0.01	0.99
Final Sat.:	1750	3946	1651	3150	5564	36	1440	360	1750	1750	10	1790
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.10	0.14	0.14	0.00	0.00	0.01	0.14	0.10	0.10
Crit Moves:		****		****						****		
Green Time:	24.9	69.3	69.3	34.0	78.4	78.4	47.6	47.6	47.6	47.6	47.6	47.6
Volume/Cap:	0.01	0.48	0.48	0.48	0.28	0.28	0.01	0.01	0.05	0.48	0.34	0.34
Uniform Del:	57.1	32.5	32.5	55.3	24.1	24.1	39.6	39.6	40.0	46.1	43.9	43.9
IncremntDel:	0.0	0.2	0.2	0.6	0.1	0.1	0.0	0.0	0.0	0.7	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.2	32.7	32.7	55.8	24.2	24.2	39.6	39.6	40.1	46.8	44.2	44.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.2	32.7	32.7	55.8	24.2	24.2	39.6	39.6	40.1	46.8	44.2	44.2
LOS by Move:	E+	C-	C-	E+	C	C	D	D	D	D	D	D
HCM2kAvgQ:	0	13	13	8	7	7	0	0	1	11	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #58: Wolfe Rd & Stewart Dr



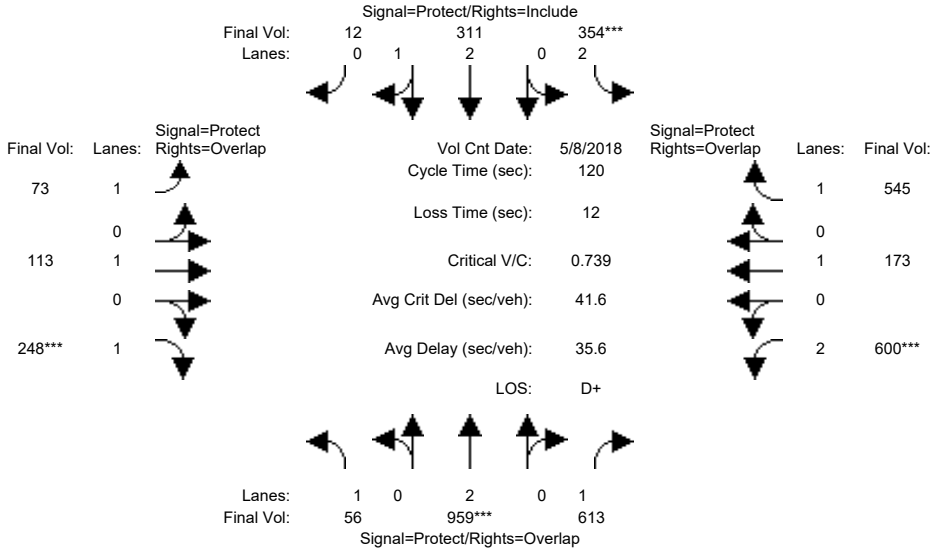
Street Name:	Wolfe Rd						Stewart Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	32	797	339	297	1685	10	4	3	5	450	7	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	797	339	297	1685	10	4	3	5	450	7	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	797	339	297	1685	10	4	3	5	450	7	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	797	339	297	1685	10	4	3	5	450	7	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	797	339	297	1685	10	4	3	5	450	7	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	797	339	297	1685	10	4	3	5	450	7	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.83	0.98	0.95	0.95	0.95	0.92	0.92	0.95	0.95
Lanes:	1.00	2.07	0.93	2.00	2.98	0.02	0.57	0.43	1.00	1.00	0.05	0.95
Final Sat.:	1750	3927	1670	3150	5567	33	1029	771	1750	1750	81	1719
Capacity Analysis Module:												
Vol/Sat:	0.02	0.20	0.20	0.09	0.30	0.30	0.00	0.00	0.00	0.26	0.09	0.09
Crit Moves:	****				****					****		
Green Time:	7.0	57.9	57.9	26.9	77.9	77.9	66.1	66.1	66.1	66.1	66.1	66.1
Volume/Cap:	0.42	0.56	0.56	0.56	0.62	0.62	0.01	0.01	0.01	0.62	0.21	0.21
Uniform Del:	74.5	40.8	40.8	61.1	30.2	30.2	27.6	27.6	27.6	37.1	30.1	30.1
IncremntDel:	3.7	0.4	0.4	1.4	0.5	0.5	0.0	0.0	0.0	1.7	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	78.2	41.2	41.2	62.5	30.7	30.7	27.6	27.6	27.6	38.7	30.3	30.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.2	41.2	41.2	62.5	30.7	30.7	27.6	27.6	27.6	38.7	30.3	30.3
LOS by Move:	E-	D	D	E	C	C	C	C	C	D+	C	C
HCM2kAvgQ:	2	14	14	8	20	20	0	0	0	19	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #59: Fair Oaks Ave & Tasman Dr



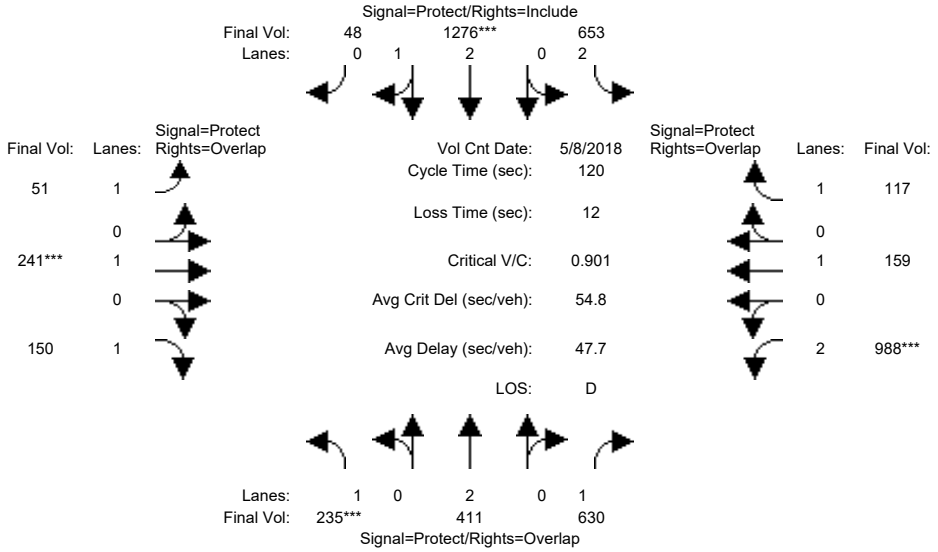
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	56	959	613	354	311	12	73	113	248	600	173	545
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	959	613	354	311	12	73	113	248	600	173	545
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	959	613	354	311	12	73	113	248	600	173	545
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	959	613	354	311	12	73	113	248	600	173	545
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	959	613	354	311	12	73	113	248	600	173	545
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	959	613	354	311	12	73	113	248	600	173	545
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.88	0.12	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5392	208	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.35	0.11	0.06	0.06	0.04	0.06	0.14	0.19	0.09	0.31
Crit Moves:		****		****					****	****		
Green Time:	24.4	41.0	71.9	18.3	34.8	34.8	10.1	13.5	37.9	30.9	34.4	52.7
Volume/Cap:	0.16	0.74	0.58	0.74	0.20	0.20	0.50	0.53	0.45	0.74	0.32	0.71
Uniform Del:	39.3	34.8	14.8	48.6	32.1	32.1	52.5	50.2	32.7	40.8	33.6	27.4
IncremntDel:	0.2	2.3	0.9	6.0	0.1	0.1	2.6	2.4	0.6	3.6	0.3	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.6	37.1	15.7	54.6	32.1	32.1	55.2	52.6	33.3	44.4	33.9	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	37.1	15.7	54.6	32.1	32.1	55.2	52.6	33.3	44.4	33.9	30.5
LOS by Move:	D	D+	B	D-	C-	C-	E+	D-	C-	D	C-	C
HCM2kAvgQ:	2	15	15	9	3	3	3	5	8	12	5	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #59: Fair Oaks Ave & Tasman Dr



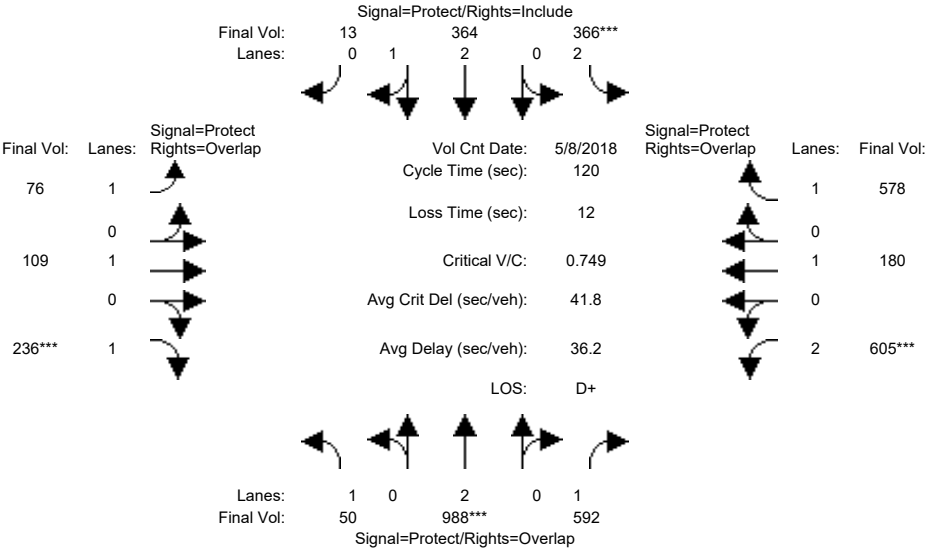
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	235	411	630	653	1276	48	51	241	150	988	159	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	411	630	653	1276	48	51	241	150	988	159	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	411	630	653	1276	48	51	241	150	988	159	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	411	630	653	1276	48	51	241	150	988	159	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	411	630	653	1276	48	51	241	150	988	159	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	411	630	653	1276	48	51	241	150	988	159	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.89	0.11	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5397	203	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.11	0.36	0.21	0.24	0.24	0.03	0.13	0.09	0.31	0.08	0.07
Crit Moves:	****				****			****			****	
Green Time:	17.9	16.9	58.7	32.4	31.5	31.5	24.1	16.9	34.8	41.8	34.6	67.0
Volume/Cap:	0.90	0.77	0.74	0.77	0.90	0.90	0.15	0.90	0.30	0.90	0.29	0.12
Uniform Del:	50.2	49.6	24.5	40.3	42.8	42.8	39.5	50.7	33.1	37.2	33.2	12.5
IncremntDel:	31.2	6.6	3.4	4.2	8.0	8.0	0.2	30.6	0.3	10.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	81.4	56.2	27.9	44.5	50.8	50.8	39.7	81.4	33.4	47.4	33.5	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.4	56.2	27.9	44.5	50.8	50.8	39.7	81.4	33.4	47.4	33.5	12.6
LOS by Move:	F	E+	C	D	D	D	D	F	C-	D	C-	B
HCM2kAvgQ:	10	8	20	15	19	19	2	12	5	19	4	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #59: Fair Oaks Ave & Tasman Dr



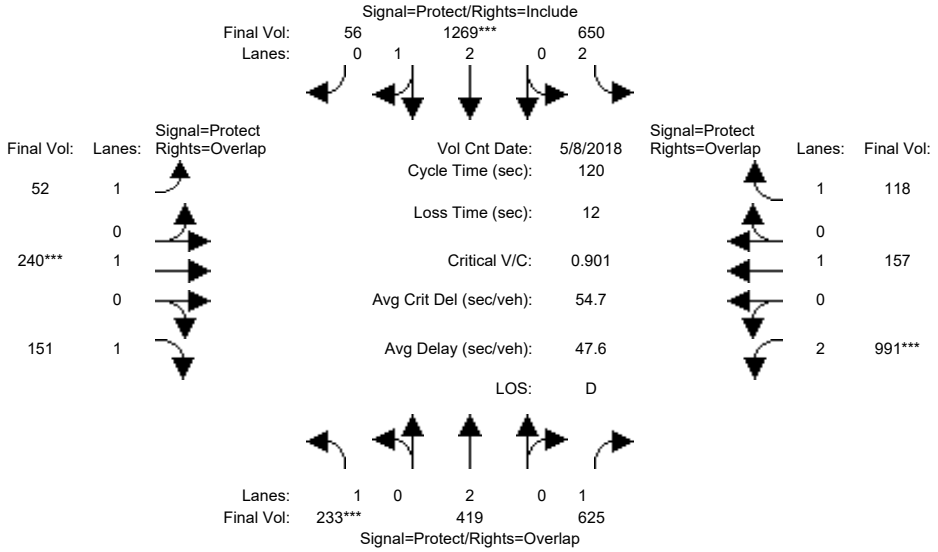
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	50	988	592	366	364	13	76	109	236	605	180	578
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	988	592	366	364	13	76	109	236	605	180	578
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	988	592	366	364	13	76	109	236	605	180	578
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	988	592	366	364	13	76	109	236	605	180	578
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	988	592	366	364	13	76	109	236	605	180	578
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	988	592	366	364	13	76	109	236	605	180	578
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.89	0.11	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5407	193	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.34	0.12	0.07	0.07	0.04	0.06	0.13	0.19	0.09	0.33
Crit Moves:		****		****					****	****		
Green Time:	24.8	41.6	72.4	18.6	35.4	35.4	9.2	12.3	37.1	30.8	33.8	52.4
Volume/Cap:	0.14	0.75	0.56	0.75	0.23	0.23	0.57	0.56	0.44	0.75	0.34	0.76
Uniform Del:	38.9	34.6	14.3	48.5	32.0	32.0	53.5	51.3	33.1	41.1	34.2	28.4
IncremntDel:	0.2	2.4	0.7	6.4	0.1	0.1	5.5	3.7	0.6	3.9	0.4	4.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.0	37.0	15.0	54.8	32.0	32.0	59.0	55.0	33.7	45.0	34.6	32.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	37.0	15.0	54.8	32.0	32.0	59.0	55.0	33.7	45.0	34.6	32.8
LOS by Move:	D	D+	B	D-	C-	C-	E+	E+	C-	D	C-	C-
HCM2kAvgQ:	2	16	14	9	4	4	4	5	8	12	5	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #59: Fair Oaks Ave & Tasman Dr



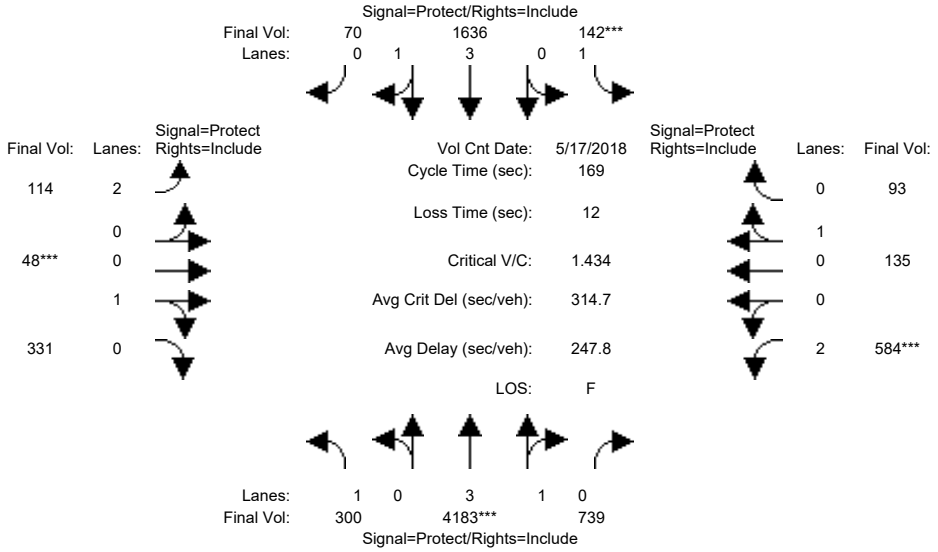
Street Name:	Fair Oaks Ave						Tasman Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	233	419	625	650	1269	56	52	240	151	991	157	118
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	233	419	625	650	1269	56	52	240	151	991	157	118
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	233	419	625	650	1269	56	52	240	151	991	157	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	233	419	625	650	1269	56	52	240	151	991	157	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	419	625	650	1269	56	52	240	151	991	157	118
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	233	419	625	650	1269	56	52	240	151	991	157	118
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.87	0.13	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	3150	5363	237	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.11	0.36	0.21	0.24	0.24	0.03	0.13	0.09	0.31	0.08	0.07
Crit Moves:	****				****			****			****	
Green Time:	17.7	17.2	59.1	32.1	31.5	31.5	24.2	16.8	34.6	41.9	34.6	66.7
Volume/Cap:	0.90	0.77	0.73	0.77	0.90	0.90	0.15	0.90	0.30	0.90	0.29	0.12
Uniform Del:	50.3	49.5	24.1	40.6	42.7	42.7	39.4	50.8	33.3	37.1	33.2	12.7
IncremntDel:	31.3	6.7	3.1	4.4	7.9	7.9	0.2	30.6	0.3	10.2	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	81.5	56.2	27.2	45.0	50.7	50.7	39.6	81.4	33.6	47.2	33.5	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.5	56.2	27.2	45.0	50.7	50.7	39.6	81.4	33.6	47.2	33.5	12.8
LOS by Move:	F	E+	C	D	D	D	D	F	C-	D	C-	B
HCM2kAvgQ:	10	8	20	15	19	19	2	12	5	19	4	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #61: Lawrence Expwy & Lakehaven Dr



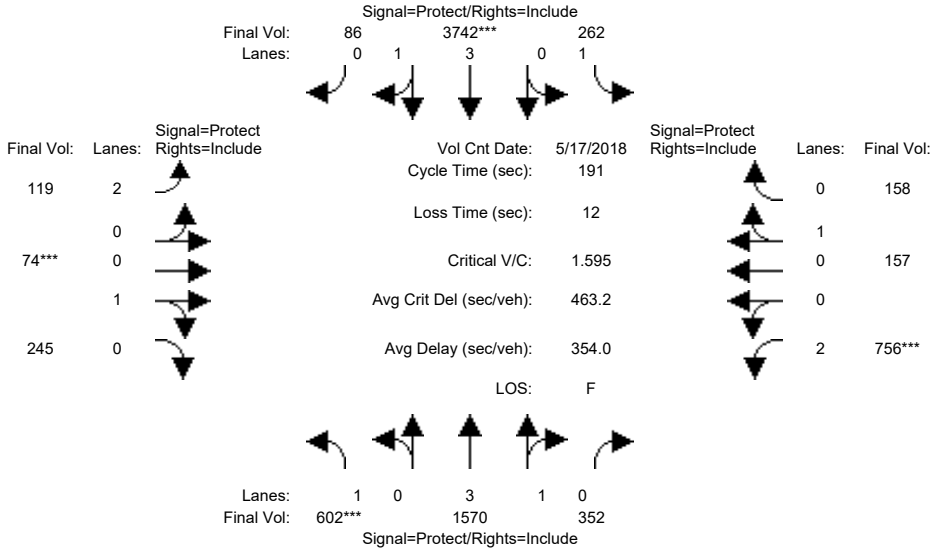
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	33	71	71	12	50	50	12	37	37	26	51	51
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	300	4183	739	142	1636	70	114	48	331	584	135	93
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	4183	739	142	1636	70	114	48	331	584	135	93
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	4183	739	142	1636	70	114	48	331	584	135	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	4183	739	142	1636	70	114	48	331	584	135	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	4183	739	142	1636	70	114	48	331	584	135	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	4183	739	142	1636	70	114	48	331	584	135	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.37	0.63	1.00	3.83	0.17	2.00	0.20	0.80	2.00	0.59	0.41
Final Sat.:	1750	6372	1126	1750	7192	308	1575	146	1005	2205	426	294
Capacity Analysis Module:												
Vol/Sat:	0.17	0.66	0.66	0.08	0.23	0.23	0.07	0.33	0.33	0.26	0.32	0.32
Crit Moves:		****		****				****		****		
Green Time:	33.1	71.4	71.4	11.7	49.5	49.5	11.5	36.7	36.7	26.3	51.5	51.5
Volume/Cap:	0.88	1.55	1.55	1.17	0.78	0.78	1.06	1.52	1.52	1.70	1.04	1.04
Uniform Del:	65.9	48.8	48.8	78.7	54.7	54.7	78.8	66.1	66.1	71.4	58.8	58.8
IncremntDel:	21.3	251	250.8	135.5	1.8	1.8	105.4	252	251.9	328.2	71.4	71.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.01	1.16	1.16	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.6	307	307.2	214.2	59.7	59.7	184.1	318	318.0	399.6	130	130.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.6	307	307.2	214.2	59.7	59.7	184.1	318	318.0	399.6	130	130.2
LOS by Move:	F	F	F	F	E+	E+	F	F	F	F	F	F
HCM2kAvgQ:	15	114	114	11	21	21	6	25	42	37	17	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #61: Lawrence Expwy & Lakehaven Dr



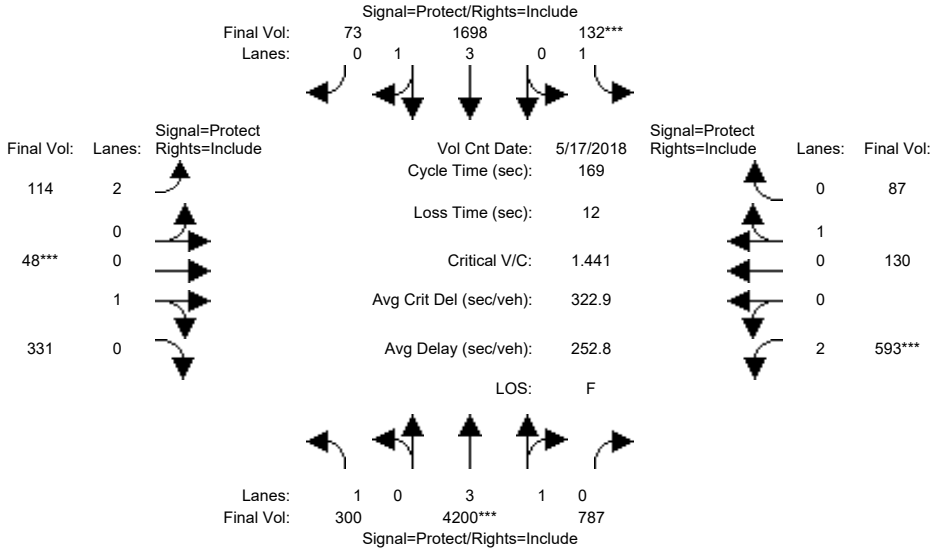
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	59	89	89	28	58	58	13	30	30	20	37	37
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 4:50 PM - 5:50 PM												
Base Vol:	602	1570	352	262	3742	86	119	74	245	756	157	158
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	602	1570	352	262	3742	86	119	74	245	756	157	158
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	602	1570	352	262	3742	86	119	74	245	756	157	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	602	1570	352	262	3742	86	119	74	245	756	157	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	602	1570	352	262	3742	86	119	74	245	756	157	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	602	1570	352	262	3742	86	119	74	245	756	157	158
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.24	0.76	1.00	3.91	0.09	2.00	0.35	0.65	2.00	0.50	0.50
Final Sat.:	1750	6124	1373	1750	7331	168	1575	249	824	2205	359	361
Capacity Analysis Module:												
Vol/Sat:	0.34	0.26	0.26	0.15	0.51	0.51	0.08	0.30	0.30	0.34	0.44	0.44
Crit Moves:	****				****			****		****		
Green Time:	58.6	89.1	89.1	27.7	57.6	57.6	12.9	30.3	30.3	20.2	37.6	37.6
Volume/Cap:	1.12	0.55	0.55	1.03	1.69	1.69	1.12	1.87	1.87	3.24	2.22	2.22
Uniform Del:	66.2	36.6	36.6	81.7	66.7	66.7	89.1	80.4	80.4	85.4	76.7	76.7
IncremntDel:	76.6	0.2	0.2	65.2	314	313.5	123.0	415	414.8	1019	572	572.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.98	0.81	0.81	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	141.5	30.0	30.0	146.8	384	384.5	212.1	495	495.2	1105	649	648.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	141.5	30.0	30.0	146.8	384	384.5	212.1	495	495.2	1105	649	648.8
LOS by Move:	F	C	C	F	F	F	F	F	F	F	F	F
HCM2kAvgQ:	48	16	16	17	101	101	7	27	46	65	42	42

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #61: Lawrence Expwy & Lakehaven Dr



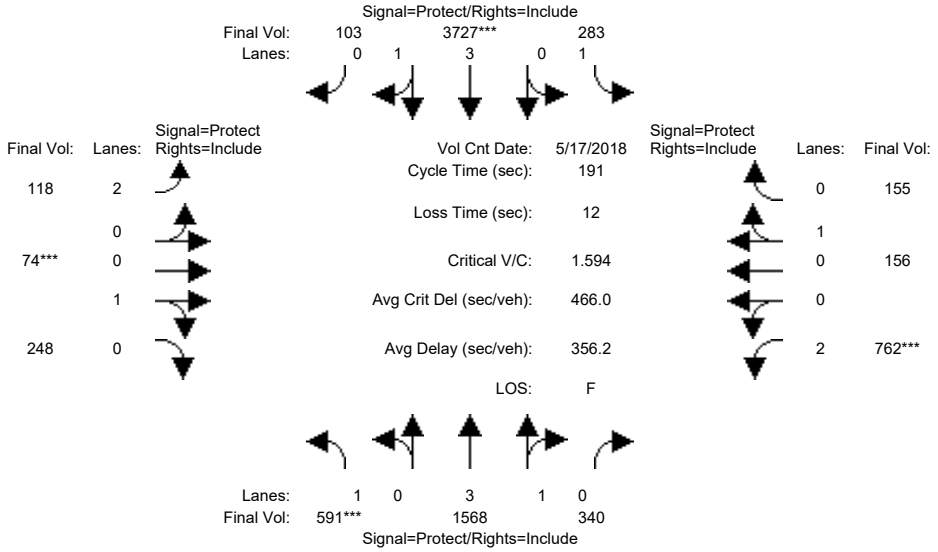
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	33	71	71	12	50	50	12	37	37	26	51	51
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	300	4200	787	132	1698	73	114	48	331	593	130	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	4200	787	132	1698	73	114	48	331	593	130	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	4200	787	132	1698	73	114	48	331	593	130	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	4200	787	132	1698	73	114	48	331	593	130	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	4200	787	132	1698	73	114	48	331	593	130	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	4200	787	132	1698	73	114	48	331	593	130	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.34	0.66	1.00	3.83	0.17	2.00	0.20	0.80	2.00	0.60	0.40
Final Sat.:	1750	6314	1183	1750	7190	309	1575	146	1005	2205	431	289
Capacity Analysis Module:												
Vol/Sat:	0.17	0.67	0.67	0.08	0.24	0.24	0.07	0.33	0.33	0.27	0.30	0.30
Crit Moves:		****		****				****		****		
Green Time:	33.1	71.4	71.4	11.7	49.5	49.5	11.5	36.7	36.7	26.3	51.5	51.5
Volume/Cap:	0.88	1.57	1.57	1.09	0.81	0.81	1.06	1.52	1.52	1.73	0.99	0.99
Uniform Del:	65.9	48.8	48.8	78.7	55.3	55.3	78.8	66.1	66.1	71.4	58.5	58.5
IncremntDel:	21.3	260	260.0	108.0	2.3	2.3	105.4	252	251.9	339.8	57.5	57.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.01	1.16	1.16	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.6	316	316.4	186.7	60.8	60.8	184.1	318	318.0	411.1	116	116.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.6	316	316.4	186.7	60.8	60.8	184.1	318	318.0	411.1	116	116.0
LOS by Move:	F	F	F	F	E	E	F	F	F	F	F	F
HCM2kAvgQ:	15	117	117	10	23	23	6	25	42	38	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #61: Lawrence Expwy & Lakehaven Dr



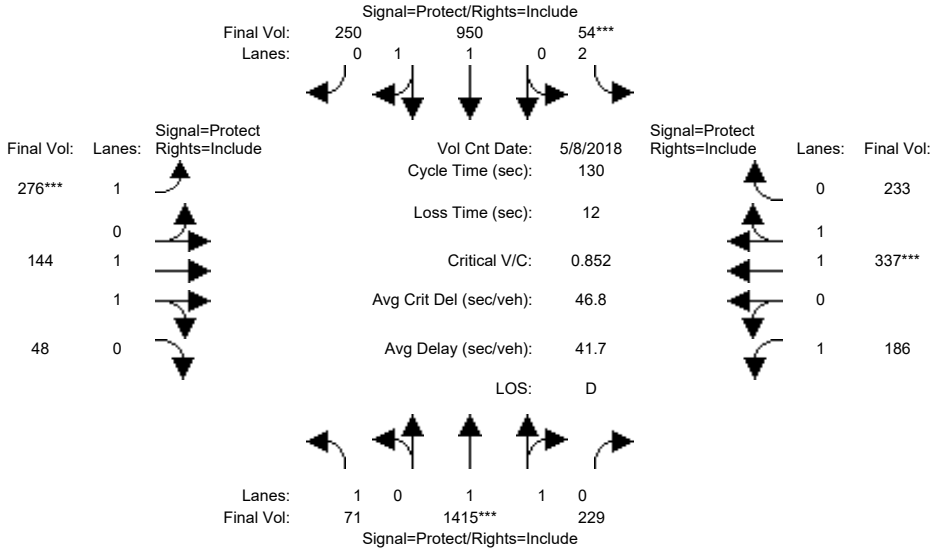
Street Name:	Lawrence Expwy						Lakehaven Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	59	89	89	28	58	58	13	30	30	20	37	37
Y+R:	6.1	6.2	6.2	5.6	6.2	6.2	5.5	6.0	6.0	5.6	6.1	6.1
Volume Module: >> Count Date: 17 May 2018 << 4:50 PM - 5:50 PM												
Base Vol:	591	1568	340	283	3727	103	118	74	248	762	156	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	591	1568	340	283	3727	103	118	74	248	762	156	155
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	591	1568	340	283	3727	103	118	74	248	762	156	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	591	1568	340	283	3727	103	118	74	248	762	156	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	591	1568	340	283	3727	103	118	74	248	762	156	155
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	591	1568	340	283	3727	103	118	74	248	762	156	155
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.92	0.99	0.95	0.41	0.38	0.66	0.58	0.38	0.38
Lanes:	1.00	3.26	0.74	1.00	3.89	0.11	2.00	0.34	0.66	2.00	0.50	0.50
Final Sat.:	1750	6161	1336	1750	7298	202	1575	247	828	2205	361	359
Capacity Analysis Module:												
Vol/Sat:	0.34	0.25	0.25	0.16	0.51	0.51	0.07	0.30	0.30	0.35	0.43	0.43
Crit Moves:	****				****			****		****		
Green Time:	58.6	89.1	89.1	27.7	57.6	57.6	12.9	30.3	30.3	20.2	37.6	37.6
Volume/Cap:	1.10	0.55	0.55	1.12	1.69	1.69	1.11	1.89	1.89	3.27	2.19	2.19
Uniform Del:	66.2	36.5	36.5	81.7	66.7	66.7	89.1	80.4	80.4	85.4	76.7	76.7
IncremntDel:	69.3	0.2	0.2	91.0	314	313.9	120.0	421	421.4	1031	560	559.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.98	0.81	0.81	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	134.2	29.9	29.9	172.6	385	384.9	209.0	502	501.7	1116	636	636.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	134.2	29.9	29.9	172.6	385	384.9	209.0	502	501.7	1116	636	636.3
LOS by Move:	F	C	C	F	F	F	F	F	F	F	F	F
HCM2kAvgQ:	46	16	16	21	101	101	7	27	47	66	41	41

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #62: Fair Oaks Ave & Evelyn Ave



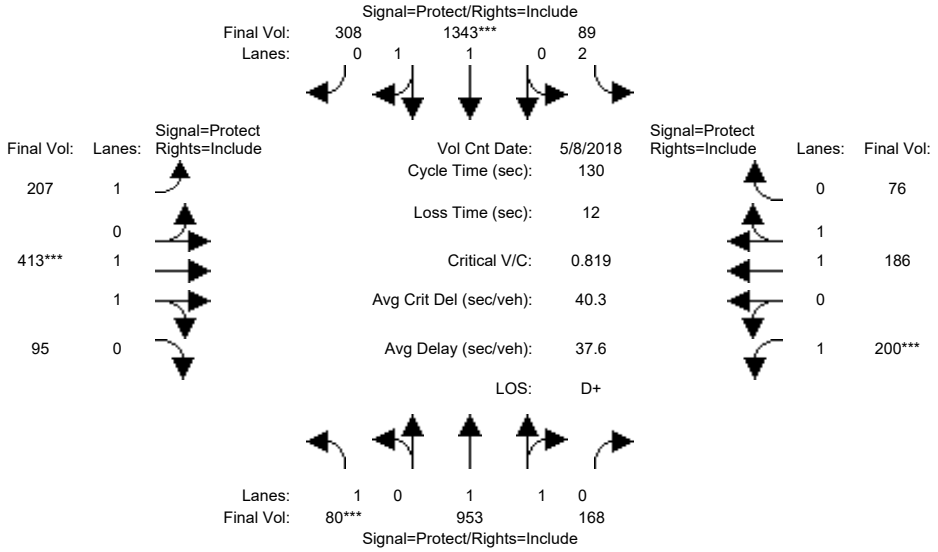
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	71	1415	229	54	950	250	276	144	48	186	337	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	1415	229	54	950	250	276	144	48	186	337	233
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	1415	229	54	950	250	276	144	48	186	337	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	1415	229	54	950	250	276	144	48	186	337	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1415	229	54	950	250	276	144	48	186	337	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1415	229	54	950	250	276	144	48	186	337	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.71	0.29	2.00	1.57	0.43	1.00	1.49	0.51	1.00	1.16	0.84
Final Sat.:	1750	3184	515	3150	2929	771	1750	2774	925	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.04	0.44	0.44	0.02	0.32	0.32	0.16	0.05	0.05	0.11	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	10.3	65.2	65.2	7.0	61.9	61.9	23.1	19.2	19.2	26.6	22.6	22.6
Volume/Cap:	0.51	0.89	0.89	0.32	0.68	0.68	0.89	0.35	0.35	0.52	0.89	0.89
Uniform Del:	57.5	29.0	29.0	59.2	26.4	26.4	52.1	49.8	49.8	46.1	52.4	52.4
IncremntDel:	3.2	5.5	5.5	1.1	1.1	1.1	24.7	0.4	0.4	1.4	13.9	13.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	60.7	34.6	34.6	60.3	27.5	27.5	76.8	50.2	50.2	47.4	66.4	66.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.7	34.6	34.6	60.3	27.5	27.5	76.8	50.2	50.2	47.4	66.4	66.4
LOS by Move:	E	C-	C-	E	C	C	E-	D	D	D	E	E
HCM2kAvgQ:	4	33	33	1	19	19	13	3	3	7	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #62: Fair Oaks Ave & Evelyn Ave



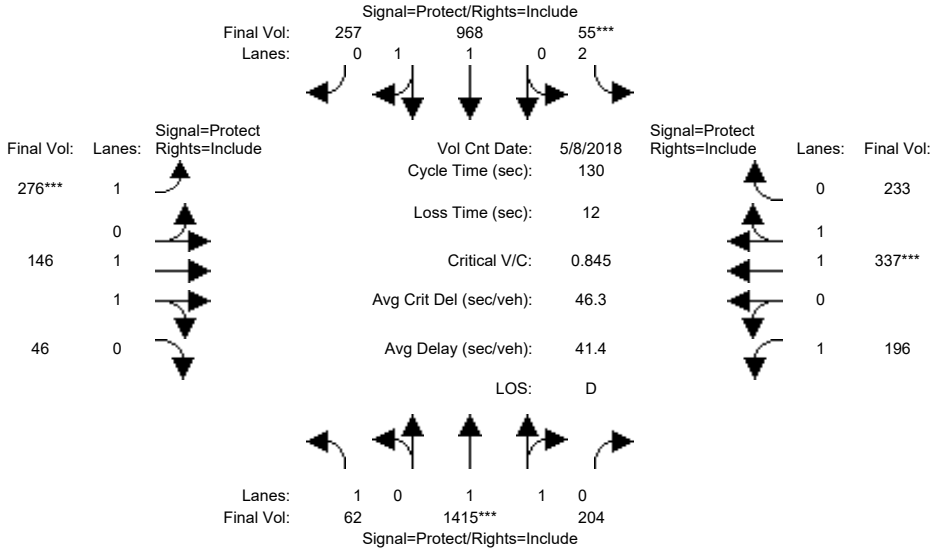
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	80	953	168	89	1343	308	207	413	95	200	186	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	953	168	89	1343	308	207	413	95	200	186	76
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	953	168	89	1343	308	207	413	95	200	186	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	953	168	89	1343	308	207	413	95	200	186	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	953	168	89	1343	308	207	413	95	200	186	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	953	168	89	1343	308	207	413	95	200	186	76
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.69	0.31	2.00	1.62	0.38	1.00	1.62	0.38	1.00	1.40	0.60
Final Sat.:	1750	3145	554	3150	3009	690	1750	3008	692	1750	2626	1073
Capacity Analysis Module:												
Vol/Sat:	0.05	0.30	0.30	0.03	0.45	0.45	0.12	0.14	0.14	0.11	0.07	0.07
Crit Moves:	****				****			****			****	
Green Time:	7.3	66.3	66.3	11.8	70.8	70.8	24.2	21.8	21.8	18.1	15.7	15.7
Volume/Cap:	0.82	0.59	0.59	0.31	0.82	0.82	0.64	0.82	0.82	0.82	0.59	0.59
Uniform Del:	60.7	22.4	22.4	55.3	24.3	24.3	48.8	52.2	52.2	54.3	54.0	54.0
IncremntDel:	39.9	0.5	0.5	0.6	2.8	2.8	4.1	8.5	8.5	19.2	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	100.6	22.9	22.9	55.9	27.1	27.1	52.9	60.7	60.7	73.6	56.0	56.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	100.6	22.9	22.9	55.9	27.1	27.1	52.9	60.7	60.7	73.6	56.0	56.0
LOS by Move:	F	C+	C+	E+	C	C	D-	E	E	E	E+	E+
HCM2kAvgQ:	5	16	16	2	28	28	8	10	10	9	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #62: Fair Oaks Ave & Evelyn Ave



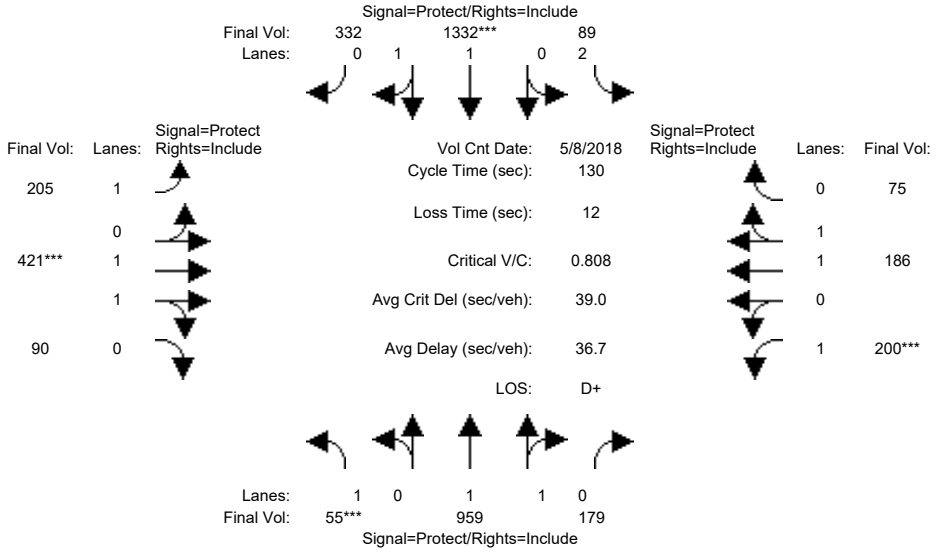
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	62	1415	204	55	968	257	276	146	46	196	337	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	1415	204	55	968	257	276	146	46	196	337	233
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1415	204	55	968	257	276	146	46	196	337	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	1415	204	55	968	257	276	146	46	196	337	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1415	204	55	968	257	276	146	46	196	337	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	1415	204	55	968	257	276	146	46	196	337	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.74	0.26	2.00	1.57	0.43	1.00	1.51	0.49	1.00	1.16	0.84
Final Sat.:	1750	3233	466	3150	2923	776	1750	2813	886	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.04	0.44	0.44	0.02	0.33	0.33	0.16	0.05	0.05	0.11	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	10.0	64.8	64.8	7.0	61.8	61.8	23.4	18.8	18.8	27.4	22.8	22.8
Volume/Cap:	0.46	0.88	0.88	0.32	0.70	0.70	0.88	0.36	0.36	0.53	0.88	0.88
Uniform Del:	57.4	29.1	29.1	59.2	26.8	26.8	51.9	50.2	50.2	45.6	52.2	52.2
IncremntDel:	2.5	5.2	5.2	1.1	1.2	1.2	23.2	0.4	0.4	1.5	13.0	13.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	59.8	34.2	34.2	60.3	28.0	28.0	75.2	50.6	50.6	47.1	65.2	65.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.8	34.2	34.2	60.3	28.0	28.0	75.2	50.6	50.6	47.1	65.2	65.2
LOS by Move:	E+	C-	C-	E	C	C	E-	D	D	D	E	E
HCM2kAvgQ:	3	32	32	1	20	20	13	3	3	7	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #62: Fair Oaks Ave & Evelyn Ave



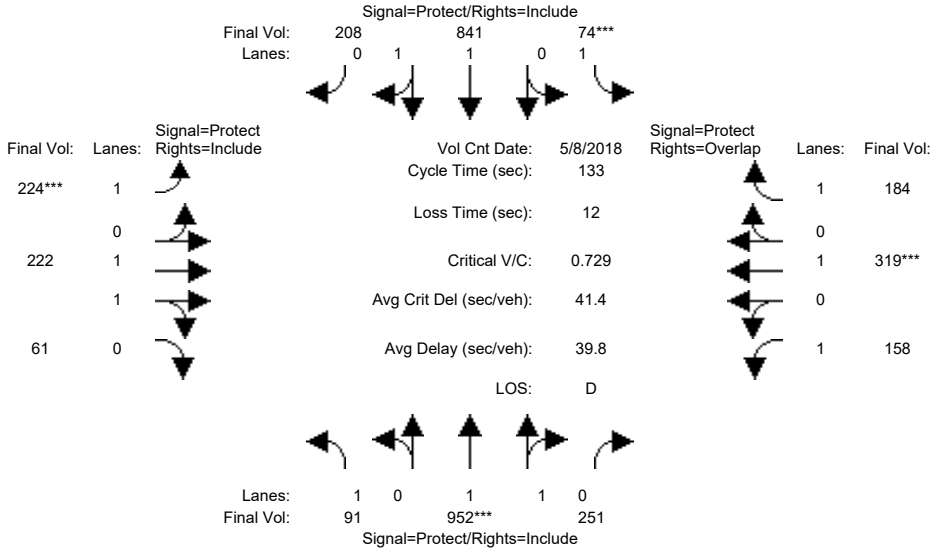
Street Name:	Fair Oaks Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	55	959	179	89	1332	332	205	421	90	200	186	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	959	179	89	1332	332	205	421	90	200	186	75
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	959	179	89	1332	332	205	421	90	200	186	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	959	179	89	1332	332	205	421	90	200	186	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	959	179	89	1332	332	205	421	90	200	186	75
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	959	179	89	1332	332	205	421	90	200	186	75
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.68	0.32	2.00	1.59	0.41	1.00	1.64	0.36	1.00	1.41	0.59
Final Sat.:	1750	3118	582	3150	2961	738	1750	3048	652	1750	2636	1063
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.31	0.03	0.45	0.45	0.12	0.14	0.14	0.11	0.07	0.07
Crit Moves:	****				****			****		****		
Green Time:	7.0	66.5	66.5	11.6	71.1	71.1	24.1	21.8	21.8	18.1	15.8	15.8
Volume/Cap:	0.58	0.60	0.60	0.32	0.82	0.82	0.63	0.82	0.82	0.82	0.58	0.58
Uniform Del:	60.1	22.4	22.4	55.5	24.3	24.3	48.9	52.2	52.2	54.4	54.0	54.0
IncremntDel:	9.0	0.5	0.5	0.6	2.8	2.8	4.0	8.7	8.7	19.7	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.1	23.0	23.0	56.1	27.1	27.1	52.9	60.9	60.9	74.1	55.9	55.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.1	23.0	23.0	56.1	27.1	27.1	52.9	60.9	60.9	74.1	55.9	55.9
LOS by Move:	E	C+	C+	E+	C	C	D-	E	E	E	E+	E+
HCM2kAvgQ:	3	16	16	2	28	28	8	10	10	9	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #63: Fair Oaks Ave & Old SF Rd



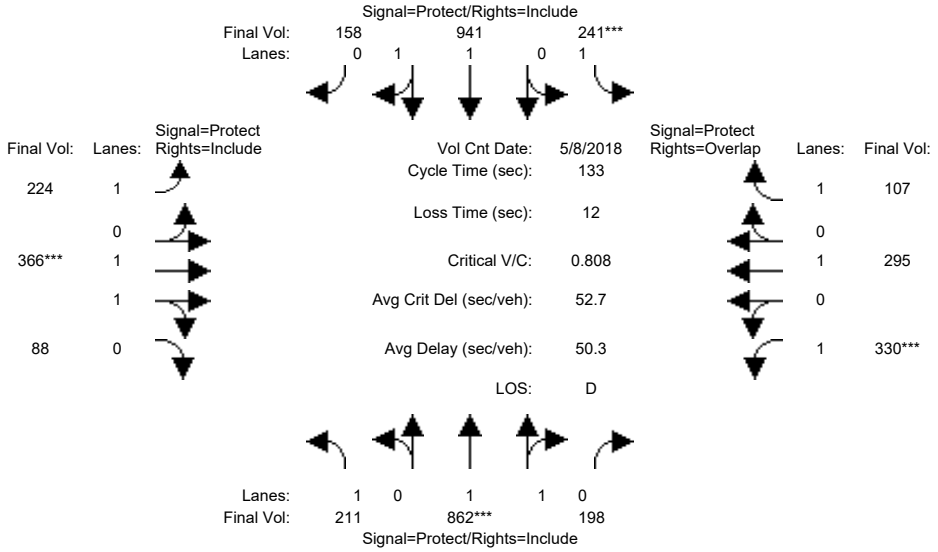
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	91	952	251	74	841	208	224	222	61	158	319	184
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	91	952	251	74	841	208	224	222	61	158	319	184
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	952	251	74	841	208	224	222	61	158	319	184
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	91	952	251	74	841	208	224	222	61	158	319	184
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	952	251	74	841	208	224	222	61	158	319	184
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	91	952	251	74	841	208	224	222	61	158	319	184
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.57	0.43	1.00	1.59	0.41	1.00	1.56	0.44	1.00	1.00	1.00
Final Sat.:	1750	2927	772	1750	2966	734	1750	2902	797	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.33	0.04	0.28	0.28	0.13	0.08	0.08	0.09	0.17	0.11
Crit Moves:		****		****			****				****	
Green Time:	10.5	59.3	59.3	7.7	56.5	56.5	23.3	24.8	24.8	29.2	30.6	38.3
Volume/Cap:	0.66	0.73	0.73	0.73	0.67	0.67	0.73	0.41	0.41	0.41	0.73	0.36
Uniform Del:	59.5	30.2	30.2	61.6	30.7	30.7	51.8	47.7	47.7	44.5	47.4	37.6
IncremntDel:	11.1	1.7	1.7	23.3	1.1	1.1	8.6	0.4	0.4	0.7	6.1	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	70.7	31.9	31.9	84.9	31.8	31.8	60.4	48.1	48.1	45.2	53.5	38.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.7	31.9	31.9	84.9	31.8	31.8	60.4	48.1	48.1	45.2	53.5	38.1
LOS by Move:	E	C	C	F	C	C	E	D	D	D	D-	D+
HCM2kAvgQ:	4	20	20	5	18	18	11	5	5	6	12	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #63: Fair Oaks Ave & Old SF Rd



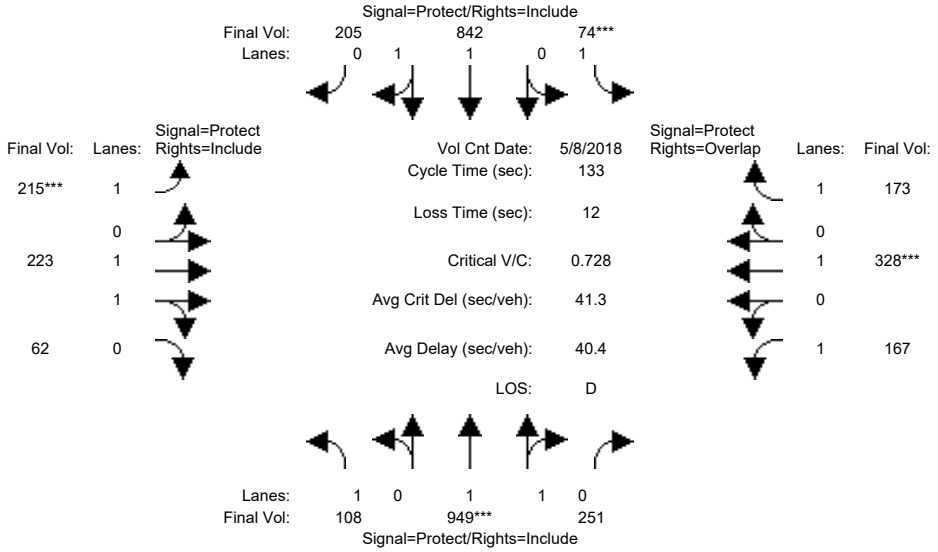
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	211	862	198	241	941	158	224	366	88	330	295	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	211	862	198	241	941	158	224	366	88	330	295	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	211	862	198	241	941	158	224	366	88	330	295	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	211	862	198	241	941	158	224	366	88	330	295	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	862	198	241	941	158	224	366	88	330	295	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	862	198	241	941	158	224	366	88	330	295	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.62	0.38	1.00	1.70	0.30	1.00	1.60	0.40	1.00	1.00	1.00
Final Sat.:	1750	3008	691	1750	3168	532	1750	2982	717	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.29	0.29	0.14	0.30	0.30	0.13	0.12	0.12	0.19	0.16	0.06
Crit Moves:		****		****				****		****		
Green Time:	20.1	47.1	47.1	22.7	49.6	49.6	23.1	20.2	20.2	31.0	28.1	50.7
Volume/Cap:	0.80	0.81	0.81	0.81	0.80	0.80	0.74	0.81	0.81	0.81	0.74	0.16
Uniform Del:	54.4	38.8	38.8	53.1	37.2	37.2	52.0	54.5	54.5	48.2	49.0	27.1
IncremntDel:	15.3	3.8	3.8	15.1	3.3	3.3	9.0	8.5	8.5	11.4	7.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.7	42.7	42.7	68.1	40.5	40.5	61.1	63.1	63.1	59.6	56.0	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.7	42.7	42.7	68.1	40.5	40.5	61.1	63.1	63.1	59.6	56.0	27.2
LOS by Move:	E	D	D	E	D	D	E	E	E	E+	E+	C
HCM2kAvgQ:	8	18	18	12	22	22	11	11	11	14	11	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #63: Fair Oaks Ave & Old SF Rd



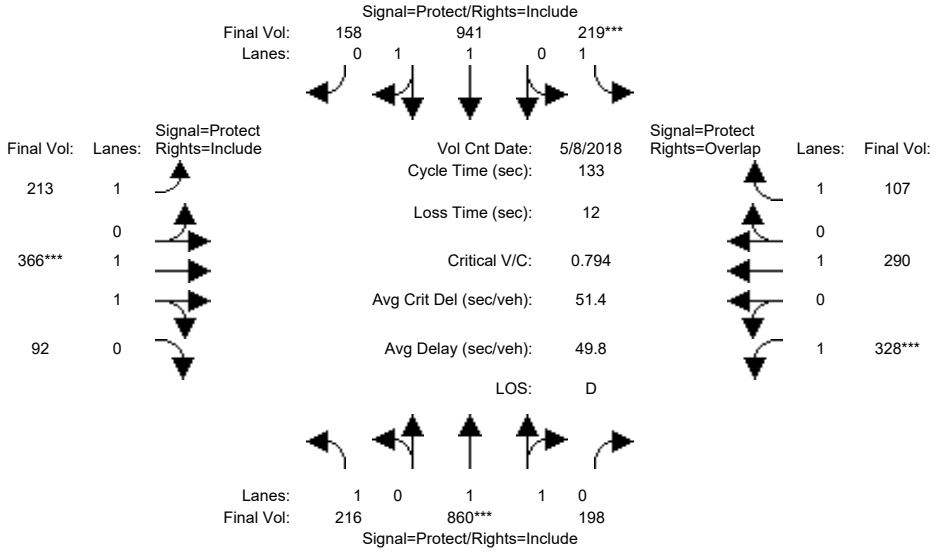
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	108	949	251	74	842	205	215	223	62	167	328	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	949	251	74	842	205	215	223	62	167	328	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	949	251	74	842	205	215	223	62	167	328	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	949	251	74	842	205	215	223	62	167	328	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	949	251	74	842	205	215	223	62	167	328	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	949	251	74	842	205	215	223	62	167	328	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.57	0.43	1.00	1.60	0.40	1.00	1.55	0.45	1.00	1.00	1.00
Final Sat.:	1750	2926	774	1750	2975	724	1750	2894	805	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.32	0.32	0.04	0.28	0.28	0.12	0.08	0.08	0.10	0.17	0.10
Crit Moves:		****		****			****				****	
Green Time:	12.0	59.3	59.3	7.7	55.0	55.0	22.5	24.1	24.1	29.9	31.5	39.3
Volume/Cap:	0.68	0.73	0.73	0.73	0.68	0.68	0.73	0.42	0.42	0.42	0.73	0.33
Uniform Del:	58.7	30.2	30.2	61.6	31.9	31.9	52.4	48.3	48.3	44.2	46.8	36.6
IncremntDel:	11.8	1.7	1.7	23.1	1.3	1.3	8.8	0.4	0.4	0.7	5.9	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	70.4	31.9	31.9	84.7	33.2	33.2	61.2	48.7	48.7	44.9	52.7	37.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.4	31.9	31.9	84.7	33.2	33.2	61.2	48.7	48.7	44.9	52.7	37.0
LOS by Move:	E	C	C	F	C-	C-	E	D	D	D	D-	D+
HCM2kAvgQ:	5	20	20	5	18	18	10	6	6	6	12	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #63: Fair Oaks Ave & Old SF Rd



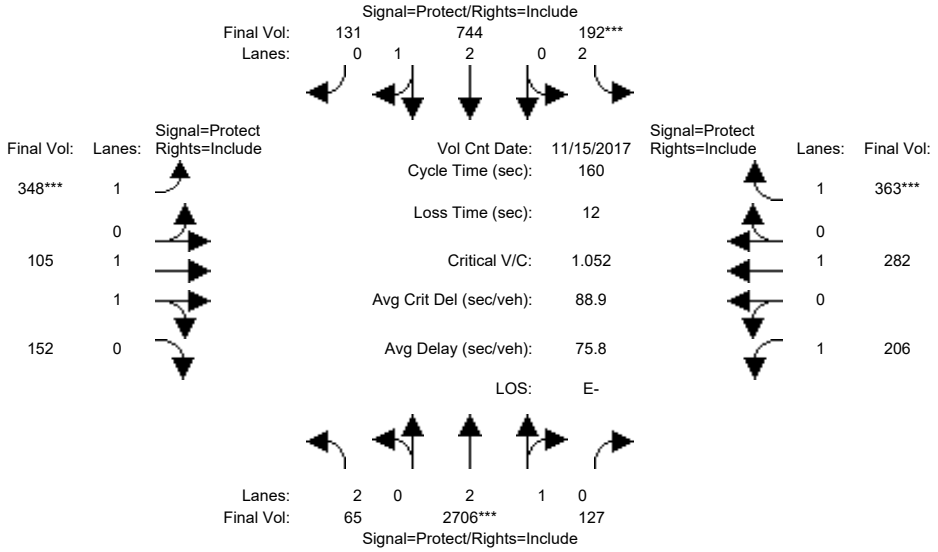
Street Name:	Fair Oaks Ave						Old SF Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	216	860	198	219	941	158	213	366	92	328	290	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	860	198	219	941	158	213	366	92	328	290	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	860	198	219	941	158	213	366	92	328	290	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	860	198	219	941	158	213	366	92	328	290	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	860	198	219	941	158	213	366	92	328	290	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	860	198	219	941	158	213	366	92	328	290	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92
Lanes:	1.00	1.62	0.38	1.00	1.70	0.30	1.00	1.59	0.41	1.00	1.00	1.00
Final Sat.:	1750	3007	692	1750	3168	532	1750	2956	743	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.29	0.29	0.13	0.30	0.30	0.12	0.12	0.12	0.19	0.15	0.06
Crit Moves:		****		****				****		****		
Green Time:	20.2	47.9	47.9	21.0	48.7	48.7	23.1	20.7	20.7	31.4	29.0	50.0
Volume/Cap:	0.81	0.79	0.79	0.79	0.81	0.81	0.70	0.79	0.79	0.79	0.70	0.16
Uniform Del:	54.6	38.1	38.1	53.9	38.0	38.0	51.7	54.1	54.1	47.8	48.0	27.6
IncremntDel:	17.0	3.4	3.4	14.6	3.8	3.8	7.1	7.5	7.5	10.2	5.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.6	41.5	41.5	68.5	41.9	41.9	58.7	61.5	61.5	57.9	53.2	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.6	41.5	41.5	68.5	41.9	41.9	58.7	61.5	61.5	57.9	53.2	27.7
LOS by Move:	E	D	D	E	D	D	E+	E	E	E+	D-	C
HCM2kAvgQ:	9	18	18	11	22	22	10	11	11	14	11	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #64: Wolfe Rd & Evelyn Ave



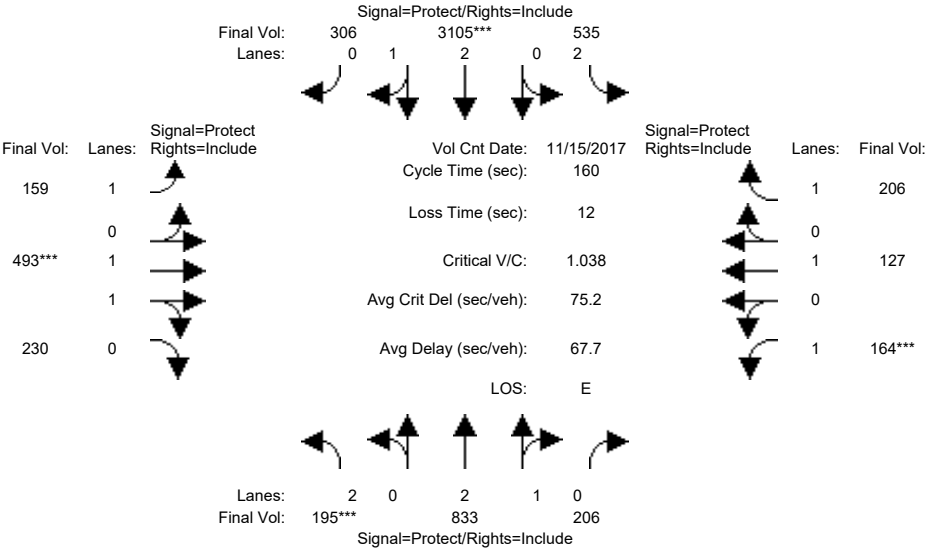
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	65	2706	127	192	744	131	348	105	152	206	282	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	2706	127	192	744	131	348	105	152	206	282	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	2706	127	192	744	131	348	105	152	206	282	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	2706	127	192	744	131	348	105	152	206	282	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	2706	127	192	744	131	348	105	152	206	282	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	2706	127	192	744	131	348	105	152	206	282	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.86	0.14	2.00	2.53	0.47	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5349	251	3150	4760	838	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.06	0.16	0.16	0.20	0.06	0.09	0.12	0.15	0.21
Crit Moves:		****		****			****					****
Green Time:	18.9	76.9	76.9	9.3	67.4	67.4	30.2	26.2	26.2	35.6	31.5	31.5
Volume/Cap:	0.18	1.05	1.05	1.05	0.37	0.37	1.05	0.34	0.53	0.53	0.75	1.05
Uniform Del:	63.6	41.5	41.5	75.4	31.8	31.8	64.9	59.2	61.2	54.9	60.6	64.2
IncremntDel:	0.2	33.0	33.0	81.0	0.1	0.1	63.8	0.3	1.1	1.4	8.4	62.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	63.8	74.5	74.5	156.4	31.9	31.9	128.7	59.5	62.3	56.2	68.9	127.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.8	74.5	74.5	156.4	31.9	31.9	128.7	59.5	62.3	56.2	68.9	127.0
LOS by Move:	E	E	E	F	C	C	F	E+	E	E+	E	F
HCM2kAvgQ:	2	50	50	7	9	9	23	4	7	10	14	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #64: Wolfe Rd & Evelyn Ave



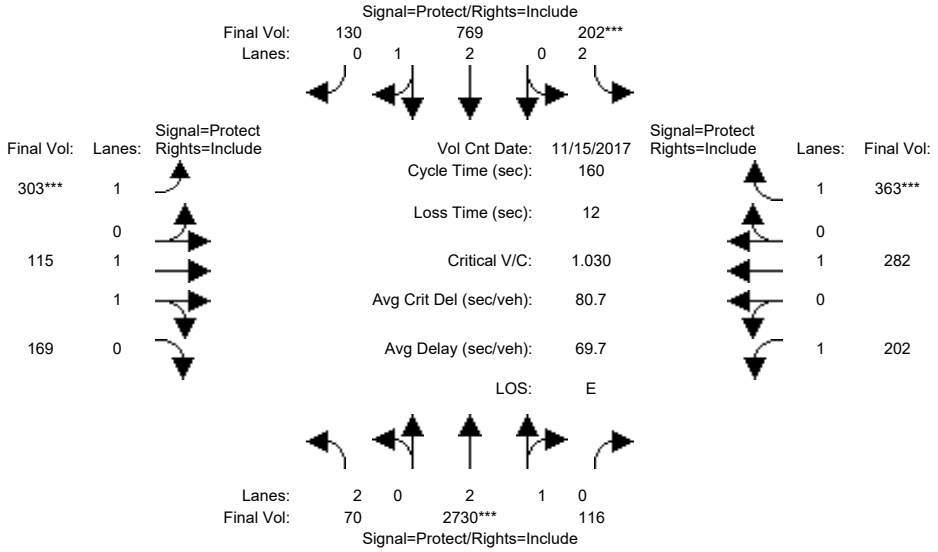
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	195	833	206	535	3105	306	159	493	230	164	127	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	833	206	535	3105	306	159	493	230	164	127	206
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	195	833	206	535	3105	306	159	493	230	164	127	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	833	206	535	3105	306	159	493	230	164	127	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	833	206	535	3105	306	159	493	230	164	127	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	833	206	535	3105	306	159	493	230	164	127	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	2.00	2.38	0.62	2.00	2.72	0.28	1.00	1.35	0.65	1.00	1.00	1.00
Final Sat.:	3150	4488	1110	3150	5097	502	1750	2522	1177	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.17	0.61	0.61	0.09	0.20	0.20	0.09	0.07	0.12
Crit Moves:	****				****			****			****	
Green Time:	9.5	54.0	54.0	49.4	93.9	93.9	19.4	30.1	30.1	14.4	25.2	25.2
Volume/Cap:	1.04	0.55	0.55	0.55	1.04	1.04	0.75	1.04	1.04	1.04	0.43	0.75
Uniform Del:	75.2	43.1	43.1	46.0	33.1	33.1	67.9	64.9	64.9	72.8	60.9	64.4
IncremntDel:	76.0	0.3	0.3	0.7	26.7	26.7	13.7	44.4	44.4	82.0	1.0	10.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	151.3	43.5	43.5	46.7	59.8	59.8	81.6	109	109.3	154.8	61.9	75.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	151.3	43.5	43.5	46.7	59.8	59.8	81.6	109	109.3	154.8	61.9	75.2
LOS by Move:	F	D	D	D	E+	E+	F	F	F	F	E	E-
HCM2kAvgQ:	7	13	13	12	59	59	8	21	21	13	6	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #64: Wolfe Rd & Evelyn Ave



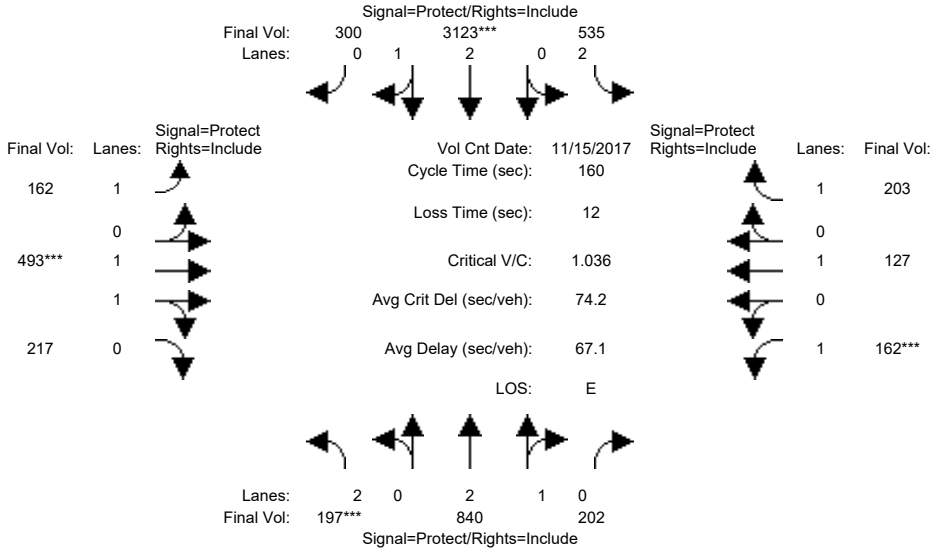
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	70	2730	116	202	769	130	303	115	169	202	282	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	2730	116	202	769	130	303	115	169	202	282	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	2730	116	202	769	130	303	115	169	202	282	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	2730	116	202	769	130	303	115	169	202	282	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	2730	116	202	769	130	303	115	169	202	282	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	2730	116	202	769	130	303	115	169	202	282	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.87	0.13	2.00	2.55	0.45	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5371	228	3150	4789	810	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.06	0.16	0.16	0.17	0.06	0.10	0.12	0.15	0.21
Crit Moves:		****			****			****				****
Green Time:	19.0	78.9	78.9	10.0	69.9	69.9	26.9	26.9	26.9	32.2	32.2	32.2
Volume/Cap:	0.19	1.03	1.03	1.03	0.37	0.37	1.03	0.36	0.57	0.57	0.74	1.03
Uniform Del:	63.5	40.5	40.5	75.0	30.2	30.2	66.6	58.9	61.3	57.7	59.9	63.9
IncremntDel:	0.2	25.5	25.5	72.4	0.1	0.1	60.5	0.3	1.6	2.3	7.4	55.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	63.8	66.0	66.0	147.4	30.3	30.3	127.0	59.2	62.9	60.0	67.3	119.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.8	66.0	66.0	147.4	30.3	30.3	127.0	59.2	62.9	60.0	67.3	119.8
LOS by Move:	E	E	E	F	C	C	F	E+	E	E	E	F
HCM2kAvgQ:	2	49	49	7	9	9	20	5	8	10	14	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #64: Wolfe Rd & Evelyn Ave



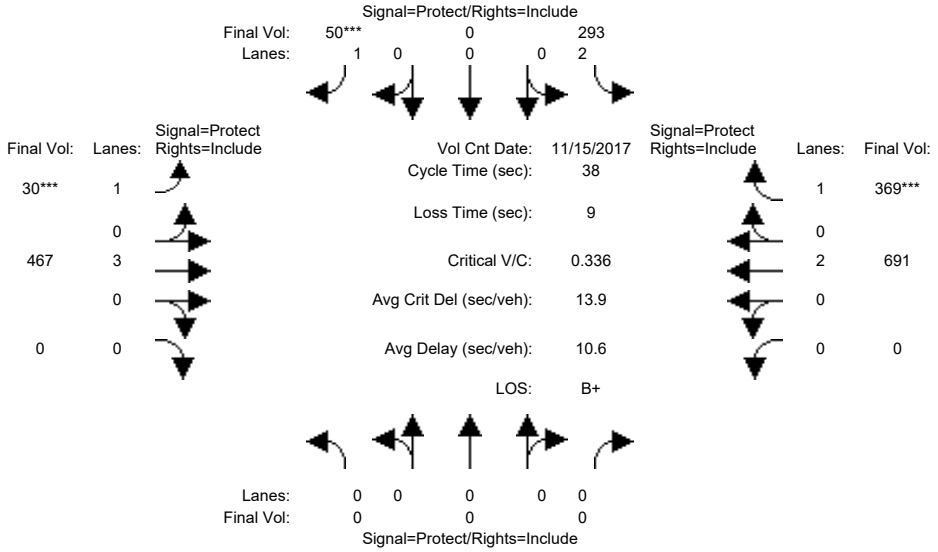
Street Name:	Wolfe Rd						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	197	840	202	535	3123	300	162	493	217	162	127	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	840	202	535	3123	300	162	493	217	162	127	203
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	840	202	535	3123	300	162	493	217	162	127	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	197	840	202	535	3123	300	162	493	217	162	127	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	840	202	535	3123	300	162	493	217	162	127	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	197	840	202	535	3123	300	162	493	217	162	127	203
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	2.00	2.40	0.60	2.00	2.73	0.27	1.00	1.37	0.63	1.00	1.00	1.00
Final Sat.:	3150	4513	1085	3150	5109	491	1750	2568	1130	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.17	0.61	0.61	0.09	0.19	0.19	0.09	0.07	0.12
Crit Moves:	****				****			****			****	
Green Time:	9.7	54.4	54.4	49.7	94.4	94.4	19.5	29.6	29.6	14.3	24.4	24.4
Volume/Cap:	1.04	0.55	0.55	0.55	1.04	1.04	0.76	1.04	1.04	1.04	0.44	0.76
Uniform Del:	75.2	42.8	42.8	45.8	32.8	32.8	68.0	65.2	65.2	72.9	61.5	65.0
IncremntDel:	75.1	0.3	0.3	0.7	26.0	26.0	14.6	44.0	44.0	81.8	1.1	11.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	150.2	43.1	43.1	46.5	58.8	58.8	82.6	109	109.2	154.7	62.6	76.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	150.2	43.1	43.1	46.5	58.8	58.8	82.6	109	109.2	154.7	62.6	76.9
LOS by Move:	F	D	D	D	E+	E+	F	F	F	F	E	E-
HCM2kAvgQ:	7	13	13	12	59	59	8	20	20	13	6	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #65: Evelyn Ave & Reed Ave



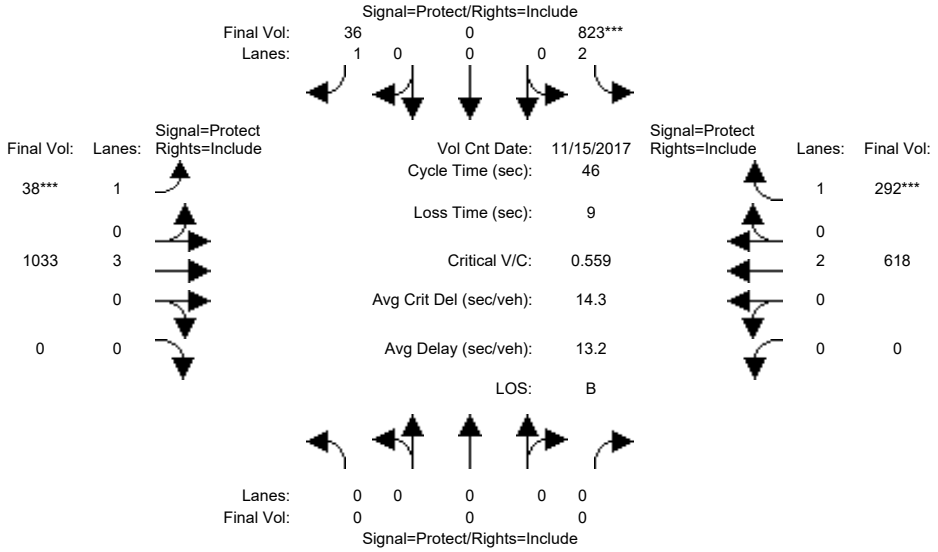
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	10	10	7	10	10	0	10	10
Y+R:	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	293	0	50	30	467	0	0	691	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	293	0	50	30	467	0	0	691	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	293	0	50	30	467	0	0	691	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	293	0	50	30	467	0	0	691	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	293	0	50	30	467	0	0	691	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	293	0	50	30	467	0	0	691	369
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.03	0.02	0.08	0.00	0.00	0.18	0.21
Crit Moves:						****	****					****
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	7.0	19.0	0.0	0.0	12.0	12.0
Volume/Cap:	0.00	0.00	0.00	0.35	0.00	0.11	0.09	0.16	0.00	0.00	0.58	0.67
Uniform Del:	0.0	0.0	0.0	11.4	0.0	10.6	12.9	5.2	0.0	0.0	10.9	11.3
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.7	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.6	0.0	10.7	13.0	5.2	0.0	0.0	11.6	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.6	0.0	10.7	13.0	5.2	0.0	0.0	11.6	14.4
LOS by Move:	A	A	A	B+	A	B+	B	A	A	A	B+	B
HCM2kAvgQ:	0	0	0	2	0	1	0	1	0	0	3	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #65: Evelyn Ave & Reed Ave



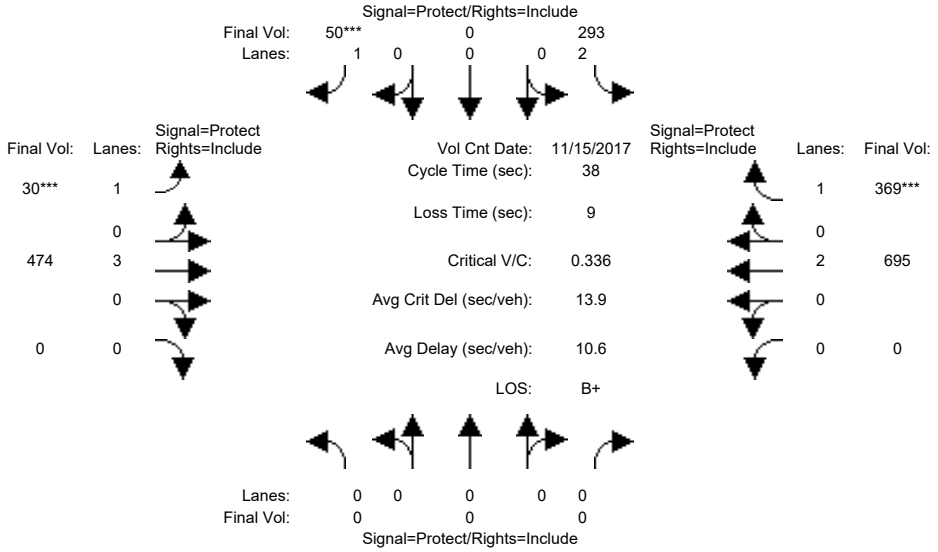
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	0	10	7	10	0	0	10	10
Y+R:	0.0	0.0	0.0	4.0	0.0	4.0	4.0	4.0	0.0	0.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	823	0	36	38	1033	0	0	618	292
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	823	0	36	38	1033	0	0	618	292
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	823	0	36	38	1033	0	0	618	292
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	823	0	36	38	1033	0	0	618	292
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	823	0	36	38	1033	0	0	618	292
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	823	0	36	38	1033	0	0	618	292
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.02	0.02	0.18	0.00	0.00	0.16	0.17
Crit Moves:				****			****					****
Green Time:	0.0	0.0	0.0	18.3	0.0	18.3	7.0	18.7	0.0	0.0	11.7	11.7
Volume/Cap:	0.00	0.00	0.00	0.66	0.00	0.05	0.14	0.45	0.00	0.00	0.64	0.66
Uniform Del:	0.0	0.0	0.0	11.3	0.0	8.5	16.9	9.9	0.0	0.0	15.3	15.4
IncremntDel:	0.0	0.0	0.0	1.3	0.0	0.0	0.2	0.1	0.0	0.0	1.5	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	12.6	0.0	8.5	17.1	10.0	0.0	0.0	16.7	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.6	0.0	8.5	17.1	10.0	0.0	0.0	16.7	18.9
LOS by Move:	A	A	A	B	A	A	B	B+	A	A	B	B-
HCM2kAvgQ:	0	0	0	7	0	0	0	3	0	0	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #65: Evelyn Ave & Reed Ave



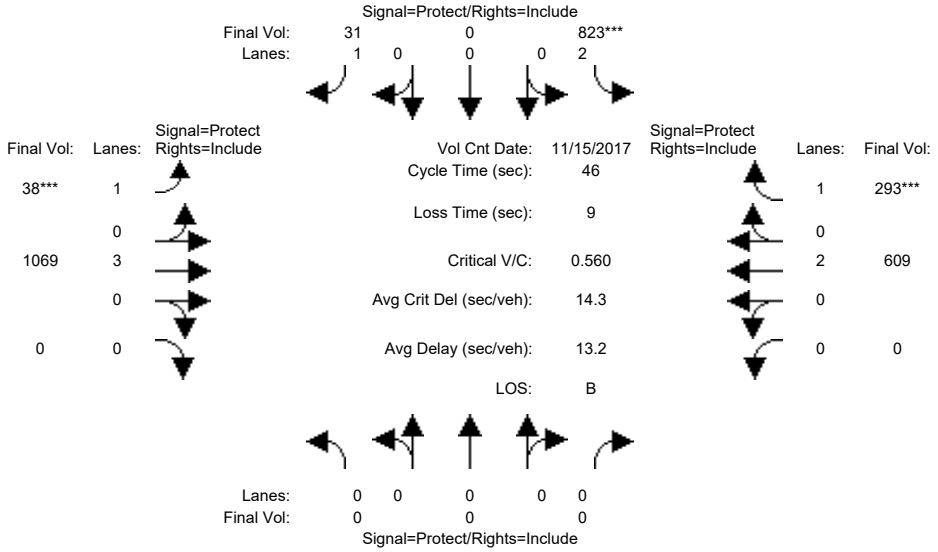
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	10	10	7	10	10	0	10	10
Y+R:	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	293	0	50	30	474	0	0	695	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	293	0	50	30	474	0	0	695	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	293	0	50	30	474	0	0	695	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	293	0	50	30	474	0	0	695	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	293	0	50	30	474	0	0	695	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	293	0	50	30	474	0	0	695	369
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.03	0.02	0.08	0.00	0.00	0.18	0.21
Crit Moves:						****	****					****
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	7.0	19.0	0.0	0.0	12.0	12.0
Volume/Cap:	0.00	0.00	0.00	0.35	0.00	0.11	0.09	0.17	0.00	0.00	0.58	0.67
Uniform Del:	0.0	0.0	0.0	11.4	0.0	10.6	12.9	5.2	0.0	0.0	10.9	11.3
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.7	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	11.6	0.0	10.7	13.0	5.2	0.0	0.0	11.6	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.6	0.0	10.7	13.0	5.2	0.0	0.0	11.6	14.4
LOS by Move:	A	A	A	B+	A	B+	B	A	A	A	B+	B
HCM2kAvgQ:	0	0	0	2	0	1	0	1	0	0	3	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #65: Evelyn Ave & Reed Ave



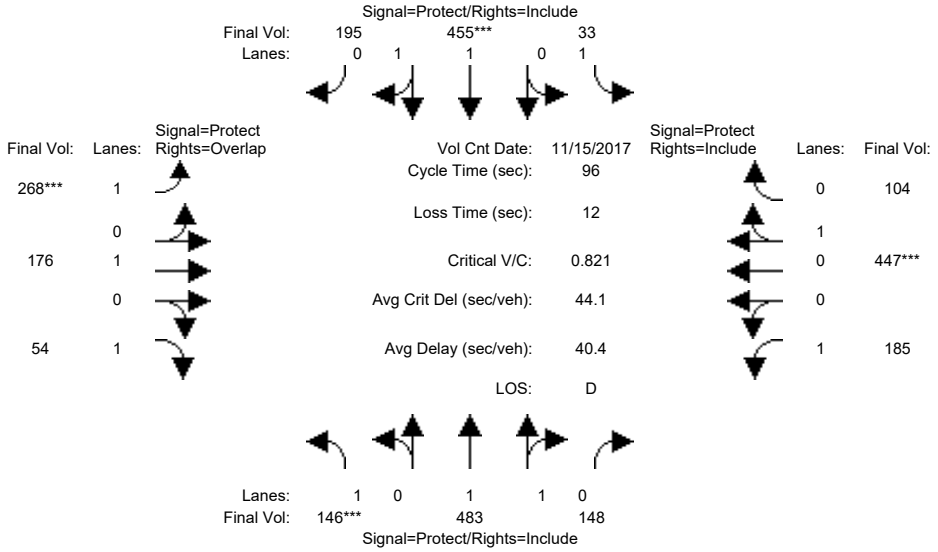
Street Name:	Evelyn Ave						Reed Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	7	0	10	7	10	0	0	10	10
Y+R:	0.0	0.0	0.0	4.0	0.0	4.0	4.0	4.0	0.0	0.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	823	0	31	38	1069	0	0	609	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	823	0	31	38	1069	0	0	609	293
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	823	0	31	38	1069	0	0	609	293
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	823	0	31	38	1069	0	0	609	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	823	0	31	38	1069	0	0	609	293
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	823	0	31	38	1069	0	0	609	293
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.02	0.02	0.19	0.00	0.00	0.16	0.17
Crit Moves:				****			****					****
Green Time:	0.0	0.0	0.0	18.3	0.0	18.3	7.0	18.7	0.0	0.0	11.7	11.7
Volume/Cap:	0.00	0.00	0.00	0.66	0.00	0.04	0.14	0.46	0.00	0.00	0.63	0.66
Uniform Del:	0.0	0.0	0.0	11.3	0.0	8.5	16.9	10.0	0.0	0.0	15.2	15.3
IncremntDel:	0.0	0.0	0.0	1.3	0.0	0.0	0.2	0.1	0.0	0.0	1.3	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	12.6	0.0	8.5	17.1	10.1	0.0	0.0	16.5	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.6	0.0	8.5	17.1	10.1	0.0	0.0	16.5	18.9
LOS by Move:	A	A	A	B	A	A	B	B+	A	A	B	B-
HCM2kAvgQ:	0	0	0	7	0	0	0	4	0	0	3	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #66: Sunnyvale Ave & Evelyn Ave



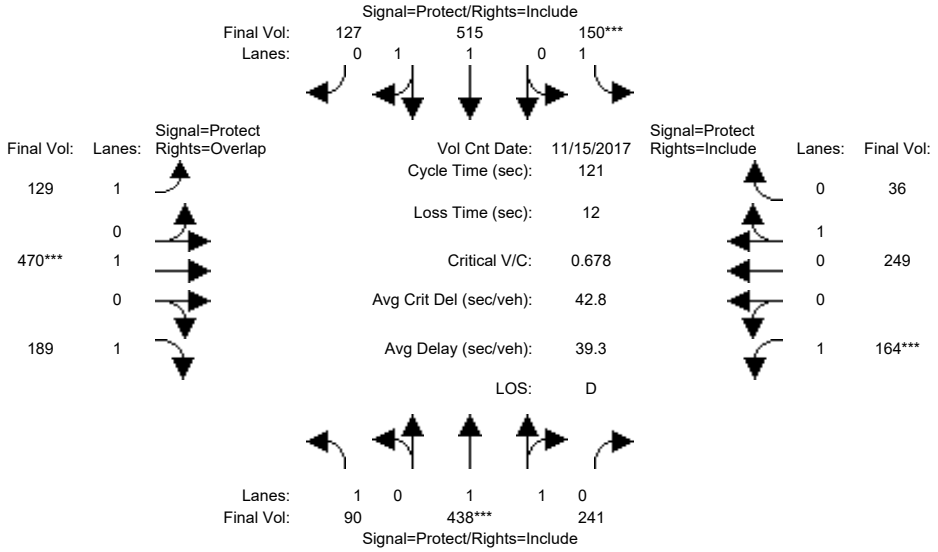
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	146	483	148	33	455	195	268	176	54	185	447	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	483	148	33	455	195	268	176	54	185	447	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	483	148	33	455	195	268	176	54	185	447	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	483	148	33	455	195	268	176	54	185	447	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	483	148	33	455	195	268	176	54	185	447	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	483	148	33	455	195	268	176	54	185	447	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.52	0.48	1.00	1.38	0.62	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1750	2832	868	1750	2589	1110	1750	1900	1750	1750	1460	340
Capacity Analysis Module:												
Vol/Sat:	0.08	0.17	0.17	0.02	0.18	0.18	0.15	0.09	0.03	0.11	0.31	0.31
Crit Moves:	****				****		****				****	
Green Time:	9.8	21.2	21.2	9.1	20.5	20.5	17.9	26.7	36.4	27.0	35.8	35.8
Volume/Cap:	0.82	0.77	0.77	0.20	0.82	0.82	0.82	0.33	0.08	0.38	0.82	0.82
Uniform Del:	42.3	35.1	35.1	40.1	36.0	36.0	37.5	27.6	19.1	27.7	27.2	27.2
IncremntDel:	25.2	4.6	4.6	0.6	6.9	6.9	15.2	0.4	0.1	0.5	8.0	8.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.5	39.7	39.7	40.7	42.8	42.8	52.7	28.0	19.1	28.2	35.2	35.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.5	39.7	39.7	40.7	42.8	42.8	52.7	28.0	19.1	28.2	35.2	35.2
LOS by Move:	E	D	D	D	D	D	D-	C	B-	C	D+	D+
HCM2kAvgQ:	7	11	11	1	12	12	9	4	1	4	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #66: Sunnyvale Ave & Evelyn Ave



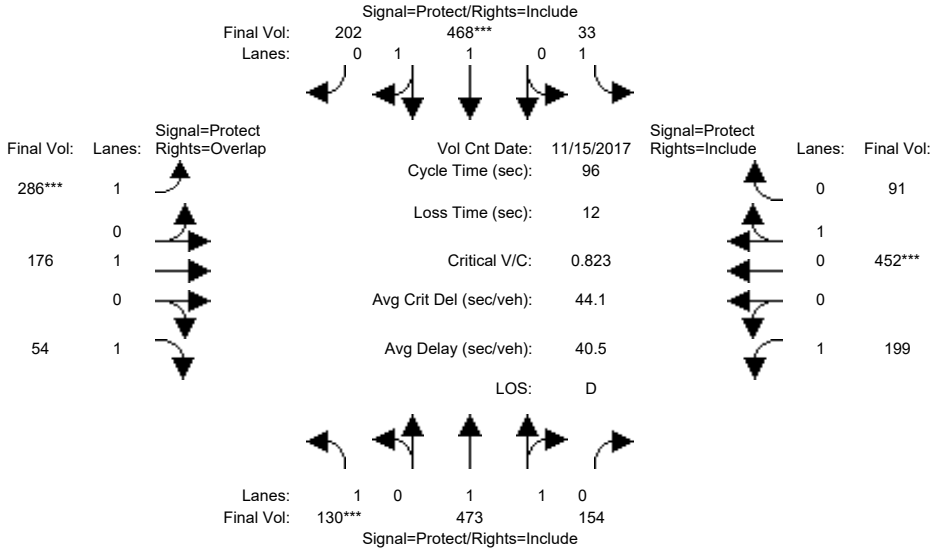
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	90	438	241	150	515	127	129	470	189	164	249	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	438	241	150	515	127	129	470	189	164	249	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	438	241	150	515	127	129	470	189	164	249	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	438	241	150	515	127	129	470	189	164	249	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	438	241	150	515	127	129	470	189	164	249	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	438	241	150	515	127	129	470	189	164	249	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.27	0.73	1.00	1.59	0.41	1.00	1.00	1.00	1.00	0.87	0.13
Final Sat.:	1750	2386	1313	1750	2968	732	1750	1900	1750	1750	1573	227
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.18	0.09	0.17	0.17	0.07	0.25	0.11	0.09	0.16	0.16
Crit Moves:		****		****				****		****		
Green Time:	12.0	32.8	32.8	15.3	36.1	36.1	19.3	44.2	56.2	16.7	41.6	41.6
Volume/Cap:	0.52	0.68	0.68	0.68	0.58	0.58	0.46	0.68	0.23	0.68	0.46	0.46
Uniform Del:	51.7	39.4	39.4	50.5	36.1	36.1	46.1	32.4	19.5	49.6	31.0	31.0
IncremntDel:	2.7	1.9	1.9	8.2	0.8	0.8	1.2	2.7	0.1	7.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.5	41.3	41.3	58.6	36.9	36.9	47.3	35.1	19.6	57.1	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	41.3	41.3	58.6	36.9	36.9	47.3	35.1	19.6	57.1	31.5	31.5
LOS by Move:	D-	D	D	E+	D+	D+	D	D+	B-	E+	C	C
HCM2kAvgQ:	4	12	12	7	11	11	5	14	4	6	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #66: Sunnyvale Ave & Evelyn Ave



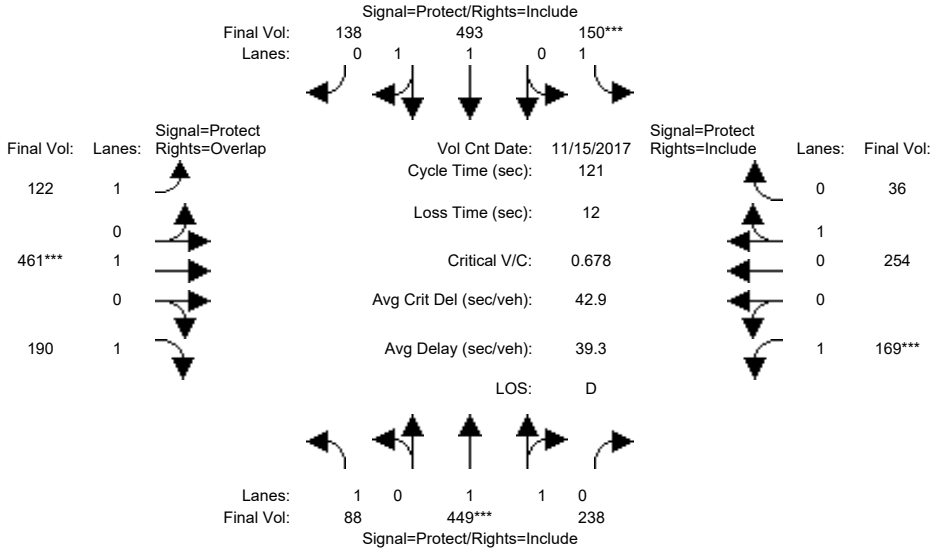
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	130	473	154	33	468	202	286	176	54	199	452	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	130	473	154	33	468	202	286	176	54	199	452	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	130	473	154	33	468	202	286	176	54	199	452	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	130	473	154	33	468	202	286	176	54	199	452	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	473	154	33	468	202	286	176	54	199	452	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	130	473	154	33	468	202	286	176	54	199	452	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.50	0.50	1.00	1.38	0.62	1.00	1.00	1.00	1.00	0.83	0.17
Final Sat.:	1750	2791	909	1750	2584	1115	1750	1900	1750	1750	1498	302
Capacity Analysis Module:												
Vol/Sat:	0.07	0.17	0.17	0.02	0.18	0.18	0.16	0.09	0.03	0.11	0.30	0.30
Crit Moves:	****				****		****				****	
Green Time:	8.7	20.8	20.8	9.0	21.1	21.1	19.1	25.9	34.6	28.3	35.2	35.2
Volume/Cap:	0.82	0.78	0.78	0.20	0.82	0.82	0.82	0.34	0.09	0.39	0.82	0.82
Uniform Del:	42.9	35.4	35.4	40.2	35.7	35.7	36.9	28.2	20.3	26.9	27.6	27.6
IncremntDel:	28.2	5.0	5.0	0.6	6.8	6.8	14.6	0.4	0.1	0.5	8.3	8.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.1	40.4	40.4	40.8	42.5	42.5	51.5	28.6	20.3	27.4	35.9	35.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.1	40.4	40.4	40.8	42.5	42.5	51.5	28.6	20.3	27.4	35.9	35.9
LOS by Move:	E	D	D	D	D	D	D-	C	C+	C	D+	D+
HCM2kAvgQ:	6	11	11	1	12	12	9	4	1	5	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #66: Sunnyvale Ave & Evelyn Ave



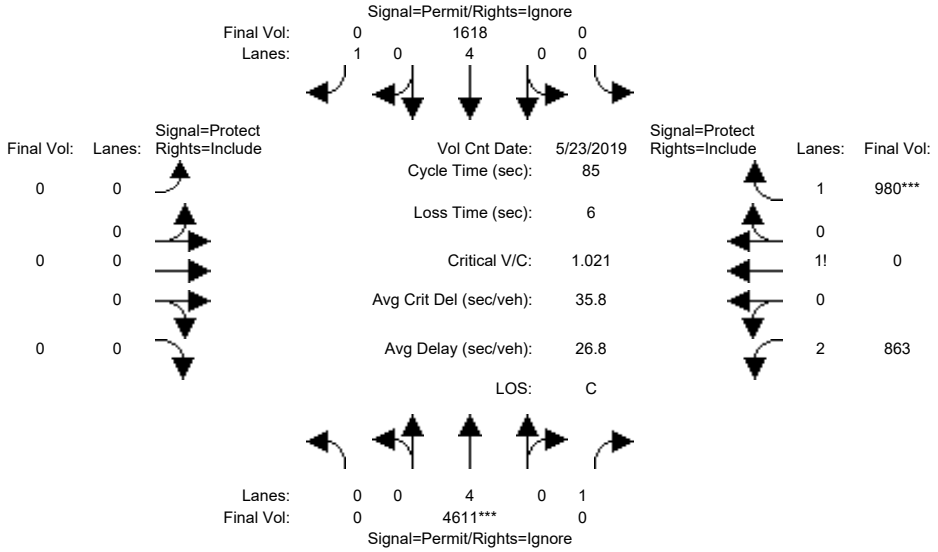
Street Name:	Sunnyvale Ave						Evelyn Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	88	449	238	150	493	138	122	461	190	169	254	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	449	238	150	493	138	122	461	190	169	254	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	449	238	150	493	138	122	461	190	169	254	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	449	238	150	493	138	122	461	190	169	254	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	449	238	150	493	138	122	461	190	169	254	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	449	238	150	493	138	122	461	190	169	254	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.29	0.71	1.00	1.55	0.45	1.00	1.00	1.00	1.00	0.88	0.12
Final Sat.:	1750	2417	1281	1750	2890	809	1750	1900	1750	1750	1577	223
Capacity Analysis Module:												
Vol/Sat:	0.05	0.19	0.19	0.09	0.17	0.17	0.07	0.24	0.11	0.10	0.16	0.16
Crit Moves:		****		****				****		****		
Green Time:	12.3	33.2	33.2	15.3	36.2	36.2	18.3	43.3	55.6	17.2	42.3	42.3
Volume/Cap:	0.50	0.68	0.68	0.68	0.57	0.57	0.46	0.68	0.24	0.68	0.46	0.46
Uniform Del:	51.4	39.2	39.2	50.5	35.8	35.8	46.9	32.9	19.8	49.2	30.5	30.5
IncremntDel:	2.2	1.9	1.9	8.2	0.7	0.7	1.3	2.8	0.2	7.3	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.6	41.0	41.0	58.7	36.6	36.6	48.1	35.7	20.0	56.5	31.1	31.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	41.0	41.0	58.7	36.6	36.6	48.1	35.7	20.0	56.5	31.1	31.1
LOS by Move:	D-	D	D	E+	D+	D+	D	D+	B-	E+	C	C
HCM2kAvgQ:	4	13	13	7	10	10	4	14	4	6	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



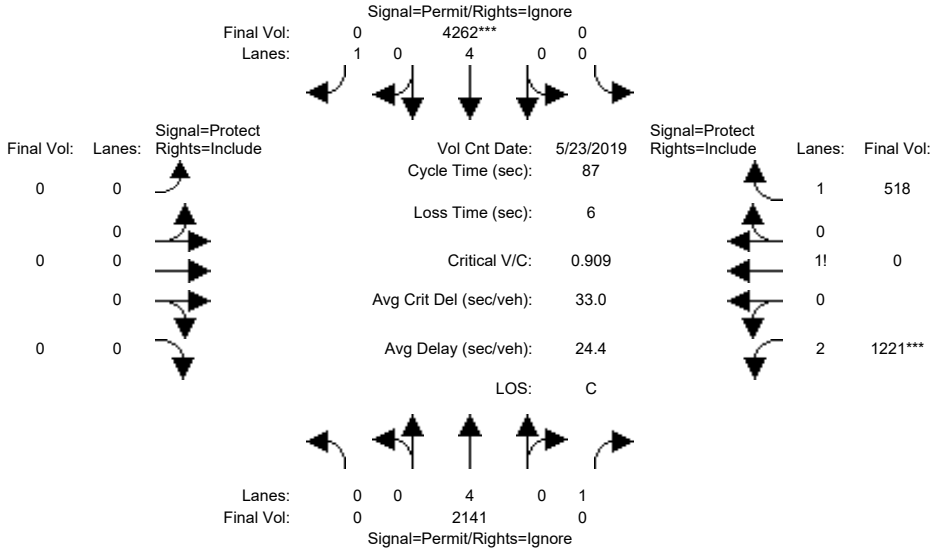
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	4611	484	0	1618	580	0	0	0	863	0	980
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4611	484	0	1618	580	0	0	0	863	0	980
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	4611	484	0	1618	580	0	0	0	863	0	980
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	4611	0	0	1618	0	0	0	0	863	0	980
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4611	0	0	1618	0	0	0	0	863	0	980
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4611	0	0	1618	0	0	0	0	863	0	980
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.81	1.00	0.95
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.41	0.00	1.59
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3702	0	2867
Capacity Analysis Module:												
Vol/Sat:	0.00	0.61	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.23	0.00	0.34
Crit Moves:		****										****
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	28.0
Volume/Cap:	0.00	1.01	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.87	0.00	1.04
Uniform Del:	0.0	17.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	29.7	0.0	28.5
IncremntDel:	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	31.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	25.9	0.0	0.0	5.0	0.0	0.0	0.0	0.0	34.0	0.0	60.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.9	0.0	0.0	5.0	0.0	0.0	0.0	0.0	34.0	0.0	60.3
LOS by Move:	A	C	A	A	A	A	A	A	A	C-	A	E
HCM2kAvgQ:	0	40	0	0	3	0	0	0	0	14	0	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



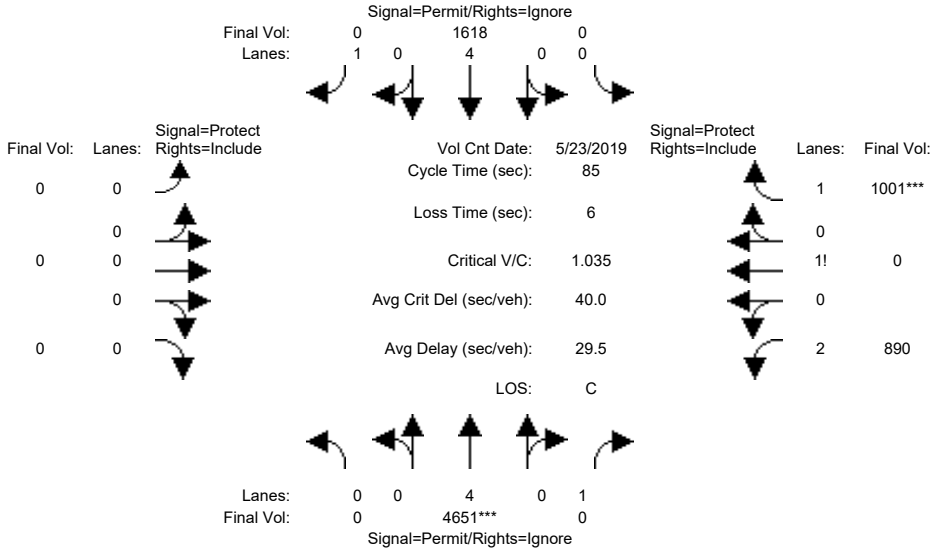
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2141	418	0	4262	358	0	0	0	1221	0	518
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2141	418	0	4262	358	0	0	0	1221	0	518
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2141	418	0	4262	358	0	0	0	1221	0	518
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2141	0	0	4262	0	0	0	0	1221	0	518
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2141	0	0	4262	0	0	0	0	1221	0	518
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2141	0	0	4262	0	0	0	0	1221	0	518
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.86	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.63	0.00	1.37
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	4272	0	2400
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.29	0.00	0.22
Crit Moves:					****					****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.46	0.00	0.00	0.92	0.00	0.00	0.00	0.00	1.10	0.00	0.83
Uniform Del:	0.0	9.1	0.0	0.0	14.9	0.0	0.0	0.0	0.0	32.2	0.0	30.3
IncremntDel:	0.0	0.1	0.0	0.0	3.4	0.0	0.0	0.0	0.0	53.4	0.0	2.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	85.6	0.0	33.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	85.6	0.0	33.2
LOS by Move:	A	B	A	A	B+	A	A	A	A	F	A	C-
HCM2kAvgQ:	0	10	0	0	20	0	0	0	0	25	0	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



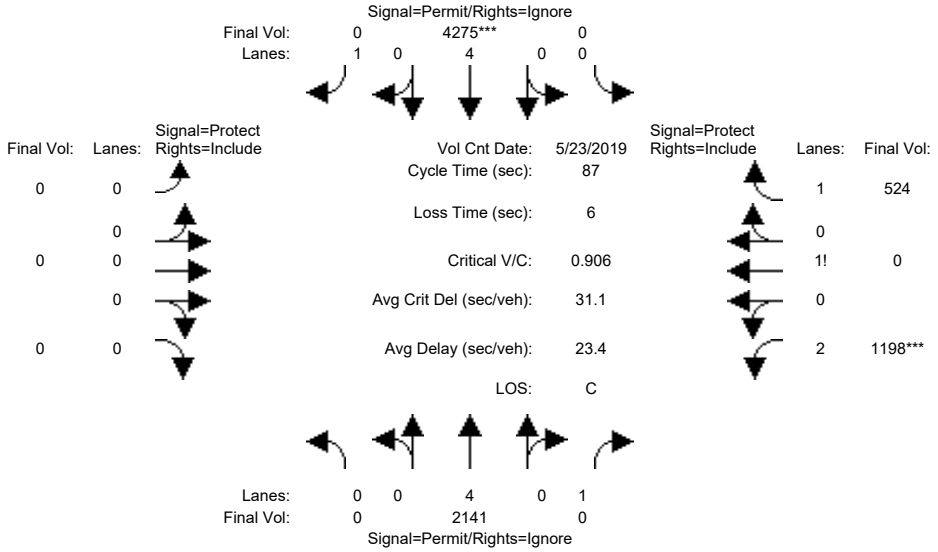
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	51	0	0	51	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	4651	484	0	1618	580	0	0	0	890	0	1001
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4651	484	0	1618	580	0	0	0	890	0	1001
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	4651	484	0	1618	580	0	0	0	890	0	1001
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	4651	0	0	1618	0	0	0	0	890	0	1001
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4651	0	0	1618	0	0	0	0	890	0	1001
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4651	0	0	1618	0	0	0	0	890	0	1001
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.81	1.00	0.95
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.41	0.00	1.59
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	3706	0	2863
Capacity Analysis Module:												
Vol/Sat:	0.00	0.61	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.24	0.00	0.35
Crit Moves:		****										****
Green Time:	0.0	51.0	0.0	0.0	51.0	0.0	0.0	0.0	0.0	22.7	22.7	28.0
Volume/Cap:	0.00	1.02	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.90	0.00	1.06
Uniform Del:	0.0	17.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	30.0	0.0	28.5
IncremntDel:	0.0	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0	39.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.58	0.00	0.00	0.58	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	28.5	0.0	0.0	5.0	0.0	0.0	0.0	0.0	35.6	0.0	68.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.5	0.0	0.0	5.0	0.0	0.0	0.0	0.0	35.6	0.0	68.3
LOS by Move:	A	C	A	A	A	A	A	A	A	D+	A	E
HCM2kAvgQ:	0	41	0	0	3	0	0	0	0	15	0	28

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #67: Lawrence Expwy & US 101 NB Ramps



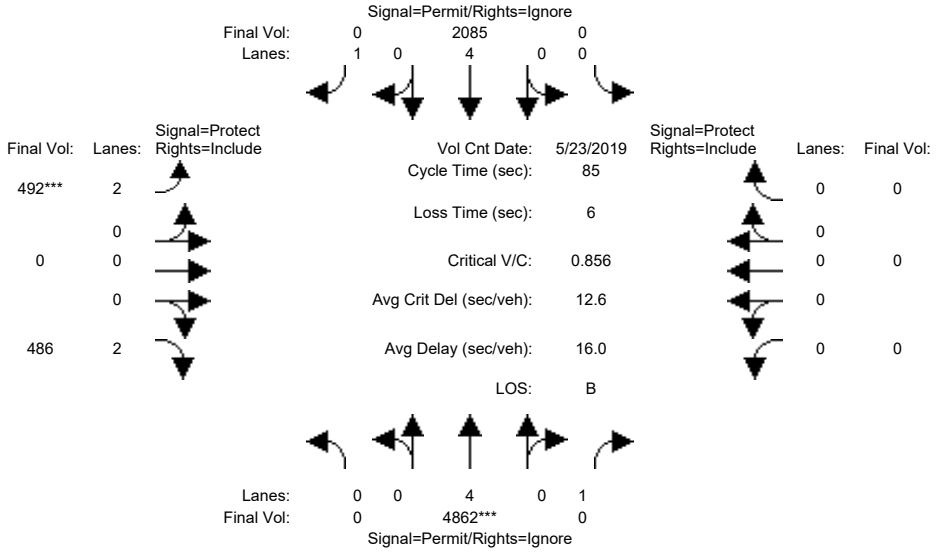
Street Name:	Lawrence Expwy						US 101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	53	0	0	53	0	0	0	0	22	22	22
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	5.0	0.0	5.0
Volume Module: >> Count Date: 23 May 2019 << 4:55 PM - 5:55 PM												
Base Vol:	0	2141	418	0	4275	358	0	0	0	1198	0	524
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2141	418	0	4275	358	0	0	0	1198	0	524
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2141	418	0	4275	358	0	0	0	1198	0	524
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2141	0	0	4275	0	0	0	0	1198	0	524
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2141	0	0	4275	0	0	0	0	1198	0	524
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2141	0	0	4275	0	0	0	0	1198	0	524
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.85	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	0.00	0.00	0.00	2.62	0.00	1.38
Final Sat.:	0	7600	1750	0	7600	1750	0	0	0	4258	0	2412
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.28	0.00	0.22
Crit Moves:					****					****		
Green Time:	0.0	53.2	0.0	0.0	53.2	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Volume/Cap:	0.00	0.46	0.00	0.00	0.92	0.00	0.00	0.00	0.00	1.08	0.00	0.83
Uniform Del:	0.0	9.1	0.0	0.0	15.0	0.0	0.0	0.0	0.0	32.2	0.0	30.4
IncremntDel:	0.0	0.1	0.0	0.0	3.5	0.0	0.0	0.0	0.0	46.9	0.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.42	0.00	0.00	0.55	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	13.0	0.0	0.0	11.7	0.0	0.0	0.0	0.0	79.1	0.0	33.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.0	0.0	0.0	11.7	0.0	0.0	0.0	0.0	79.1	0.0	33.4
LOS by Move:	A	B	A	A	B+	A	A	A	A	E-	A	C-
HCM2kAvgQ:	0	10	0	0	20	0	0	0	0	24	0	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



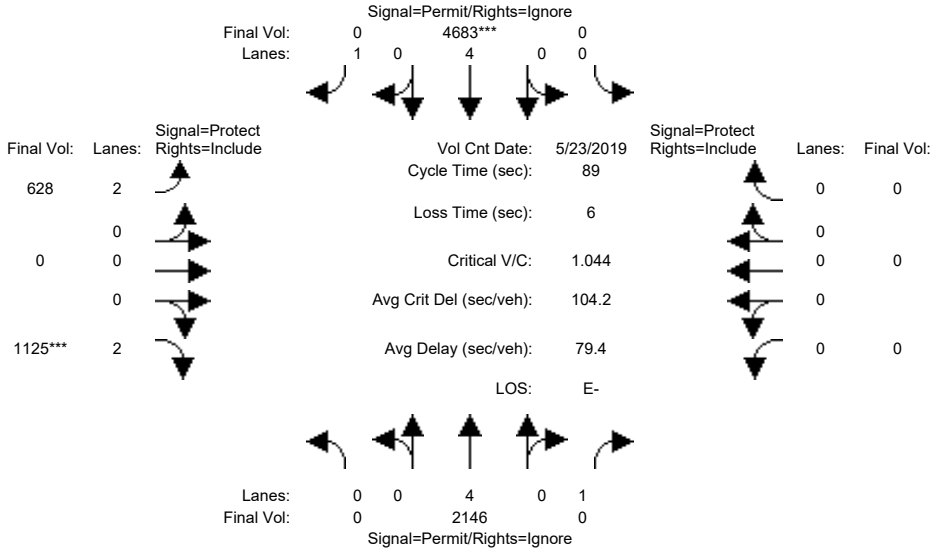
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	4862	620	0	2085	338	492	0	486	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4862	620	0	2085	338	492	0	486	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	4862	620	0	2085	338	492	0	486	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	4862	0	0	2085	0	492	0	486	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4862	0	0	2085	0	492	0	486	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4862	0	0	2085	0	492	0	486	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.64	0.00	0.00	0.27	0.00	0.16	0.00	0.15	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	12.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.90	0.00	0.00	0.49	0.00	1.05	0.00	1.04	0.00	0.00	0.00
Uniform Del:	0.0	9.9	0.0	0.0	11.3	0.0	36.2	0.0	36.2	0.0	0.0	0.0
IncremntDel:	0.0	2.4	0.0	0.0	0.1	0.0	56.6	0.0	52.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	4.5	0.0	0.0	7.6	0.0	92.8	0.0	88.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.5	0.0	0.0	7.6	0.0	92.8	0.0	88.9	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	F	A	F	A	A	A
HCM2kAvgQ:	0	17	0	0	6	0	14	0	14	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



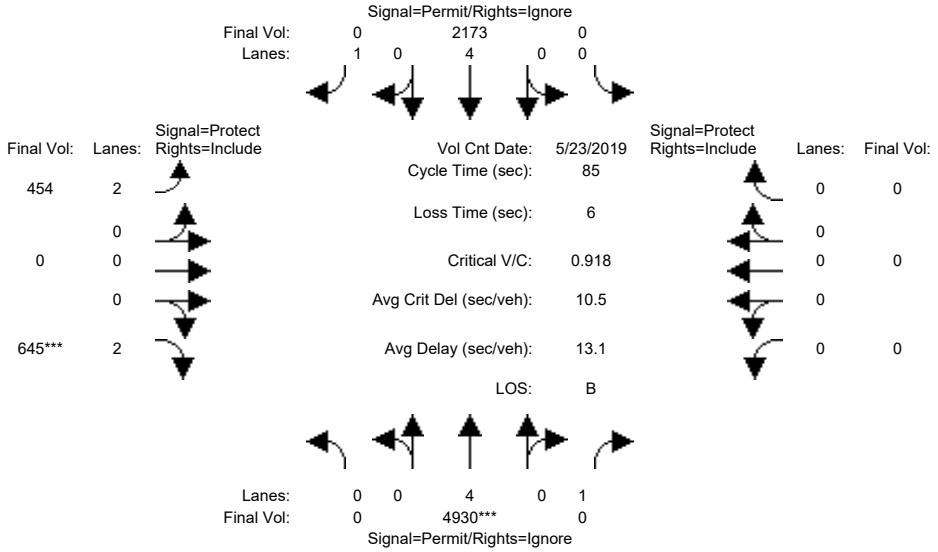
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	2146	1413	0	4683	298	628	0	1125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2146	1413	0	4683	298	628	0	1125	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2146	1413	0	4683	298	628	0	1125	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2146	0	0	4683	0	628	0	1125	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2146	0	0	4683	0	628	0	1125	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2146	0	0	4683	0	628	0	1125	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.62	0.00	0.20	0.00	0.36	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.41	0.00	0.00	1.23	0.00	1.13	0.00	0.83	0.00	0.00	0.00
Uniform Del:	0.0	5.8	0.0	0.0	22.2	0.0	36.7	0.0	22.4	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	106	0.0	79.3	0.0	4.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.7	0.0	0.0	123	0.0	116.0	0.0	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.7	0.0	0.0	123	0.0	116.0	0.0	26.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	F	A	F	A	C	A	A	A
HCM2kAvgQ:	0	2	0	0	61	0	19	0	19	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



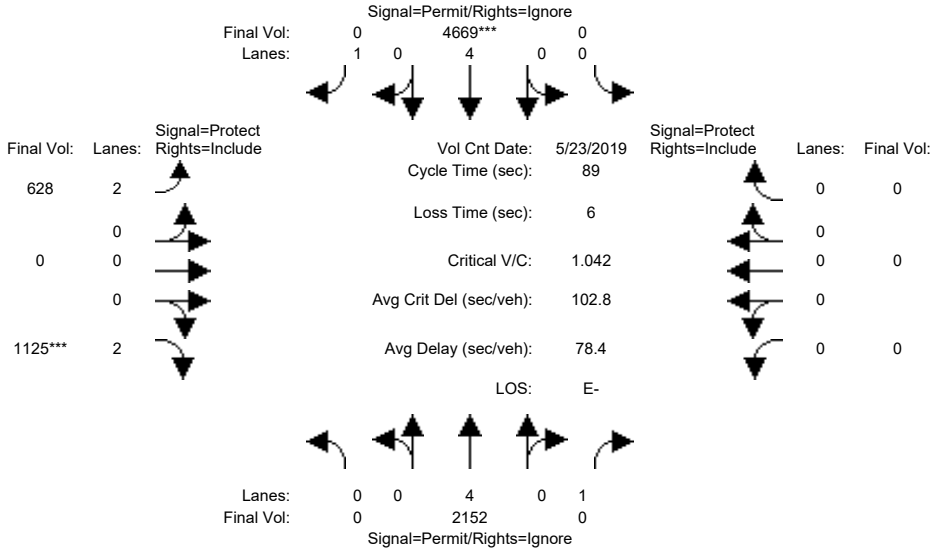
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	60	0	0	60	0	14	14	14	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 << 7:45 AM - 8:45 AM												
Base Vol:	0	4930	620	0	2173	338	454	0	645	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4930	620	0	2173	338	454	0	645	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	4930	620	0	2173	338	454	0	645	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	4930	0	0	2173	0	454	0	645	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4930	0	0	2173	0	454	0	645	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4930	0	0	2173	0	454	0	645	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.65	0.00	0.00	0.29	0.00	0.14	0.00	0.20	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	60.4	0.0	0.0	47.6	0.0	12.6	12.6	18.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.91	0.00	0.00	0.51	0.00	0.97	0.00	0.94	0.00	0.00	0.00
Uniform Del:	0.0	10.1	0.0	0.0	11.5	0.0	36.0	0.0	32.6	0.0	0.0	0.0
IncremntDel:	0.0	2.8	0.0	0.0	0.1	0.0	34.5	0.0	20.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.21	0.00	0.00	0.66	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	4.9	0.0	0.0	7.7	0.0	70.5	0.0	52.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.9	0.0	0.0	7.7	0.0	70.5	0.0	52.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	E	A	D-	A	A	A
HCM2kAvgQ:	0	18	0	0	6	0	12	0	15	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #68: Lawrence Expwy & US 101 SB Ramps



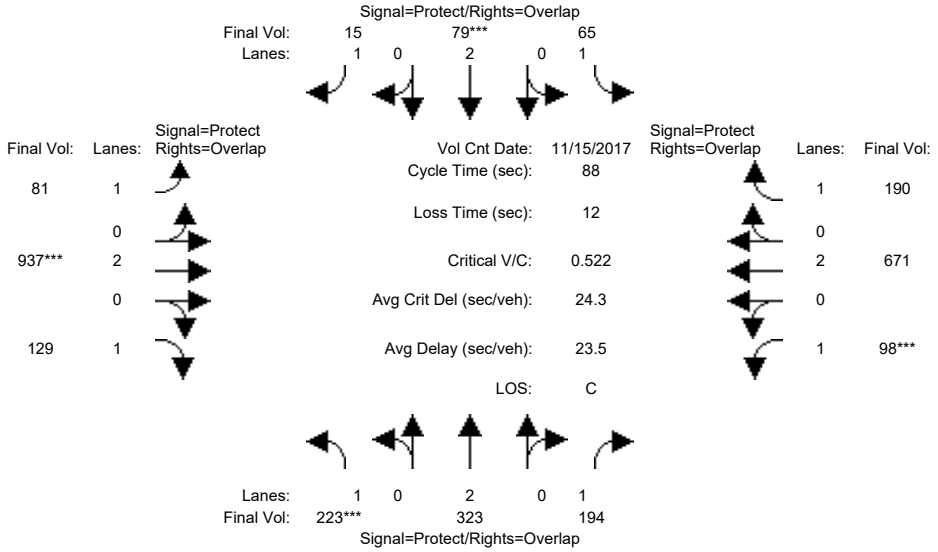
Street Name:	Lawrence Expwy						US 101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	61	0	0	44	0	15	18	15	0	0	0
Y+R:	0.0	6.2	0.0	0.0	6.2	0.0	5.5	0.0	5.5	0.0	0.0	0.0
Volume Module: >> Count Date: 23 May 2019 <<												
Base Vol:	0	2152	1413	0	4669	298	628	0	1125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2152	1413	0	4669	298	628	0	1125	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2152	1413	0	4669	298	628	0	1125	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2152	0	0	4669	0	628	0	1125	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2152	0	0	4669	0	628	0	1125	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2152	0	0	4669	0	628	0	1125	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	4.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	7600	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.61	0.00	0.20	0.00	0.36	0.00	0.00	0.00
Crit Moves:					****				****			
Green Time:	0.0	61.8	0.0	0.0	44.6	0.0	15.7	18.3	38.4	0.0	0.0	0.0
Volume/Cap:	0.00	0.41	0.00	0.00	1.23	0.00	1.13	0.00	0.83	0.00	0.00	0.00
Uniform Del:	0.0	5.8	0.0	0.0	22.2	0.0	36.7	0.0	22.4	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	104	0.0	79.3	0.0	4.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.28	0.00	0.00	0.76	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	1.7	0.0	0.0	121	0.0	116.0	0.0	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.7	0.0	0.0	121	0.0	116.0	0.0	26.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	F	A	F	A	C	A	A	A
HCM2kAvgQ:	0	2	0	0	60	0	19	0	19	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #72: Oakmead Pkwy & Scott Blvd



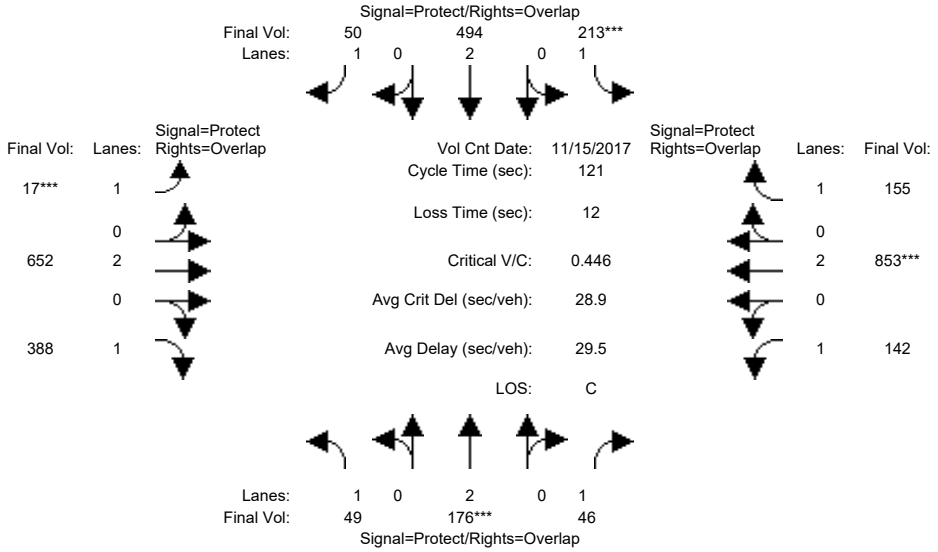
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	223	323	194	65	79	15	81	937	129	98	671	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	223	323	194	65	79	15	81	937	129	98	671	190
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	223	323	194	65	79	15	81	937	129	98	671	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	223	323	194	65	79	15	81	937	129	98	671	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	323	194	65	79	15	81	937	129	98	671	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	223	323	194	65	79	15	81	937	129	98	671	190
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.04	0.02	0.01	0.05	0.25	0.07	0.06	0.18	0.11
Crit Moves:	****				****			****			****	
Green Time:	19.6	17.4	26.0	12.2	10.0	24.4	14.4	37.8	57.4	8.6	32.0	44.2
Volume/Cap:	0.57	0.43	0.38	0.27	0.18	0.03	0.28	0.57	0.11	0.57	0.49	0.22
Uniform Del:	30.5	31.0	24.6	33.9	35.3	23.2	32.3	19.0	5.7	37.9	21.6	12.2
IncremntDel:	2.1	0.4	0.5	0.6	0.2	0.0	0.5	0.5	0.0	4.7	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.6	31.4	25.0	34.5	35.5	23.2	32.8	19.5	5.8	42.6	21.9	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	31.4	25.0	34.5	35.5	23.2	32.8	19.5	5.8	42.6	21.9	12.4
LOS by Move:	C-	C	C	C-	D+	C	C-	B-	A	D	C+	B
HCM2kAvgQ:	6	4	4	2	1	0	2	9	1	3	6	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #72: Oakmead Pkwy & Scott Blvd



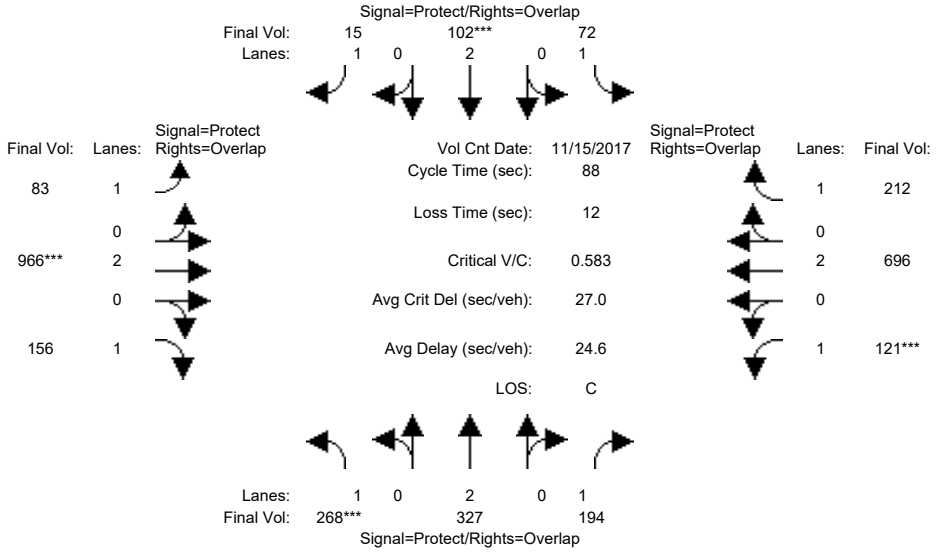
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	49	176	46	213	494	50	17	652	388	142	853	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	176	46	213	494	50	17	652	388	142	853	155
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	176	46	213	494	50	17	652	388	142	853	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	176	46	213	494	50	17	652	388	142	853	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	176	46	213	494	50	17	652	388	142	853	155
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	176	46	213	494	50	17	652	388	142	853	155
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.03	0.12	0.13	0.03	0.01	0.17	0.22	0.08	0.22	0.09
Crit Moves:		****		****			****				****	
Green Time:	13.4	12.0	31.3	31.6	30.2	37.2	7.0	46.0	59.5	19.3	58.3	90.0
Volume/Cap:	0.25	0.47	0.10	0.47	0.52	0.09	0.17	0.45	0.45	0.51	0.47	0.12
Uniform Del:	49.2	51.4	34.1	37.6	39.1	29.9	54.2	28.0	20.1	46.5	20.9	4.4
IncremntDel:	0.7	0.9	0.1	0.8	0.5	0.1	0.8	0.2	0.4	1.6	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.9	52.4	34.2	38.3	39.7	29.9	55.0	28.2	20.5	48.1	21.1	4.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.9	52.4	34.2	38.3	39.7	29.9	55.0	28.2	20.5	48.1	21.1	4.4
LOS by Move:	D	D-	C-	D+	D	C	E+	C	C+	D	C+	A
HCM2kAvgQ:	2	3	1	7	8	1	1	9	10	5	10	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #72: Oakmead Pkwy & Scott Blvd



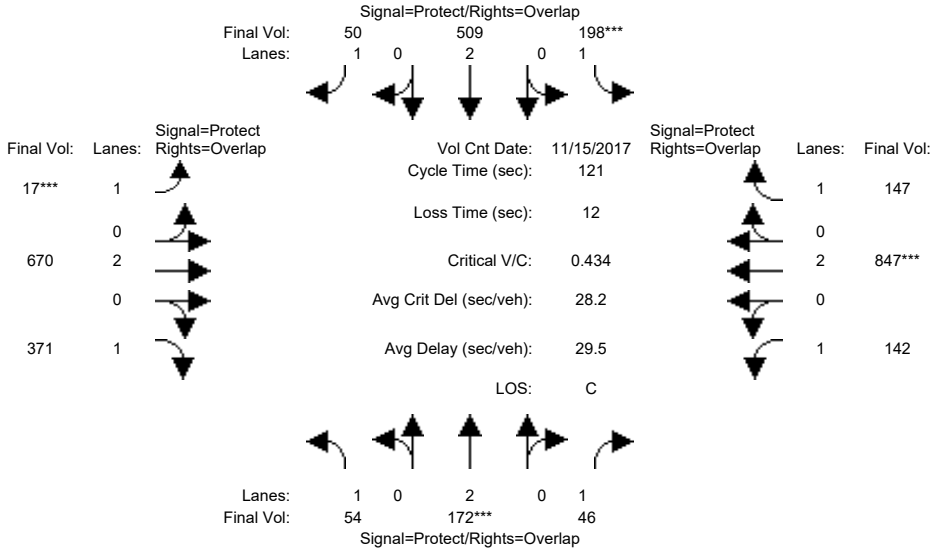
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	268	327	194	72	102	15	83	966	156	121	696	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	268	327	194	72	102	15	83	966	156	121	696	212
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	268	327	194	72	102	15	83	966	156	121	696	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	268	327	194	72	102	15	83	966	156	121	696	212
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	268	327	194	72	102	15	83	966	156	121	696	212
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	268	327	194	72	102	15	83	966	156	121	696	212
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.09	0.11	0.04	0.03	0.01	0.05	0.25	0.09	0.07	0.18	0.12
Crit Moves:	****				****			****			****	
Green Time:	21.2	18.4	27.9	12.9	10.0	23.6	13.6	35.2	56.4	9.6	31.2	44.1
Volume/Cap:	0.64	0.41	0.35	0.28	0.24	0.03	0.31	0.64	0.14	0.64	0.52	0.24
Uniform Del:	29.9	30.1	23.1	33.5	35.5	23.8	33.1	21.2	6.2	37.5	22.4	12.5
IncremntDel:	3.2	0.4	0.4	0.6	0.3	0.0	0.7	0.9	0.1	6.9	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	33.1	30.5	23.4	34.1	35.8	23.8	33.7	22.1	6.3	44.4	22.8	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.1	30.5	23.4	34.1	35.8	23.8	33.7	22.1	6.3	44.4	22.8	12.6
LOS by Move:	C-	C	C	C-	D+	C	C-	C+	A	D	C+	B
HCM2kAvgQ:	7	4	4	2	1	0	2	10	2	3	7	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #72: Oakmead Pkwy & Scott Blvd



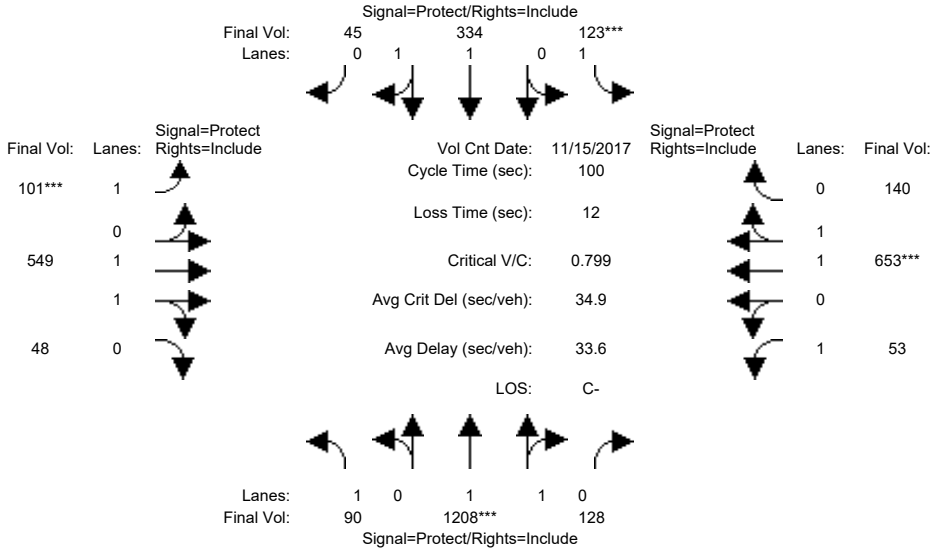
Street Name:	Oakmead Pkwy						Scott Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	54	172	46	198	509	50	17	670	371	142	847	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	172	46	198	509	50	17	670	371	142	847	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	172	46	198	509	50	17	670	371	142	847	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	172	46	198	509	50	17	670	371	142	847	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	172	46	198	509	50	17	670	371	142	847	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	172	46	198	509	50	17	670	371	142	847	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.03	0.11	0.13	0.03	0.01	0.18	0.21	0.08	0.22	0.08
Crit Moves:		****		****			****				****	
Green Time:	12.8	12.1	32.7	30.3	29.6	36.6	7.0	46.0	58.8	20.6	59.6	89.9
Volume/Cap:	0.29	0.45	0.10	0.45	0.55	0.09	0.17	0.46	0.44	0.48	0.45	0.11
Uniform Del:	49.9	51.3	33.1	38.4	39.9	30.3	54.2	28.2	20.3	45.3	20.0	4.4
IncremntDel:	0.9	0.9	0.1	0.7	0.7	0.1	0.8	0.2	0.4	1.2	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.8	52.2	33.2	39.1	40.6	30.4	55.0	28.4	20.7	46.5	20.2	4.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	52.2	33.2	39.1	40.6	30.4	55.0	28.4	20.7	46.5	20.2	4.4
LOS by Move:	D	D-	C-	D	D	C	E+	C	C+	D	C+	A
HCM2kAvgQ:	2	3	1	7	9	1	1	9	9	5	9	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #77: Bowers Ave & Monroe St



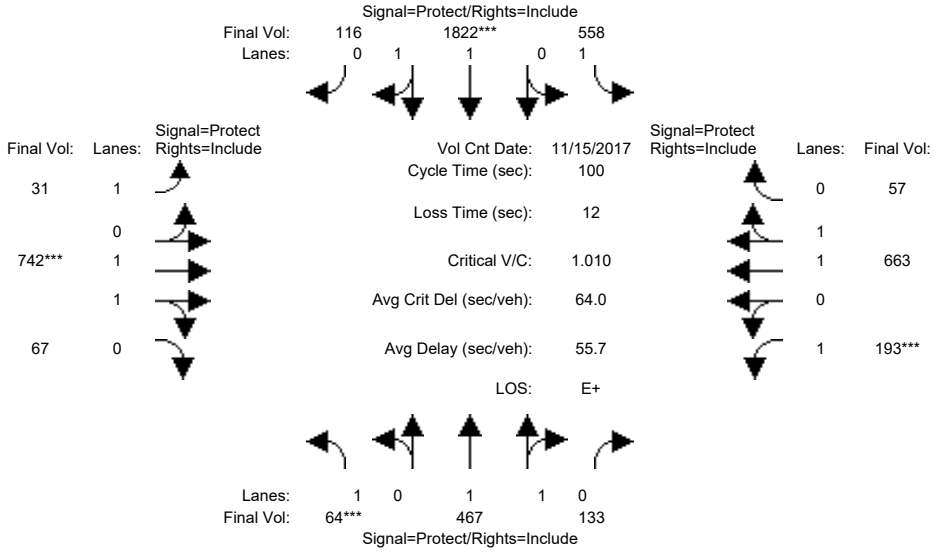
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	79	1063	113	108	294	40	89	483	42	47	575	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1063	113	108	294	40	89	483	42	47	575	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1063	113	108	294	40	89	483	42	47	575	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	90	1208	128	123	334	45	101	549	48	53	653	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	1208	128	123	334	45	101	549	48	53	653	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	1208	128	123	334	45	101	549	48	53	653	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.80	0.20	1.00	1.75	0.25	1.00	1.84	0.16	1.00	1.64	0.36
Final Sat.:	1750	3344	355	1750	3257	443	1750	3404	296	1750	3048	652
Capacity Analysis Module:												
Vol/Sat:	0.05	0.36	0.36	0.07	0.10	0.10	0.06	0.16	0.16	0.03	0.21	0.21
Crit Moves:		****		****			****				****	
Green Time:	18.0	45.2	45.2	8.8	36.0	36.0	7.2	26.0	26.0	8.1	26.8	26.8
Volume/Cap:	0.29	0.80	0.80	0.80	0.29	0.29	0.80	0.62	0.62	0.38	0.80	0.80
Uniform Del:	35.5	23.5	23.5	44.8	22.8	22.8	45.7	32.7	32.7	43.6	34.1	34.1
IncremntDel:	0.5	2.8	2.8	24.9	0.1	0.1	29.1	1.3	1.3	1.7	4.7	4.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.0	26.3	26.3	69.6	23.0	23.0	74.8	33.9	33.9	45.3	38.8	38.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	26.3	26.3	69.6	23.0	23.0	74.8	33.9	33.9	45.3	38.8	38.8
LOS by Move:	D+	C	C	E	C+	C+	E	C-	C-	D	D+	D+
HCM2kAvgQ:	2	17	17	4	4	4	4	8	8	2	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #77: Bowers Ave & Monroe St



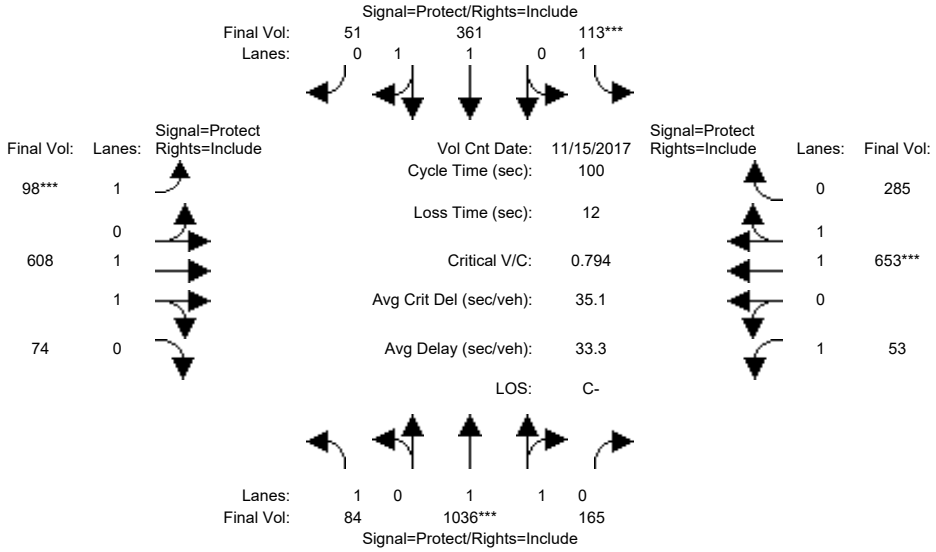
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	61	448	128	536	1749	111	30	712	64	185	636	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	448	128	536	1749	111	30	712	64	185	636	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	448	128	536	1749	111	30	712	64	185	636	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	64	467	133	558	1822	116	31	742	67	193	663	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	467	133	558	1822	116	31	742	67	193	663	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	467	133	558	1822	116	31	742	67	193	663	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.54	0.46	1.00	1.88	0.12	1.00	1.83	0.17	1.00	1.84	0.16
Final Sat.:	1750	2877	822	1750	3479	221	1750	3395	305	1750	3405	294
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.16	0.32	0.52	0.52	0.02	0.22	0.22	0.11	0.19	0.19
Crit Moves:	****				****			****			****	
Green Time:	5.0	18.9	18.9	37.1	51.0	51.0	6.5	21.3	21.3	10.7	25.5	25.5
Volume/Cap:	0.73	0.86	0.86	0.86	1.03	1.03	0.27	1.03	1.03	1.03	0.76	0.76
Uniform Del:	46.8	39.3	39.3	29.0	24.5	24.5	44.5	39.4	39.4	44.6	34.5	34.5
IncremntDel:	26.0	10.5	10.5	11.2	27.9	27.9	1.3	39.1	39.1	72.9	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	72.8	49.8	49.8	40.2	52.4	52.4	45.8	78.5	78.5	117.5	38.3	38.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.8	49.8	49.8	40.2	52.4	52.4	45.8	78.5	78.5	117.5	38.3	38.3
LOS by Move:	E	D	D	D	D-	D-	D	E-	E-	F	D+	D+
HCM2kAvgQ:	2	10	10	16	33	33	1	17	17	9	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #77: Bowers Ave & Monroe St



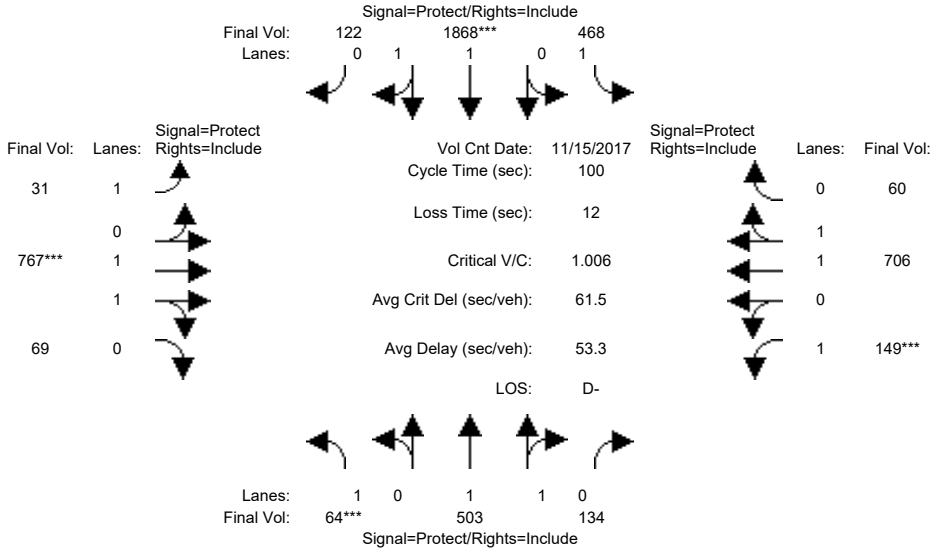
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	74	912	145	99	318	45	86	535	65	47	575	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	912	145	99	318	45	86	535	65	47	575	251
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	912	145	99	318	45	86	535	65	47	575	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	84	1036	165	113	361	51	98	608	74	53	653	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1036	165	113	361	51	98	608	74	53	653	285
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1036	165	113	361	51	98	608	74	53	653	285
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	1.00	1.72	0.28	1.00	1.75	0.25	1.00	1.78	0.22	1.00	1.38	0.62
Final Sat.:	1750	3192	508	1750	3241	459	1750	3299	401	1750	2575	1124
Capacity Analysis Module:												
Vol/Sat:	0.05	0.32	0.32	0.06	0.11	0.11	0.06	0.18	0.18	0.03	0.25	0.25
Crit Moves:		****		****			****				****	
Green Time:	15.2	40.9	40.9	8.1	33.8	33.8	7.0	30.7	30.7	8.3	32.0	32.0
Volume/Cap:	0.32	0.79	0.79	0.79	0.33	0.33	0.79	0.60	0.60	0.37	0.79	0.79
Uniform Del:	37.8	25.9	25.9	45.1	24.6	24.6	45.8	29.5	29.5	43.3	31.0	31.0
IncremntDel:	0.7	3.0	3.0	25.7	0.2	0.2	28.8	0.9	0.9	1.6	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.5	28.8	28.8	70.8	24.8	24.8	74.6	30.4	30.4	44.9	34.8	34.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.5	28.8	28.8	70.8	24.8	24.8	74.6	30.4	30.4	44.9	34.8	34.8
LOS by Move:	D+	C	C	E	C	C	E	C	C	D	C-	C-
HCM2kAvgQ:	2	15	15	4	5	5	4	9	9	2	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #77: Bowers Ave & Monroe St



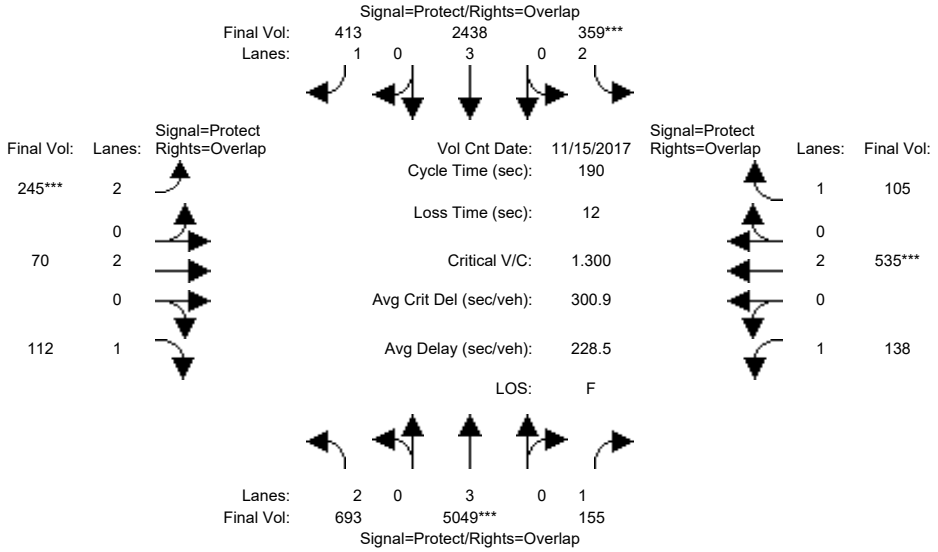
Street Name:	Bowers Ave						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	5	5	5	5	5	5	5	5	5	5	5
Y+R:	4.5	4.5	4.5	5.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	61	483	129	449	1793	117	30	736	66	143	678	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	483	129	449	1793	117	30	736	66	143	678	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	483	129	449	1793	117	30	736	66	143	678	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	64	503	134	468	1868	122	31	767	69	149	706	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	503	134	468	1868	122	31	767	69	149	706	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	503	134	468	1868	122	31	767	69	149	706	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.57	0.43	1.00	1.87	0.13	1.00	1.83	0.17	1.00	1.84	0.16
Final Sat.:	1750	2920	780	1750	3473	227	1750	3395	304	1750	3408	292
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.17	0.27	0.54	0.54	0.02	0.23	0.23	0.09	0.21	0.21
Crit Moves:	****				****			****			****	
Green Time:	5.0	22.6	22.6	35.0	52.6	52.6	5.9	22.1	22.1	8.3	24.5	24.5
Volume/Cap:	0.73	0.76	0.76	0.76	1.02	1.02	0.30	1.02	1.02	1.02	0.85	0.85
Uniform Del:	46.8	36.2	36.2	28.8	23.7	23.7	45.1	39.0	39.0	45.8	36.0	36.0
IncremntDel:	26.0	4.2	4.2	5.7	26.3	26.3	1.6	37.3	37.3	80.6	7.4	7.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	72.8	40.4	40.4	34.5	50.0	50.0	46.7	76.3	76.3	126.5	43.4	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.8	40.4	40.4	34.5	50.0	50.0	46.7	76.3	76.3	126.5	43.4	43.4
LOS by Move:	E	D	D	C-	D	D	D	E-	E-	F	D	D
HCM2kAvgQ:	2	10	10	13	33	33	1	17	17	7	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #79: San Tomas Expwy & Walsh Ave



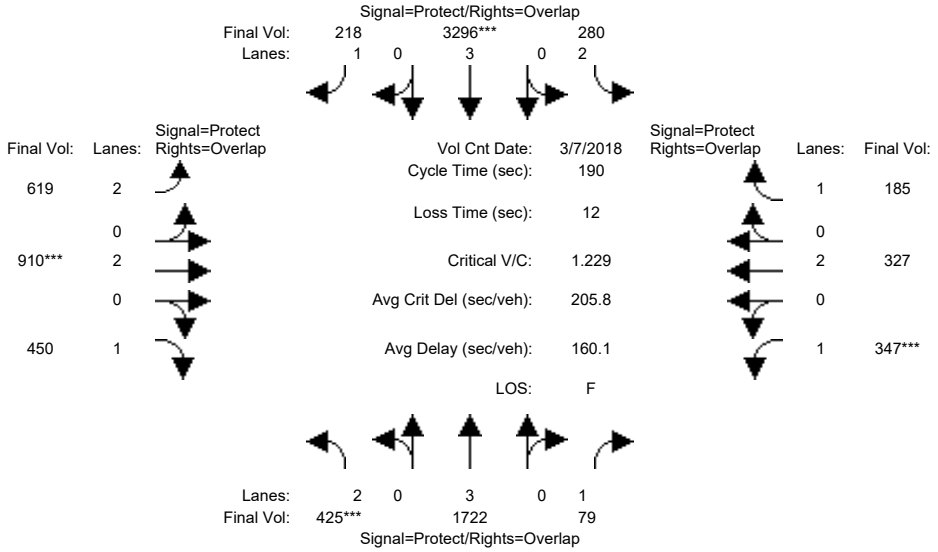
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	693	5940	155	359	2868	413	245	70	112	138	535	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	693	5940	155	359	2868	413	245	70	112	138	535	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	693	5940	155	359	2868	413	245	70	112	138	535	105
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	693	5049	155	359	2438	413	245	70	112	138	535	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	693	5049	155	359	2438	413	245	70	112	138	535	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	693	5049	155	359	2438	413	245	70	112	138	535	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.89	0.09	0.11	0.43	0.24	0.08	0.02	0.06	0.08	0.14	0.06
Crit Moves:		****			****			****			****	
Green Time:	23.1	103	114.0	15.1	95.1	108.5	13.4	38.8	61.9	11.0	36.0	51.1
Volume/Cap:	1.81	1.63	0.15	1.43	0.85	0.41	1.10	0.09	0.20	1.36	0.74	0.22
Uniform Del:	83.4	43.5	16.7	87.4	41.4	22.9	88.3	61.3	46.1	89.5	72.6	54.0
IncremntDel:	374.4	287	0.1	216.5	2.7	0.3	90.8	0.1	0.2	213.8	4.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	457.8	330	16.7	304.0	44.1	23.2	179.1	61.3	46.3	303.3	76.8	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	457.8	330	16.7	304.0	44.1	23.2	179.1	61.3	46.3	303.3	76.8	54.2
LOS by Move:	F	F	B	F	D	C	F	E	D	F	E-	D-
HCM2kAvgQ:	46	171	4	20	38	13	11	2	5	15	16	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #79: San Tomas Expwy & Walsh Ave



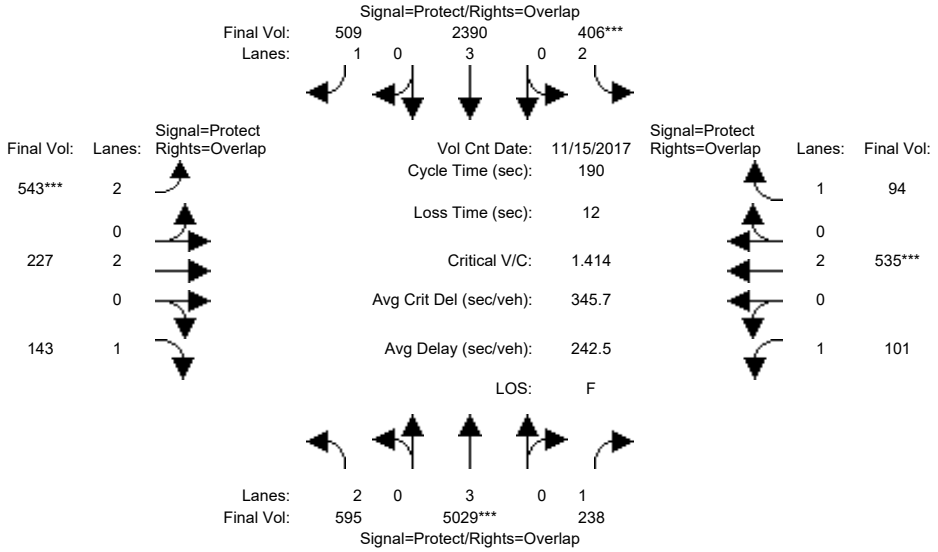
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	425	2327	79	280	4020	218	619	910	450	347	327	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	425	2327	79	280	4020	218	619	910	450	347	327	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	425	2327	79	280	4020	218	619	910	450	347	327	185
User Adj:	1.00	0.74	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	425	1722	79	280	3296	218	619	910	450	347	327	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	425	1722	79	280	3296	218	619	910	450	347	327	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	425	1722	79	280	3296	218	619	910	450	347	327	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.30	0.05	0.09	0.58	0.12	0.20	0.24	0.26	0.20	0.09	0.11
Crit Moves:	****				****			****		****		
Green Time:	11.9	91.6	111.5	10.9	90.7	118.3	27.6	45.4	57.3	19.9	37.3	48.2
Volume/Cap:	2.16	0.63	0.08	1.55	1.21	0.20	1.35	1.00	0.85	1.89	0.44	0.42
Uniform Del:	89.1	36.5	17.0	89.5	49.6	15.4	81.2	72.3	62.4	85.1	67.1	59.2
IncremntDel:	536.4	0.5	0.0	272.3	98.8	0.1	172.5	30.5	12.7	422.1	0.4	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	625.4	37.0	17.0	361.9	148	15.5	253.7	103	75.1	507.1	67.6	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	625.4	37.0	17.0	361.9	148	15.5	253.7	103	75.1	507.1	67.6	59.8
LOS by Move:	F	D+	B	F	F	B	F	F	E-	F	E	E+
HCM2kAvgQ:	31	24	2	16	82	5	32	26	25	44	8	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #79: San Tomas Expwy & Walsh Ave



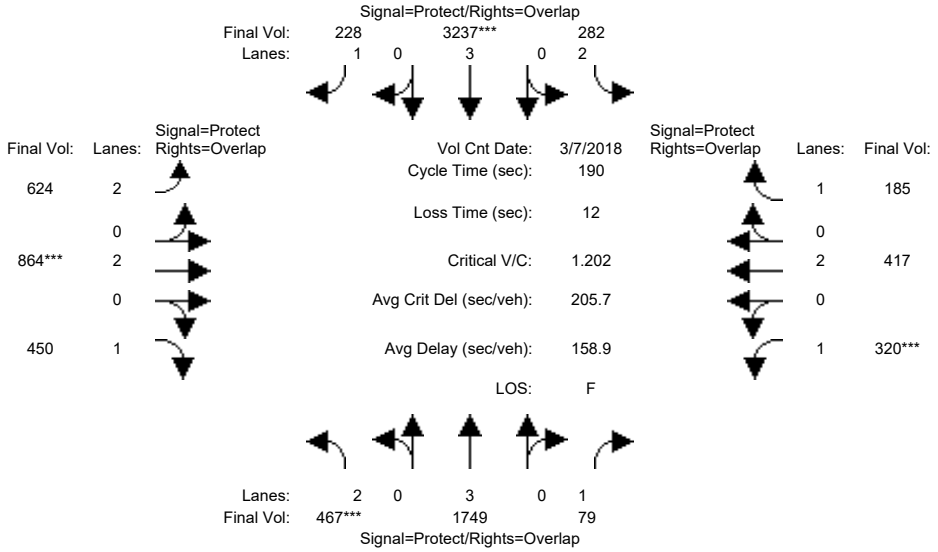
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	595	5916	238	406	2812	509	543	227	143	101	535	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	595	5916	238	406	2812	509	543	227	143	101	535	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	595	5916	238	406	2812	509	543	227	143	101	535	94
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	595	5029	238	406	2390	509	543	227	143	101	535	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	595	5029	238	406	2390	509	543	227	143	101	535	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	595	5029	238	406	2390	509	543	227	143	101	535	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.88	0.14	0.13	0.42	0.29	0.17	0.06	0.08	0.06	0.14	0.05
Crit Moves:		****			****			****			****	
Green Time:	23.1	103	114.0	15.1	95.1	108.5	13.4	38.8	61.9	11.0	36.0	51.1
Volume/Cap:	1.55	1.63	0.23	1.62	0.84	0.51	2.45	0.29	0.25	1.00	0.74	0.20
Uniform Del:	83.4	43.5	17.6	87.4	40.8	24.7	88.3	64.0	47.0	89.5	72.6	53.6
IncremntDel:	261.6	284	0.1	297.2	2.3	0.4	663.7	0.2	0.2	88.3	4.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	345.0	327	17.7	384.7	43.2	25.1	752.0	64.2	47.3	177.8	76.8	53.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	345.0	327	17.7	384.7	43.2	25.1	752.0	64.2	47.3	177.8	76.8	53.9
LOS by Move:	F	F	B	F	D	C	F	E	D	F	E-	D-
HCM2kAvgQ:	35	169	6	25	37	18	42	5	6	9	16	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #79: San Tomas Expwy & Walsh Ave



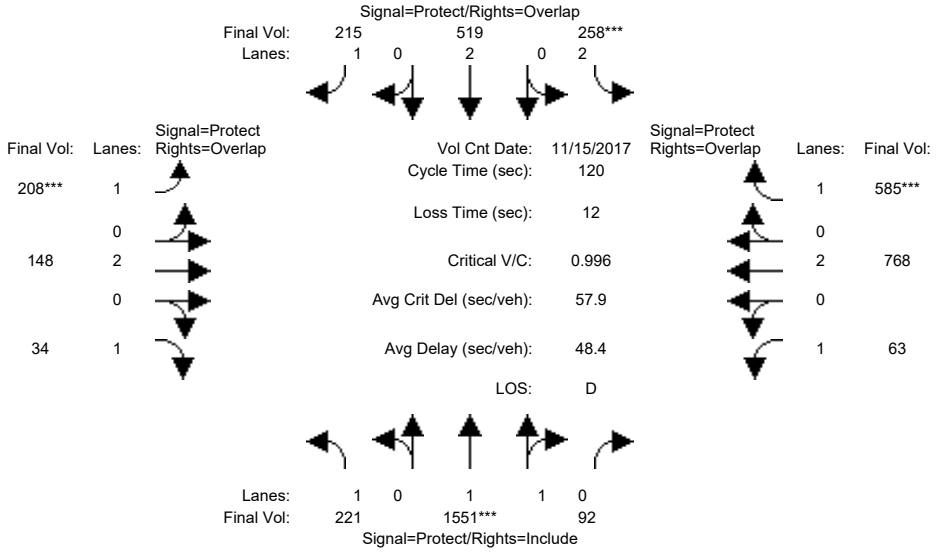
Street Name:	San Tomas Expwy						Walsh Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.5	5.8	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.1	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	467	2364	79	282	3947	228	624	864	450	320	417	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	467	2364	79	282	3947	228	624	864	450	320	417	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	467	2364	79	282	3947	228	624	864	450	320	417	185
User Adj:	1.00	0.74	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	467	1749	79	282	3237	228	624	864	450	320	417	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	467	1749	79	282	3237	228	624	864	450	320	417	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	467	1749	79	282	3237	228	624	864	450	320	417	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.05	0.09	0.57	0.13	0.20	0.23	0.26	0.18	0.11	0.11
Crit Moves:	****				****			****		****		
Green Time:	11.9	91.6	111.5	10.9	90.7	118.3	27.6	45.4	57.3	19.9	37.3	48.2
Volume/Cap:	2.37	0.64	0.08	1.56	1.19	0.21	1.36	0.95	0.85	1.75	0.56	0.42
Uniform Del:	89.1	36.8	17.0	89.5	49.6	15.5	81.2	71.2	62.4	85.1	68.9	59.2
IncremntDel:	631.1	0.5	0.0	277.1	89.2	0.1	177.1	19.2	12.7	357.5	1.0	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	720.2	37.3	17.0	366.6	139	15.6	258.3	90.4	75.1	442.6	69.9	59.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	720.2	37.3	17.0	366.6	139	15.6	258.3	90.4	75.1	442.6	69.9	59.8
LOS by Move:	F	D+	B	F	F	B	F	F	E-	F	E	E+
HCM2kAvgQ:	36	24	2	17	79	6	33	23	25	39	11	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #84: Bowers Ave & Kifer Rd



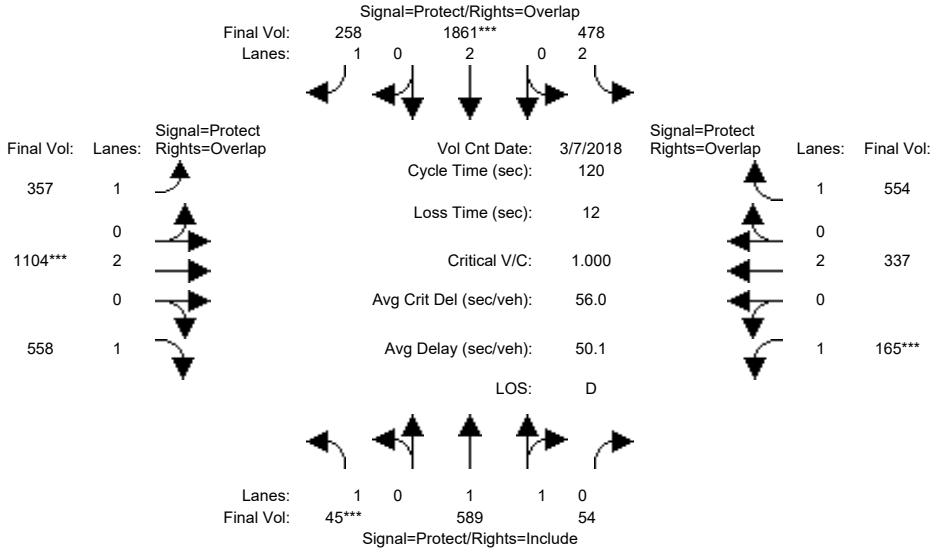
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	1411	84	235	472	196	189	135	31	57	699	532
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1411	84	235	472	196	189	135	31	57	699	532
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	1411	84	235	472	196	189	135	31	57	699	532
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	1551	92	258	519	215	208	148	34	63	768	585
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1551	92	258	519	215	208	148	34	63	768	585
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1551	92	258	519	215	208	148	34	63	768	585
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.88	0.12	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3492	208	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.44	0.44	0.08	0.14	0.12	0.12	0.04	0.02	0.04	0.20	0.33
Crit Moves:		****		****			****					****
Green Time:	30.4	53.5	53.5	9.9	32.9	47.2	14.3	22.3	52.8	22.3	30.4	40.2
Volume/Cap:	0.50	1.00	1.00	1.00	0.50	0.31	1.00	0.21	0.04	0.19	0.80	1.00
Uniform Del:	38.3	33.2	33.2	55.0	36.6	25.2	52.8	41.4	19.2	41.2	42.0	39.8
IncremntDel:	0.9	21.3	21.3	54.8	0.4	0.3	61.2	0.1	0.0	0.3	4.8	36.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.77	0.46	0.46	0.94	0.75	0.57	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.5	36.7	36.7	106.6	27.8	14.6	114.1	41.5	19.2	41.5	46.8	76.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.5	36.7	36.7	106.6	27.8	14.6	114.1	41.5	19.2	41.5	46.8	76.0
LOS by Move:	C	D+	D+	F	C	B	F	D	B-	D	D	E-
HCM2kAvgQ:	6	34	34	7	7	4	10	2	1	2	13	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #84: Bowers Ave & Kifer Rd



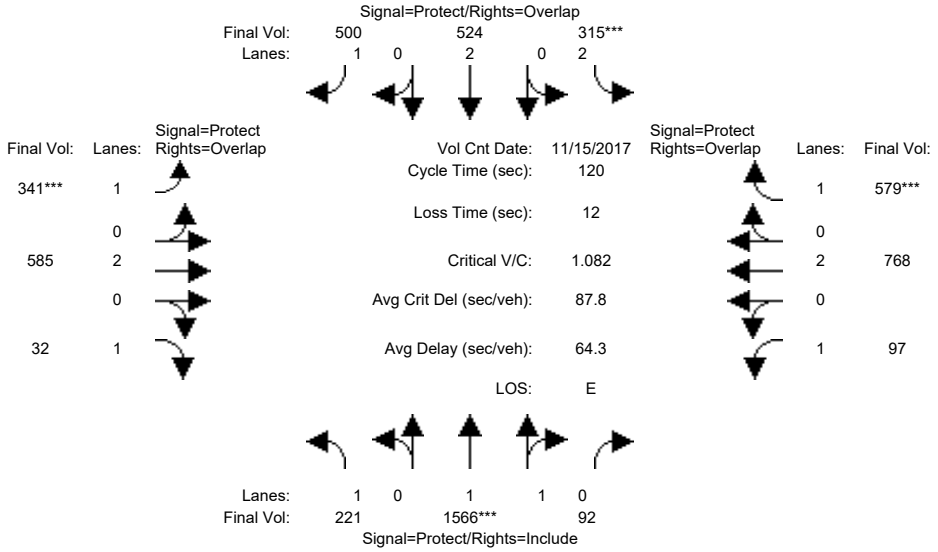
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	45	583	53	473	1842	255	353	1093	552	163	334	548
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	583	53	473	1842	255	353	1093	552	163	334	548
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	583	53	473	1842	255	353	1093	552	163	334	548
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	45	589	54	478	1861	258	357	1104	558	165	337	554
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	589	54	478	1861	258	357	1104	558	165	337	554
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	589	54	478	1861	258	357	1104	558	165	337	554
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.83	0.17	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3391	308	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.15	0.49	0.15	0.20	0.29	0.32	0.09	0.09	0.32
Crit Moves:	****				****			****			****	
Green Time:	5.0	33.5	33.5	29.2	57.7	82.7	25.1	34.2	39.2	11.1	20.3	49.5
Volume/Cap:	0.62	0.62	0.62	0.62	1.02	0.21	0.98	1.02	0.97	1.02	0.53	0.77
Uniform Del:	56.6	37.8	37.8	40.5	31.2	6.8	47.2	42.9	39.9	54.5	45.5	30.3
IncremntDel:	15.6	1.2	1.2	1.6	25.8	0.1	40.4	32.1	31.1	75.7	0.8	5.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.74	0.74	0.79	0.38	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	70.5	29.2	29.2	33.4	37.8	0.1	87.6	75.0	71.0	130.2	46.3	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.5	29.2	29.2	33.4	37.8	0.1	87.6	75.0	71.0	130.2	46.3	35.3
LOS by Move:	E	C	C	C-	D+	A	F	E	E	F	D	D+
HCM2kAvgQ:	2	9	9	8	35	0	16	24	24	9	6	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #84: Bowers Ave & Kifer Rd



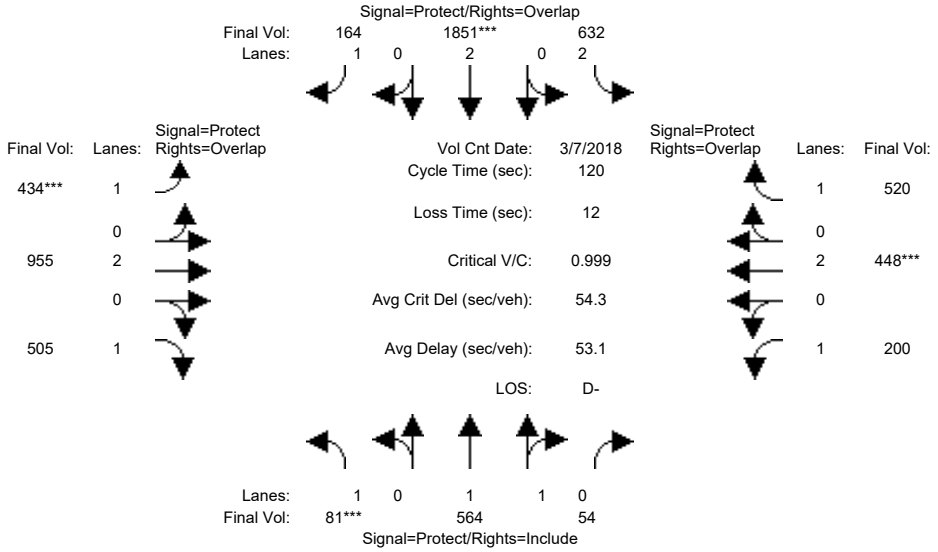
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	1425	84	287	477	455	310	532	29	88	699	527
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1425	84	287	477	455	310	532	29	88	699	527
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	1425	84	287	477	455	310	532	29	88	699	527
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	1566	92	315	524	500	341	585	32	97	768	579
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1566	92	315	524	500	341	585	32	97	768	579
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1566	92	315	524	500	341	585	32	97	768	579
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.89	0.11	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3494	206	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.45	0.45	0.10	0.14	0.29	0.19	0.15	0.02	0.06	0.20	0.33
Crit Moves:		****		****			****					****
Green Time:	29.1	49.7	49.7	11.1	31.8	53.3	21.6	34.7	63.8	12.5	25.6	36.7
Volume/Cap:	0.52	1.08	1.08	1.08	0.52	0.64	1.08	0.53	0.03	0.53	0.95	1.08
Uniform Del:	39.4	35.1	35.1	54.4	37.6	25.9	49.2	35.8	13.4	51.0	46.5	41.6
IncremntDel:	1.2	48.6	48.6	76.3	0.5	1.8	74.3	0.5	0.0	3.0	19.9	62.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.79	0.53	0.53	0.93	0.76	0.47	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.2	67.2	67.2	127.0	29.1	13.9	123.5	36.3	13.4	54.0	66.5	104.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.2	67.2	67.2	127.0	29.1	13.9	123.5	36.3	13.4	54.0	66.5	104.6
LOS by Move:	C-	E	E	F	C	B	F	D+	B	D-	E	F
HCM2kAvgQ:	6	40	40	9	7	10	19	9	1	4	15	30

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #84: Bowers Ave & Kifer Rd



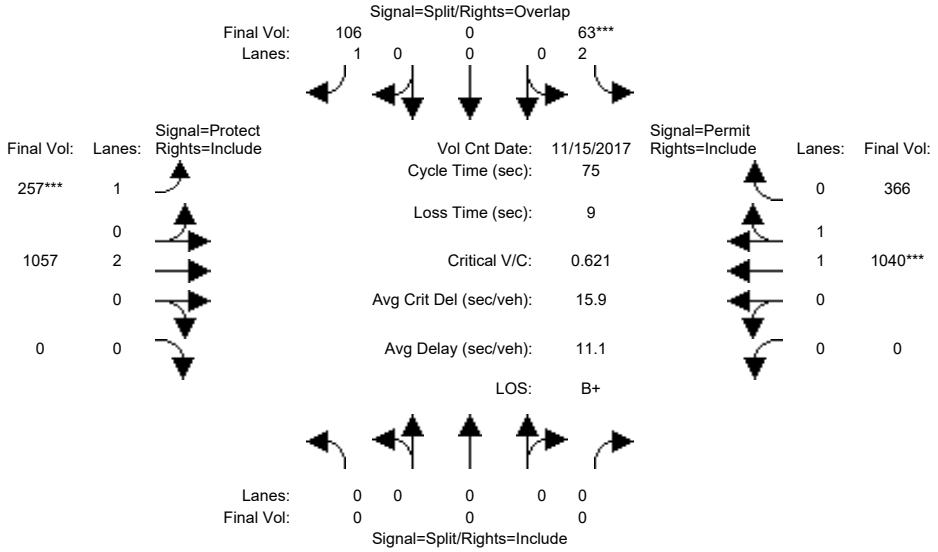
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	80	558	53	626	1832	162	430	945	500	198	444	515
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	558	53	626	1832	162	430	945	500	198	444	515
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	558	53	626	1832	162	430	945	500	198	444	515
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	81	564	54	632	1851	164	434	955	505	200	448	520
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	564	54	632	1851	164	434	955	505	200	448	520
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	564	54	632	1851	164	434	955	505	200	448	520
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.82	0.18	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3379	321	3150	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.20	0.49	0.09	0.25	0.25	0.29	0.11	0.12	0.30
Crit Moves:	****				****		****				****	
Green Time:	5.5	29.1	29.1	35.0	58.5	88.3	29.8	30.2	35.8	13.8	14.2	49.1
Volume/Cap:	1.00	0.69	0.69	0.69	1.00	0.13	1.00	1.00	0.97	1.00	1.00	0.73
Uniform Del:	57.2	41.4	41.4	37.7	30.7	4.6	45.1	44.8	41.6	53.1	52.9	29.8
IncremntDel:	99.8	2.3	2.3	2.2	20.7	0.0	43.0	28.4	31.3	62.7	42.3	3.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.79	0.79	0.73	0.37	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	155.2	34.8	34.8	29.6	32.0	0.0	88.1	73.2	72.8	115.8	95.2	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	155.2	34.8	34.8	29.6	32.0	0.0	88.1	73.2	72.8	115.8	95.2	33.5
LOS by Move:	F	C-	C-	C	C	A	F	E	E	F	F	C-
HCM2kAvgQ:	4	9	9	10	34	0	20	20	22	10	10	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #85: Corvin Dr & Kifer Rd



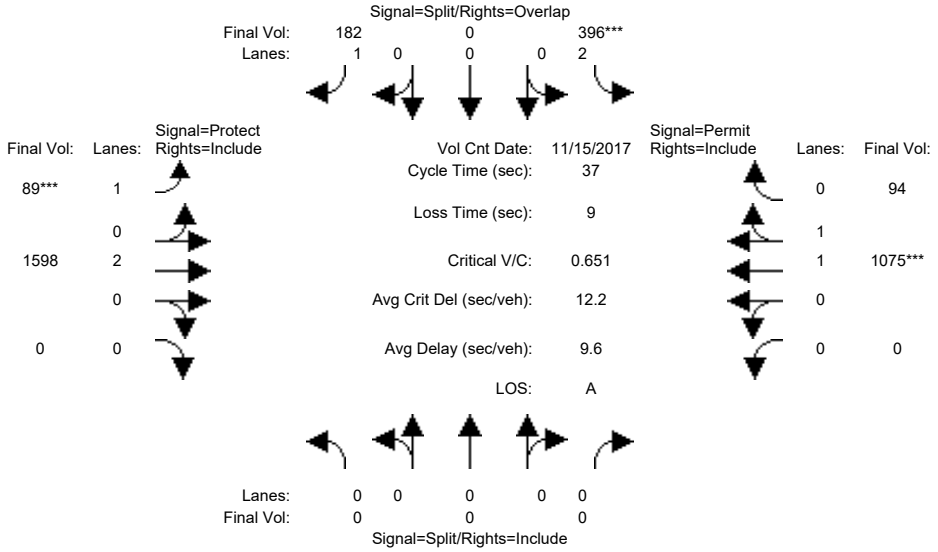
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	57	0	95	231	951	0	0	936	329
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	57	0	95	231	951	0	0	936	329
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	57	0	95	231	951	0	0	936	329
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	63	0	106	257	1057	0	0	1040	366
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	63	0	106	257	1057	0	0	1040	366
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	63	0	106	257	1057	0	0	1040	366
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.47	0.53
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2737	962
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.06	0.15	0.28	0.00	0.00	0.38	0.38
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	7.3	0.0	23.6	16.4	58.7	0.0	0.0	42.4	42.4
Volume/Cap:	0.00	0.00	0.00	0.21	0.00	0.19	0.67	0.36	0.00	0.00	0.67	0.67
Uniform Del:	0.0	0.0	0.0	31.2	0.0	18.7	26.9	2.4	0.0	0.0	11.5	11.5
IncremntDel:	0.0	0.0	0.0	0.3	0.0	0.2	4.7	0.1	0.0	0.0	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	31.5	0.0	18.9	31.5	2.5	0.0	0.0	12.3	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.5	0.0	18.9	31.5	2.5	0.0	0.0	12.3	12.3
LOS by Move:	A	A	A	C	A	B-	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	1	0	2	6	4	0	0	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #85: Corvin Dr & Kifer Rd



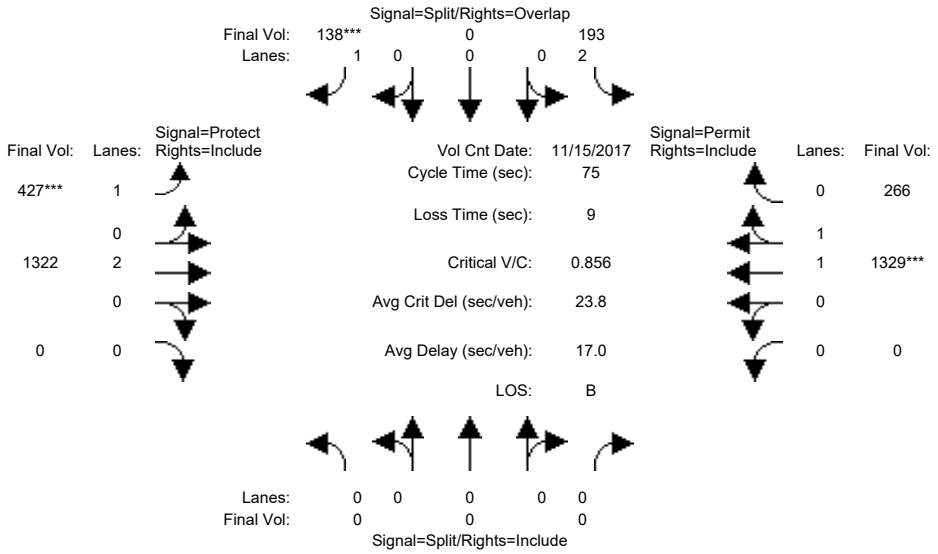
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	352	0	162	79	1422	0	0	957	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	352	0	162	79	1422	0	0	957	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	352	0	162	79	1422	0	0	957	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	396	0	182	89	1598	0	0	1075	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	396	0	182	89	1598	0	0	1075	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	396	0	182	89	1598	0	0	1075	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.83	0.17
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3401	299
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.10	0.05	0.42	0.00	0.00	0.32	0.32
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	6.5	0.0	11.5	5.0	21.5	0.0	0.0	16.5	16.5
Volume/Cap:	0.00	0.00	0.00	0.71	0.00	0.33	0.38	0.72	0.00	0.00	0.71	0.71
Uniform Del:	0.0	0.0	0.0	14.3	0.0	9.8	14.6	5.6	0.0	0.0	8.3	8.3
IncremntDel:	0.0	0.0	0.0	4.3	0.0	0.4	1.0	1.2	0.0	0.0	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	18.6	0.0	10.1	15.6	6.9	0.0	0.0	9.8	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	18.6	0.0	10.1	15.6	6.9	0.0	0.0	9.8	9.8
LOS by Move:	A	A	A	B-	A	B+	B	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	2	1	7	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #85: Corvin Dr & Kifer Rd



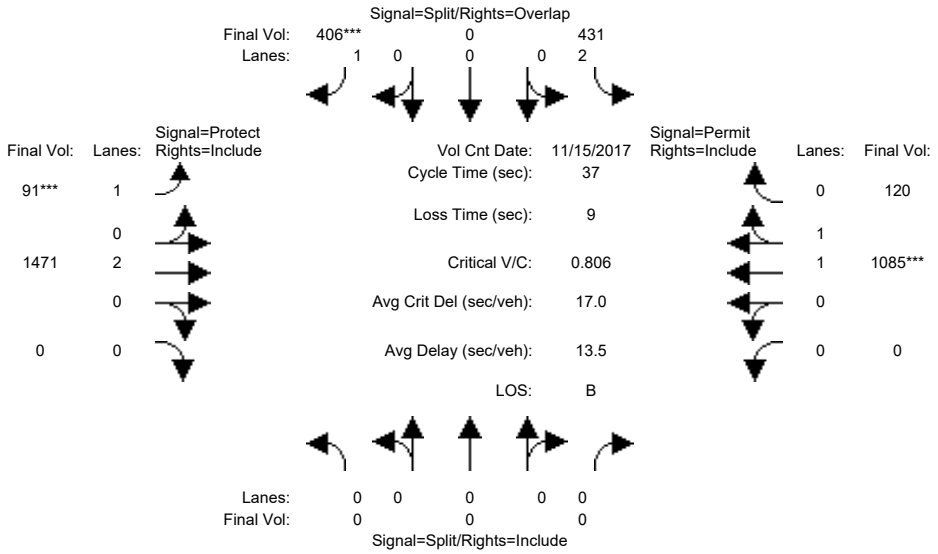
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	174	0	124	384	1190	0	0	1196	239
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	174	0	124	384	1190	0	0	1196	239
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	174	0	124	384	1190	0	0	1196	239
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	193	0	138	427	1322	0	0	1329	266
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	193	0	138	427	1322	0	0	1329	266
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	193	0	138	427	1322	0	0	1329	266
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.66	0.34
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3083	616
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.00	0.08	0.24	0.35	0.00	0.00	0.43	0.43
Crit Moves:						****	****				****	
Green Time:	0.0	0.0	0.0	6.9	0.0	28.3	21.4	59.1	0.0	0.0	37.7	37.7
Volume/Cap:	0.00	0.00	0.00	0.67	0.00	0.21	0.86	0.44	0.00	0.00	0.86	0.86
Uniform Del:	0.0	0.0	0.0	32.9	0.0	15.8	25.4	2.6	0.0	0.0	16.3	16.3
IncremntDel:	0.0	0.0	0.0	5.9	0.0	0.2	13.7	0.1	0.0	0.0	4.2	4.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	38.8	0.0	16.0	39.1	2.7	0.0	0.0	20.4	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	38.8	0.0	16.0	39.1	2.7	0.0	0.0	20.4	20.4
LOS by Move:	A	A	A	D+	A	B	D	A	A	A	C+	C+
HCM2kAvgQ:	0	0	0	3	0	2	11	5	0	0	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #85: Corvin Dr & Kifer Rd



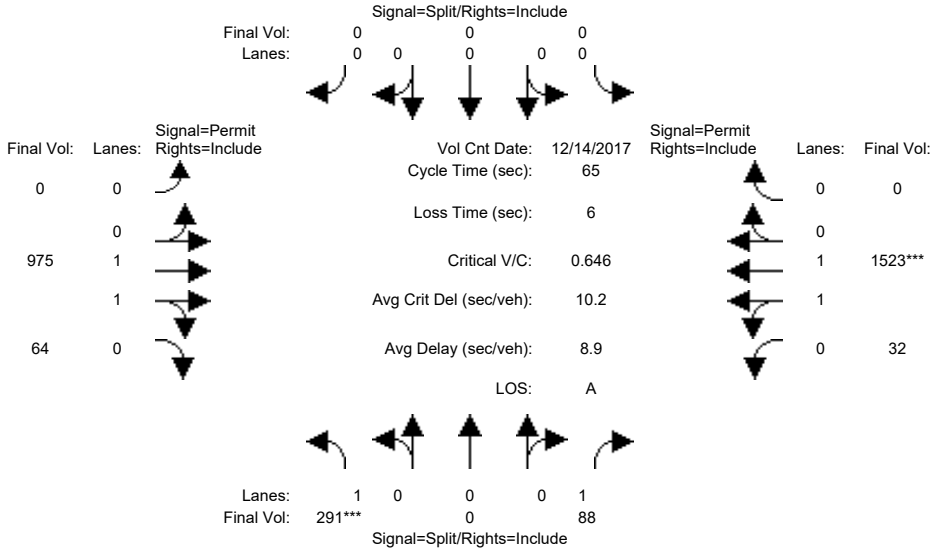
Street Name:	Corvin Dr						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	5	0	5	5	10	0	0	10	10
Y+R:	4.0	4.0	4.0	5.0	5.0	5.0	5.5	5.5	4.0	4.0	5.5	5.5
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	0	0	0	384	0	361	81	1309	0	0	966	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	384	0	361	81	1309	0	0	966	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	384	0	361	81	1309	0	0	966	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	431	0	406	91	1471	0	0	1085	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	431	0	406	91	1471	0	0	1085	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	431	0	406	91	1471	0	0	1085	120
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.80	0.20
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	3331	369
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.23	0.05	0.39	0.00	0.00	0.33	0.33
Crit Moves:						****	****				****	
Green Time:	0.0	0.0	0.0	9.6	0.0	14.6	5.0	18.4	0.0	0.0	13.4	13.4
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.59	0.38	0.78	0.00	0.00	0.90	0.90
Uniform Del:	0.0	0.0	0.0	11.8	0.0	8.9	14.6	7.6	0.0	0.0	11.1	11.1
IncremntDel:	0.0	0.0	0.0	0.7	0.0	1.3	1.0	2.1	0.0	0.0	8.3	8.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	12.5	0.0	10.2	15.6	9.7	0.0	0.0	19.4	19.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.5	0.0	10.2	15.6	9.7	0.0	0.0	19.4	19.4
LOS by Move:	A	A	A	B	A	B+	B	A	A	A	B-	B-
HCM2kAvgQ:	0	0	0	2	0	4	1	7	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #86: Calabazas Blvd & Monroe St



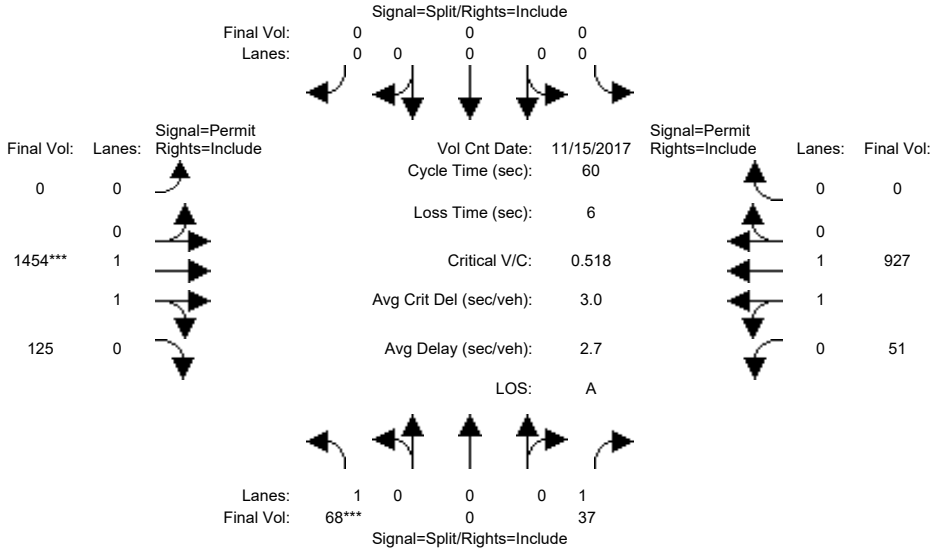
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 14 Dec 2017 << 7:15 AM - 8:15 AM												
Base Vol:	201	0	61	0	0	0	0	673	44	22	1051	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	0	61	0	0	0	0	673	44	22	1051	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	0	61	0	0	0	0	673	44	22	1051	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	291	0	88	0	0	0	0	975	64	32	1523	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	291	0	88	0	0	0	0	975	64	32	1523	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	291	0	88	0	0	0	0	975	64	32	1523	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.97	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.87	0.13	0.04	1.96	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3473	227	76	3624	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.05	0.00	0.00	0.00	0.00	0.28	0.28	0.42	0.42	0.00
Crit Moves:	****										****	
Green Time:	16.7	0.0	16.7	0.0	0.0	0.0	0.0	42.3	42.3	42.3	42.3	0.0
Volume/Cap:	0.65	0.00	0.20	0.00	0.00	0.00	0.00	0.43	0.43	0.65	0.65	0.00
Uniform Del:	21.5	0.0	18.9	0.0	0.0	0.0	0.0	5.5	5.5	6.9	6.9	0.0
IncremntDel:	3.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	24.7	0.0	19.1	0.0	0.0	0.0	0.0	5.7	5.7	7.5	7.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.7	0.0	19.1	0.0	0.0	0.0	0.0	5.7	5.7	7.5	7.5	0.0
LOS by Move:	C	A	B-	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	7	0	2	0	0	0	0	5	5	10	10	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #86: Calabazas Blvd & Monroe St



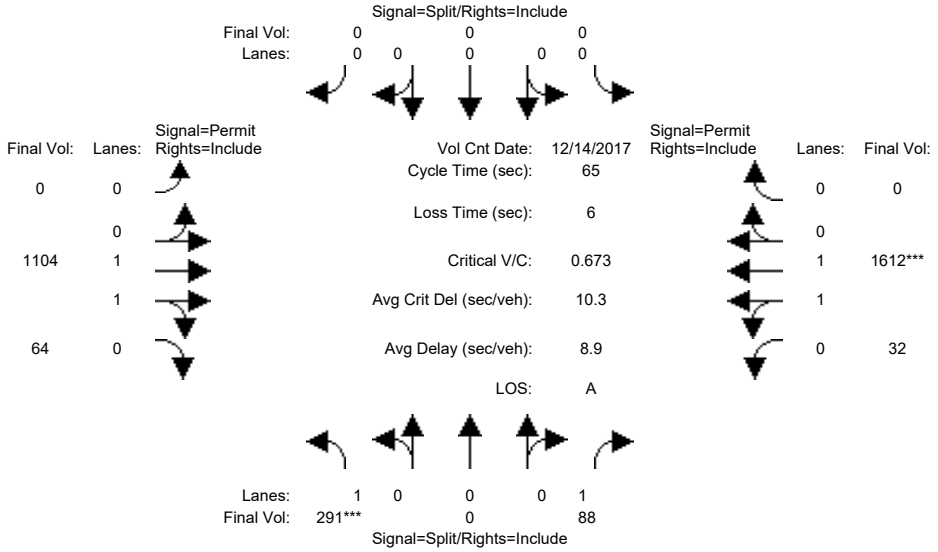
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	65	0	35	0	0	0	0	1381	119	48	881	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	0	35	0	0	0	0	1381	119	48	881	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	35	0	0	0	0	1381	119	48	881	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	0	37	0	0	0	0	1454	125	51	927	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	0	37	0	0	0	0	1454	125	51	927	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	0	37	0	0	0	0	1454	125	51	927	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.98	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.84	0.16	0.11	1.89	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3406	294	191	3509	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.43	0.43	0.26	0.26	0.00
Crit Moves:	****							****				
Green Time:	4.5	0.0	4.5	0.0	0.0	0.0	0.0	49.5	49.5	49.5	49.5	0.0
Volume/Cap:	0.52	0.00	0.28	0.00	0.00	0.00	0.00	0.52	0.52	0.32	0.32	0.00
Uniform Del:	26.7	0.0	26.2	0.0	0.0	0.0	0.0	1.6	1.6	1.3	1.3	0.0
IncremntDel:	3.6	0.0	1.2	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	30.3	0.0	27.3	0.0	0.0	0.0	0.0	1.8	1.8	1.3	1.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	0.0	27.3	0.0	0.0	0.0	0.0	1.8	1.8	1.3	1.3	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	2	0	1	0	0	0	0	4	4	2	2	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #86: Calabazas Blvd & Monroe St



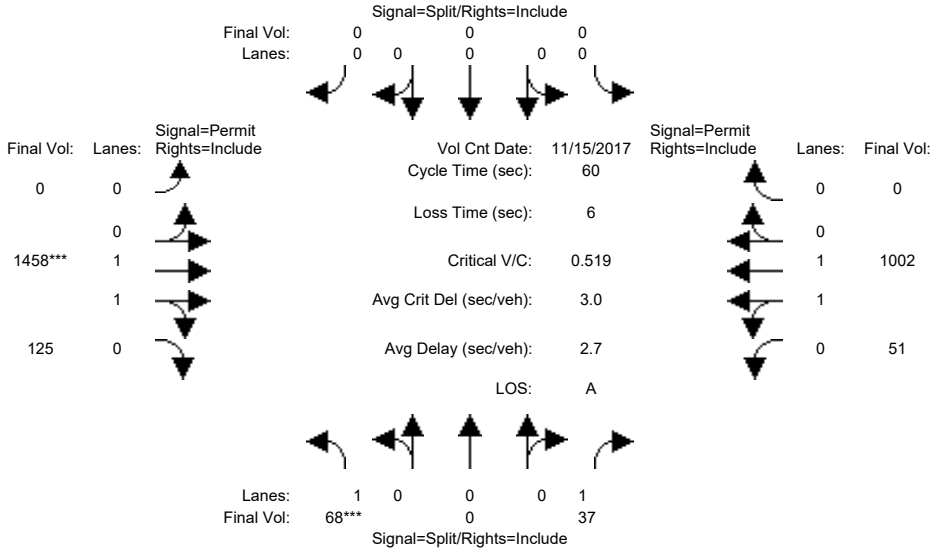
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 14 Dec 2017 << 7:15 AM - 8:15 AM												
Base Vol:	201	0	61	0	0	0	0	762	44	22	1112	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	0	61	0	0	0	0	762	44	22	1112	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	0	61	0	0	0	0	762	44	22	1112	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	291	0	88	0	0	0	0	1104	64	32	1612	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	291	0	88	0	0	0	0	1104	64	32	1612	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	291	0	88	0	0	0	0	1104	64	32	1612	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.97	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.89	0.11	0.04	1.96	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3498	202	72	3628	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.05	0.00	0.00	0.00	0.00	0.32	0.32	0.44	0.44	0.00
Crit Moves:	****										****	
Green Time:	16.1	0.0	16.1	0.0	0.0	0.0	0.0	42.9	42.9	42.9	42.9	0.0
Volume/Cap:	0.67	0.00	0.20	0.00	0.00	0.00	0.00	0.48	0.48	0.67	0.67	0.00
Uniform Del:	22.1	0.0	19.4	0.0	0.0	0.0	0.0	5.5	5.5	6.7	6.7	0.0
IncremntDel:	4.1	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	26.2	0.0	19.6	0.0	0.0	0.0	0.0	5.6	5.6	7.5	7.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	19.6	0.0	0.0	0.0	0.0	5.6	5.6	7.5	7.5	0.0
LOS by Move:	C	A	B-	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	7	0	2	0	0	0	0	6	6	11	11	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #86: Calabazas Blvd & Monroe St



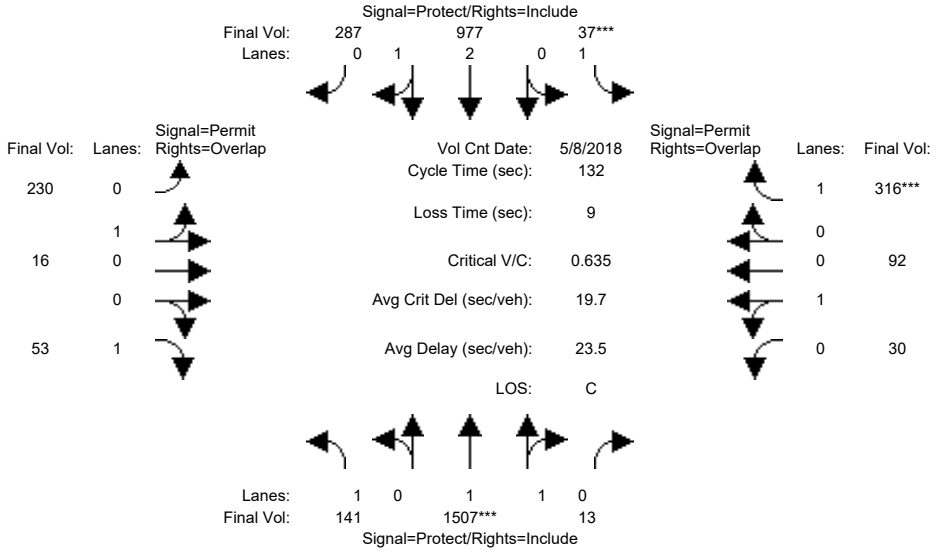
Street Name:	Calabazas Blvd						Monroe St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	4	0	4	0	0	0	0	10	10	10	10	0
Y+R:	5.5	5.5	5.5	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Volume Module: >> Count Date: 15 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	65	0	35	0	0	0	0	1385	119	48	952	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	0	35	0	0	0	0	1385	119	48	952	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	35	0	0	0	0	1385	119	48	952	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	0	37	0	0	0	0	1458	125	51	1002	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	0	37	0	0	0	0	1458	125	51	1002	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	0	37	0	0	0	0	1458	125	51	1002	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.98	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.84	0.16	0.10	1.90	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3407	293	178	3522	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.43	0.43	0.28	0.28	0.00
Crit Moves:	****							****				
Green Time:	4.5	0.0	4.5	0.0	0.0	0.0	0.0	49.5	49.5	49.5	49.5	0.0
Volume/Cap:	0.52	0.00	0.28	0.00	0.00	0.00	0.00	0.52	0.52	0.35	0.35	0.00
Uniform Del:	26.7	0.0	26.2	0.0	0.0	0.0	0.0	1.6	1.6	1.3	1.3	0.0
IncremntDel:	3.6	0.0	1.2	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	30.3	0.0	27.4	0.0	0.0	0.0	0.0	1.8	1.8	1.4	1.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	0.0	27.4	0.0	0.0	0.0	0.0	1.8	1.8	1.4	1.4	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	2	0	1	0	0	0	0	4	4	3	3	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



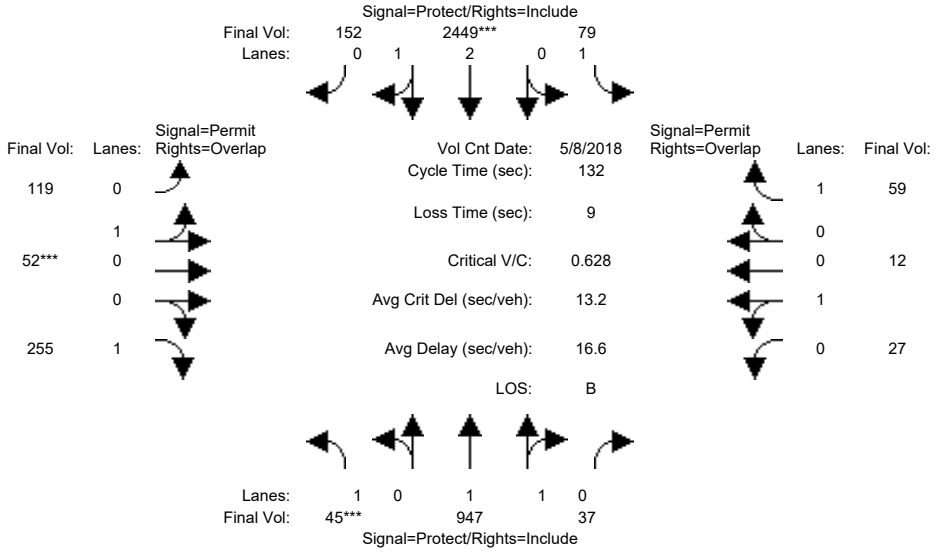
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	141	1507	13	37	977	287	230	16	53	30	92	316
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	141	1507	13	37	977	287	230	16	53	30	92	316
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	1507	13	37	977	287	230	16	53	30	92	316
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	1507	13	37	977	287	230	16	53	30	92	316
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	1507	13	37	977	287	230	16	53	30	92	316
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	1507	13	37	977	287	230	16	53	30	92	316
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.29	0.71	0.93	0.07	1.00	0.25	0.75	1.00
Final Sat.:	1750	3668	32	1750	4327	1271	1683	117	1750	443	1357	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.41	0.41	0.02	0.23	0.23	0.14	0.14	0.03	0.07	0.07	0.18
Crit Moves:		****		****								****
Green Time:	25.1	88.5	88.5	7.0	70.4	70.4	27.5	27.5	52.6	27.5	27.5	34.5
Volume/Cap:	0.42	0.61	0.61	0.40	0.42	0.42	0.66	0.66	0.08	0.33	0.33	0.69
Uniform Del:	47.1	12.2	12.2	60.5	18.6	18.6	47.9	47.9	24.6	44.4	44.4	44.0
IncremntDel:	0.9	0.5	0.5	2.8	0.1	0.1	4.2	4.2	0.0	0.5	0.5	4.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.9	12.6	12.6	63.3	18.7	18.7	52.1	52.1	24.7	44.9	44.9	48.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.9	12.6	12.6	63.3	18.7	18.7	52.1	52.1	24.7	44.9	44.9	48.5
LOS by Move:	D	B	B	E	B-	B-	D-	D-	C	D	D	D
HCM2kAvgQ:	5	17	17	2	10	10	10	10	1	4	4	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



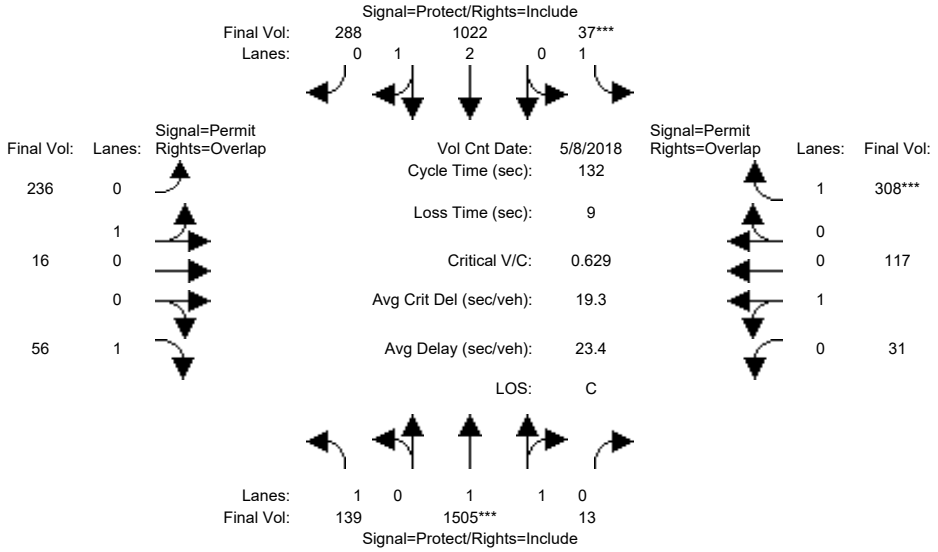
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	45	947	37	79	2449	152	119	52	255	27	12	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	947	37	79	2449	152	119	52	255	27	12	59
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	947	37	79	2449	152	119	52	255	27	12	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	947	37	79	2449	152	119	52	255	27	12	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	947	37	79	2449	152	119	52	255	27	12	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	947	37	79	2449	152	119	52	255	27	12	59
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.92	0.08	1.00	2.82	0.18	0.70	0.30	1.00	0.69	0.31	1.00
Final Sat.:	1750	3561	139	1750	5272	327	1253	547	1750	1246	554	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.05	0.46	0.46	0.10	0.10	0.15	0.02	0.02	0.03
Crit Moves:	****				****			****				
Green Time:	7.0	86.1	86.1	17.2	96.3	96.3	19.7	19.7	26.7	19.7	19.7	36.9
Volume/Cap:	0.48	0.41	0.41	0.35	0.64	0.64	0.64	0.64	0.72	0.15	0.15	0.12
Uniform Del:	60.7	10.9	10.9	52.3	9.0	9.0	52.8	52.8	49.2	48.8	48.8	35.5
IncremntDel:	3.9	0.1	0.1	0.9	0.3	0.3	5.0	5.0	7.1	0.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.7	11.0	11.0	53.2	9.4	9.4	57.8	57.8	56.2	49.1	49.1	35.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.7	11.0	11.0	53.2	9.4	9.4	57.8	57.8	56.2	49.1	49.1	35.6
LOS by Move:	E	B+	B+	D-	A	A	E+	E+	E+	D	D	D+
HCM2kAvgQ:	2	9	9	3	18	18	8	8	12	1	1	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



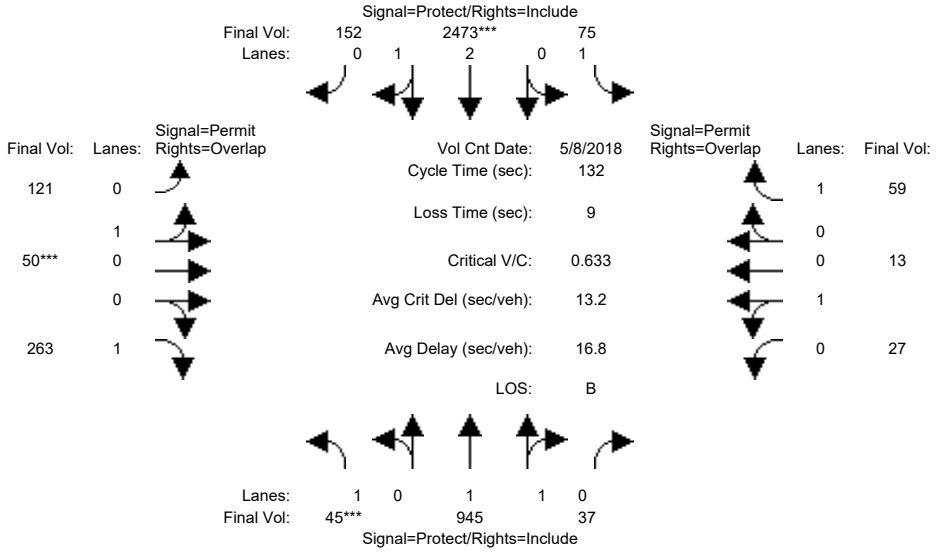
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	139	1505	13	37	1022	288	236	16	56	31	117	308
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	1505	13	37	1022	288	236	16	56	31	117	308
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	1505	13	37	1022	288	236	16	56	31	117	308
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	1505	13	37	1022	288	236	16	56	31	117	308
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1505	13	37	1022	288	236	16	56	31	117	308
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	1505	13	37	1022	288	236	16	56	31	117	308
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.98	0.02	1.00	2.32	0.68	0.94	0.06	1.00	0.21	0.79	1.00
Final Sat.:	1750	3668	32	1750	4367	1231	1686	114	1750	377	1423	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.41	0.41	0.02	0.23	0.23	0.14	0.14	0.03	0.08	0.08	0.18
Crit Moves:		****		****								****
Green Time:	24.4	89.2	89.2	7.0	71.9	71.9	26.8	26.8	51.1	26.8	26.8	33.8
Volume/Cap:	0.43	0.61	0.61	0.40	0.43	0.43	0.69	0.69	0.08	0.41	0.41	0.69
Uniform Del:	47.6	11.7	11.7	60.5	17.9	17.9	48.8	48.8	25.6	45.7	45.7	44.4
IncremntDel:	0.9	0.4	0.4	2.8	0.1	0.1	5.6	5.6	0.1	0.7	0.7	4.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.6	12.2	12.2	63.3	18.0	18.0	54.4	54.4	25.6	46.5	46.5	48.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	12.2	12.2	63.3	18.0	18.0	54.4	54.4	25.6	46.5	46.5	48.9
LOS by Move:	D	B	B	E	B	B	D-	D-	C	D	D	D
HCM2kAvgQ:	5	16	16	2	10	10	11	11	2	6	6	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #91: Fair Oaks Ave & Ahwanee Ave



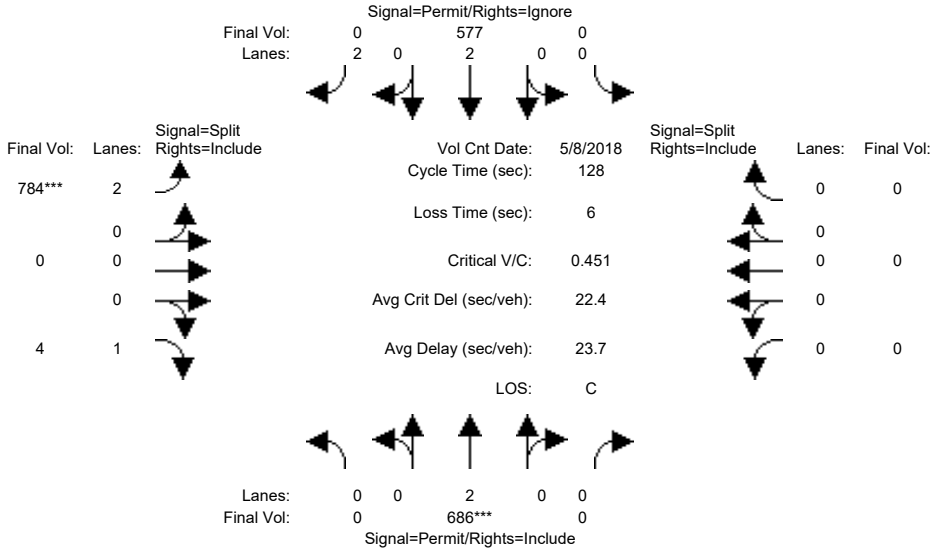
Street Name:	Fair Oaks Ave						Ahwanee Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	45	945	37	75	2473	152	121	50	263	27	13	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	945	37	75	2473	152	121	50	263	27	13	59
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	945	37	75	2473	152	121	50	263	27	13	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	945	37	75	2473	152	121	50	263	27	13	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	945	37	75	2473	152	121	50	263	27	13	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	945	37	75	2473	152	121	50	263	27	13	59
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.92	0.08	1.00	2.82	0.18	0.71	0.29	1.00	0.67	0.33	1.00
Final Sat.:	1750	3560	139	1750	5275	324	1274	526	1750	1215	585	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.04	0.47	0.47	0.10	0.10	0.15	0.02	0.02	0.03
Crit Moves:	****				****			****				
Green Time:	7.0	86.2	86.2	17.2	96.5	96.5	19.5	19.5	26.5	19.5	19.5	36.8
Volume/Cap:	0.48	0.41	0.41	0.33	0.64	0.64	0.64	0.64	0.75	0.15	0.15	0.12
Uniform Del:	60.7	10.8	10.8	52.1	9.0	9.0	52.9	52.9	49.6	49.0	49.0	35.5
IncremntDel:	3.9	0.1	0.1	0.8	0.4	0.4	5.2	5.2	8.5	0.3	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.7	10.9	10.9	53.0	9.4	9.4	58.2	58.2	58.1	49.3	49.3	35.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.7	10.9	10.9	53.0	9.4	9.4	58.2	58.2	58.1	49.3	49.3	35.7
LOS by Move:	E	B+	B+	D-	A	A	E+	E+	E+	D	D	D+
HCM2kAvgQ:	2	9	9	3	18	18	8	8	12	2	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #92: Fair Oaks Ave & Wolfe Rd



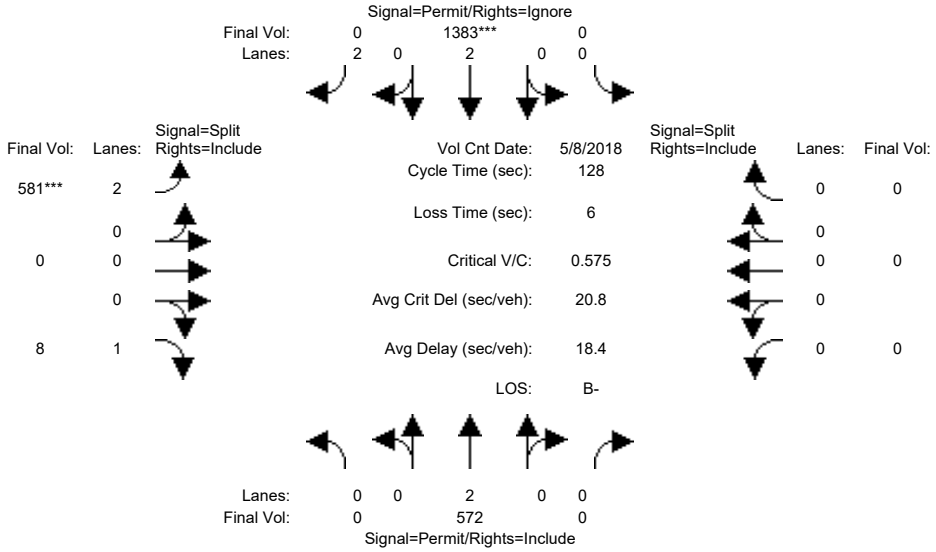
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	686	0	0	577	574	784	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	686	0	0	577	574	784	0	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	686	0	0	577	574	784	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	686	0	0	577	0	784	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	686	0	0	577	0	784	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	686	0	0	577	0	784	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.00	0.00	0.15	0.00	0.25	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	51.3	0.0	0.0	51.3	0.0	70.7	0.0	70.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.45	0.00	0.00	0.38	0.00	0.45	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	28.1	0.0	0.0	27.1	0.0	17.1	0.0	12.8	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	28.3	0.0	0.0	27.3	0.0	17.3	0.0	12.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.3	0.0	0.0	27.3	0.0	17.3	0.0	12.9	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B	A	B	A	A	A
HCM2kAvgQ:	0	9	0	0	8	0	11	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #92: Fair Oaks Ave & Wolfe Rd



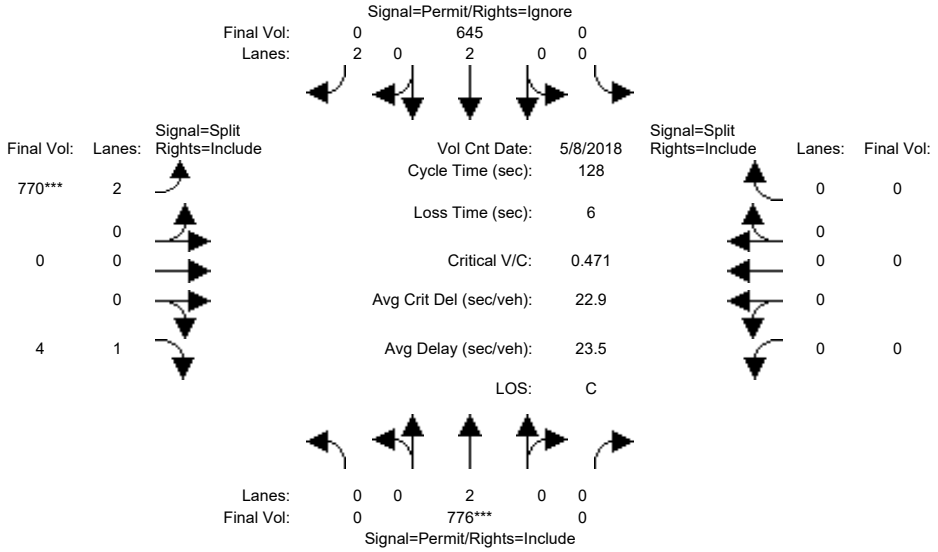
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	572	0	0	1383	1080	581	0	8	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	572	0	0	1383	1080	581	0	8	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	572	0	0	1383	1080	581	0	8	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	572	0	0	1383	0	581	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	572	0	0	1383	0	581	0	8	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	572	0	0	1383	0	581	0	8	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.36	0.00	0.18	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	81.0	0.0	0.0	81.0	0.0	41.0	0.0	41.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.24	0.00	0.00	0.58	0.00	0.58	0.00	0.01	0.00	0.00	0.00
Uniform Del:	0.0	10.2	0.0	0.0	13.6	0.0	36.2	0.0	29.7	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.3	0.0	0.8	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	10.2	0.0	0.0	13.9	0.0	37.0	0.0	29.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	10.2	0.0	0.0	13.9	0.0	37.0	0.0	29.7	0.0	0.0	0.0
LOS by Move:	A	B+	A	A	B	A	D+	A	C	A	A	A
HCM2kAvgQ:	0	5	0	0	15	0	12	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #92: Fair Oaks Ave & Wolfe Rd



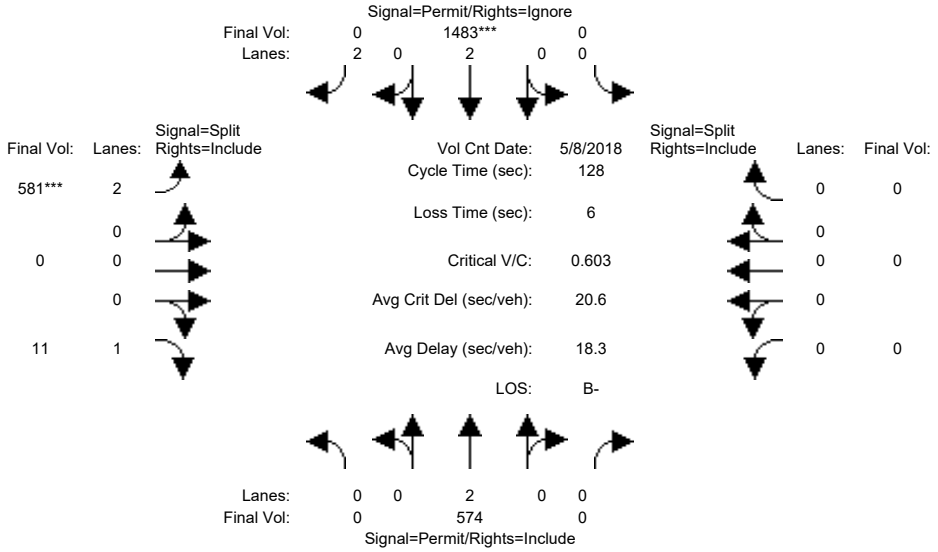
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 7:45 AM - 8:45 AM												
Base Vol:	0	776	0	0	645	574	770	0	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	776	0	0	645	574	770	0	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	776	0	0	645	574	770	0	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	776	0	0	645	0	770	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	776	0	0	645	0	770	0	4	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	776	0	0	645	0	770	0	4	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.00	0.00	0.17	0.00	0.24	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	55.5	0.0	0.0	55.5	0.0	66.5	0.0	66.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.47	0.00	0.00	0.39	0.00	0.47	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	25.8	0.0	0.0	24.7	0.0	19.6	0.0	14.8	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	26.0	0.0	0.0	24.9	0.0	19.8	0.0	14.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.0	0.0	0.0	24.9	0.0	19.8	0.0	14.8	0.0	0.0	0.0
LOS by Move:	A	C	A	A	C	A	B-	A	B	A	A	A
HCM2kAvgQ:	0	10	0	0	8	0	11	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #92: Fair Oaks Ave & Wolfe Rd



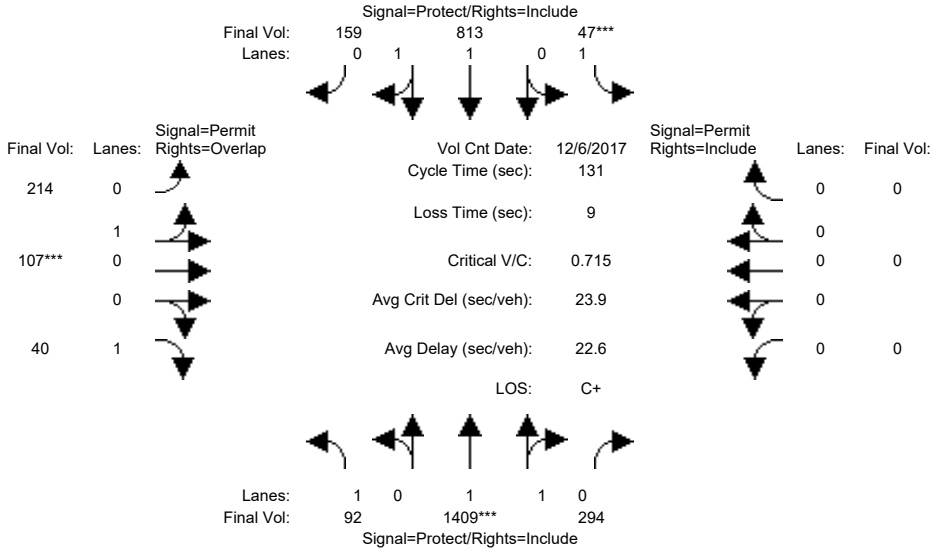
Street Name:	Fair Oaks Ave						Wolfe Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	0	0	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:00 PM - 6:00 PM												
Base Vol:	0	574	0	0	1483	1080	581	0	11	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	574	0	0	1483	1080	581	0	11	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	574	0	0	1483	1080	581	0	11	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	574	0	0	1483	0	581	0	11	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	574	0	0	1483	0	581	0	11	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	574	0	0	1483	0	581	0	11	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.83	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	0	0	3800	3150	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.39	0.00	0.18	0.00	0.01	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	82.8	0.0	0.0	82.8	0.0	39.2	0.0	39.2	0.0	0.0	0.0
Volume/Cap:	0.00	0.23	0.00	0.00	0.60	0.00	0.60	0.00	0.02	0.00	0.00	0.00
Uniform Del:	0.0	9.4	0.0	0.0	13.1	0.0	37.8	0.0	31.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.0	1.1	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	9.4	0.0	0.0	13.5	0.0	38.9	0.0	31.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.4	0.0	0.0	13.5	0.0	38.9	0.0	31.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B	A	D+	A	C	A	A	A
HCM2kAvgQ:	0	4	0	0	16	0	12	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #95: Fair Oaks Ave & California Ave



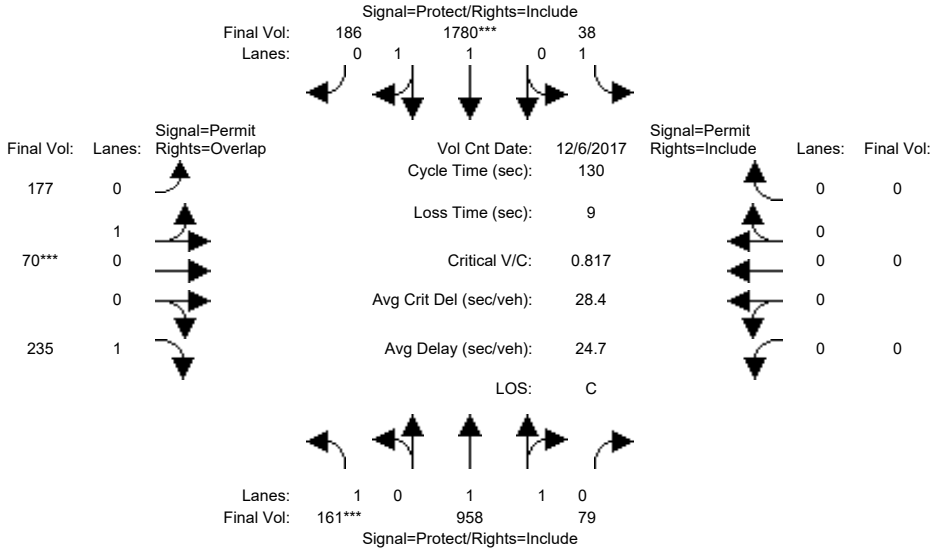
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	92	1409	294	47	813	159	214	107	40	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	1409	294	47	813	159	214	107	40	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	1409	294	47	813	159	214	107	40	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	1409	294	47	813	159	214	107	40	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	1409	294	47	813	159	214	107	40	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	1409	294	47	813	159	214	107	40	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.65	0.35	1.00	1.66	0.34	0.67	0.33	1.00	0.00	0.00	0.00
Final Sat.:	1750	3061	639	1750	3094	605	1200	600	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.46	0.46	0.03	0.26	0.26	0.18	0.18	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	15.2	82.9	82.9	7.0	74.7	74.7	32.1	32.1	47.3	0.0	0.0	0.0
Volume/Cap:	0.45	0.73	0.73	0.50	0.46	0.46	0.73	0.73	0.06	0.00	0.00	0.00
Uniform Del:	54.0	16.4	16.4	60.3	16.4	16.4	45.4	45.4	27.4	0.0	0.0	0.0
IncremntDel:	1.6	1.2	1.2	4.3	0.2	0.2	6.0	6.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	55.6	17.5	17.5	64.6	16.6	16.6	51.4	51.4	27.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.6	17.5	17.5	64.6	16.6	16.6	51.4	51.4	27.4	0.0	0.0	0.0
LOS by Move:	E+	B	B	E	B	B	D-	D-	C	A	A	A
HCM2kAvgQ:	3	22	22	2	11	11	13	13	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #95: Fair Oaks Ave & California Ave



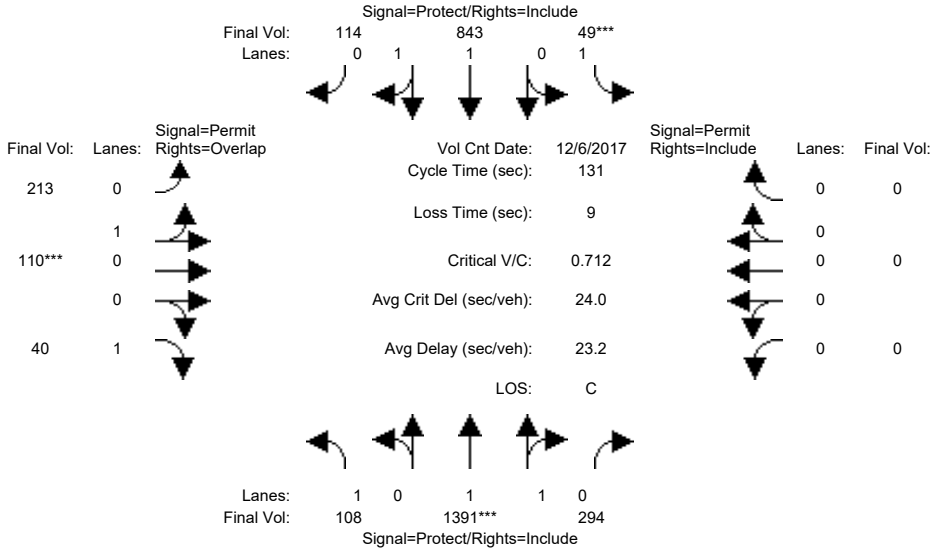
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	161	958	79	38	1780	186	177	70	235	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	958	79	38	1780	186	177	70	235	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	958	79	38	1780	186	177	70	235	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	958	79	38	1780	186	177	70	235	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	958	79	38	1780	186	177	70	235	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	958	79	38	1780	186	177	70	235	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	1.81	0.19	0.72	0.28	1.00	0.00	0.00	0.00
Final Sat.:	1750	3418	282	1750	3350	350	1290	510	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.28	0.28	0.02	0.53	0.53	0.14	0.14	0.13	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	14.6	83.2	83.2	16.0	84.5	84.5	21.8	21.8	36.5	0.0	0.0	0.0
Volume/Cap:	0.82	0.44	0.44	0.18	0.82	0.82	0.82	0.82	0.48	0.00	0.00	0.00
Uniform Del:	56.4	11.7	11.7	51.1	17.0	17.0	52.2	52.2	38.9	0.0	0.0	0.0
IncremntDel:	22.7	0.1	0.1	0.4	2.3	2.3	15.8	15.8	0.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	79.0	11.8	11.8	51.5	19.3	19.3	68.0	68.0	39.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.0	11.8	11.8	51.5	19.3	19.3	68.0	68.0	39.6	0.0	0.0	0.0
LOS by Move:	E-	B+	B+	D-	B-	B-	E	E	D	A	A	A
HCM2kAvgQ:	7	10	10	1	28	28	10	10	8	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #95: Fair Oaks Ave & California Ave



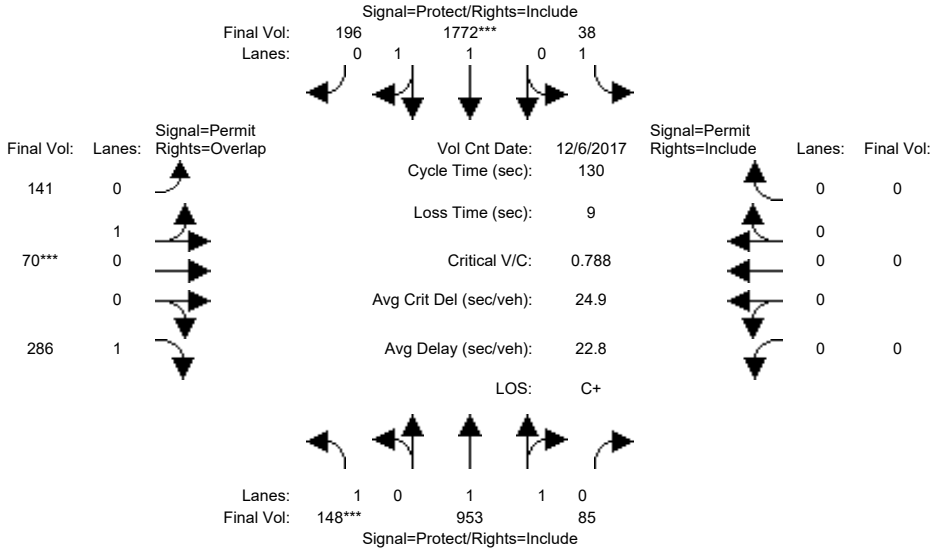
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	108	1391	294	49	843	114	213	110	40	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	1391	294	49	843	114	213	110	40	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	1391	294	49	843	114	213	110	40	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	1391	294	49	843	114	213	110	40	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	1391	294	49	843	114	213	110	40	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	1391	294	49	843	114	213	110	40	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.64	0.36	1.00	1.76	0.24	0.66	0.34	1.00	0.00	0.00	0.00
Final Sat.:	1750	3054	645	1750	3259	441	1187	613	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.46	0.46	0.03	0.26	0.26	0.18	0.18	0.02	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green Time:	17.2	82.5	82.5	7.0	72.3	72.3	32.5	32.5	49.7	0.0	0.0	0.0
Volume/Cap:	0.47	0.72	0.72	0.52	0.47	0.47	0.72	0.72	0.06	0.00	0.00	0.00
Uniform Del:	52.6	16.5	16.5	60.4	17.8	17.8	45.1	45.1	25.8	0.0	0.0	0.0
IncremntDel:	1.5	1.1	1.1	5.3	0.2	0.2	5.8	5.8	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	54.2	17.6	17.6	65.7	17.9	17.9	50.9	50.9	25.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.2	17.6	17.6	65.7	17.9	17.9	50.9	50.9	25.8	0.0	0.0	0.0
LOS by Move:	D-	B	B	E	B	B	D	D	C	A	A	A
HCM2kAvgQ:	4	22	22	2	11	11	13	13	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #95: Fair Oaks Ave & California Ave



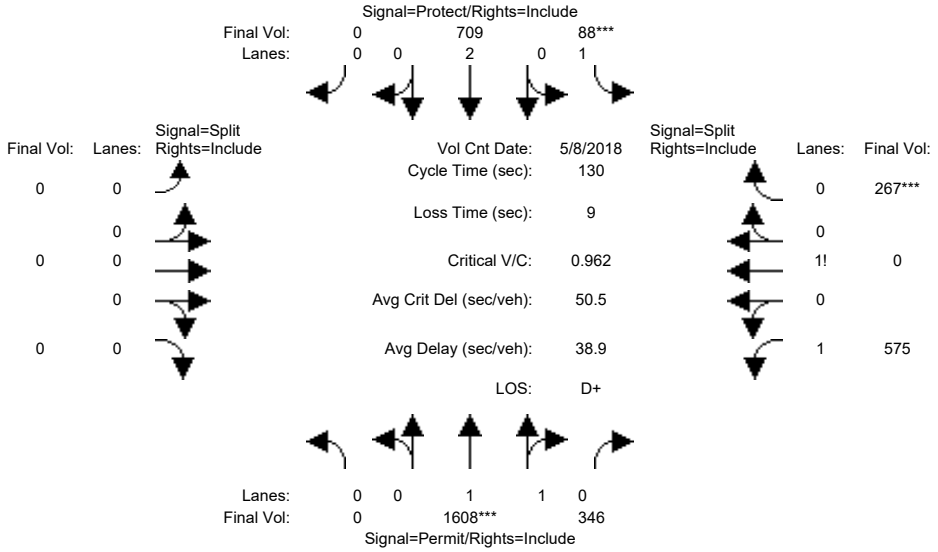
Street Name:	Fair Oaks Ave						California Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	148	953	85	38	1772	196	141	70	286	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	953	85	38	1772	196	141	70	286	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	953	85	38	1772	196	141	70	286	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	953	85	38	1772	196	141	70	286	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	953	85	38	1772	196	141	70	286	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	148	953	85	38	1772	196	141	70	286	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	1.83	0.17	1.00	1.80	0.20	0.67	0.33	1.00	0.00	0.00	0.00
Final Sat.:	1750	3397	303	1750	3331	368	1203	597	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.28	0.02	0.53	0.53	0.12	0.12	0.16	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	13.9	85.3	85.3	16.4	87.7	87.7	19.3	19.3	33.3	0.0	0.0	0.0
Volume/Cap:	0.79	0.43	0.43	0.17	0.79	0.79	0.79	0.79	0.64	0.00	0.00	0.00
Uniform Del:	56.6	10.7	10.7	50.8	14.7	14.7	53.4	53.4	43.0	0.0	0.0	0.0
IncremntDel:	19.6	0.1	0.1	0.4	1.7	1.7	14.4	14.4	3.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	76.2	10.8	10.8	51.1	16.4	16.4	67.8	67.8	46.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.2	10.8	10.8	51.1	16.4	16.4	67.8	67.8	46.1	0.0	0.0	0.0
LOS by Move:	E-	B+	B+	D-	B	B	E	E	D	A	A	A
HCM2kAvgQ:	6	9	9	1	26	26	9	9	11	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #96: Fair Oaks Ave & Kifer Rd



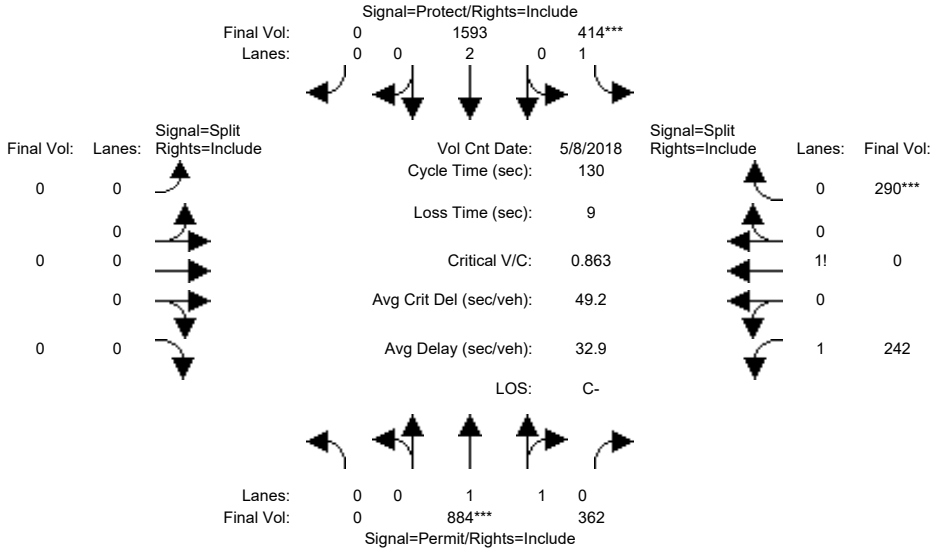
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1608	346	88	709	0	0	0	0	575	0	267
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1608	346	88	709	0	0	0	0	575	0	267
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1608	346	88	709	0	0	0	0	575	0	267
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1608	346	88	709	0	0	0	0	575	0	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1608	346	88	709	0	0	0	0	575	0	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1608	346	88	709	0	0	0	0	575	0	267
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.64	0.36	1.00	2.00	0.00	0.00	0.00	0.00	1.52	0.00	0.48
Final Sat.:	0	3044	655	1750	3800	0	0	0	0	2657	0	843
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.53	0.05	0.19	0.00	0.00	0.00	0.00	0.22	0.00	0.32
Crit Moves:		****		****								****
Green Time:	0.0	71.3	71.3	7.0	78.3	0.0	0.0	0.0	0.0	42.7	0.0	42.7
Volume/Cap:	0.00	0.96	0.96	0.93	0.31	0.00	0.00	0.00	0.00	0.66	0.00	0.96
Uniform Del:	0.0	28.1	28.1	61.3	12.7	0.0	0.0	0.0	0.0	37.4	0.0	42.9
IncremntDel:	0.0	12.5	12.5	71.1	0.1	0.0	0.0	0.0	0.0	1.3	0.0	22.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	40.7	40.7	132.4	12.7	0.0	0.0	0.0	0.0	38.6	0.0	64.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.7	40.7	132.4	12.7	0.0	0.0	0.0	0.0	38.6	0.0	64.8
LOS by Move:	A	D	D	F	B	A	A	A	A	D+	A	E
HCM2kAvgQ:	0	39	39	5	7	0	0	0	0	13	0	22

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #96: Fair Oaks Ave & Kifer Rd



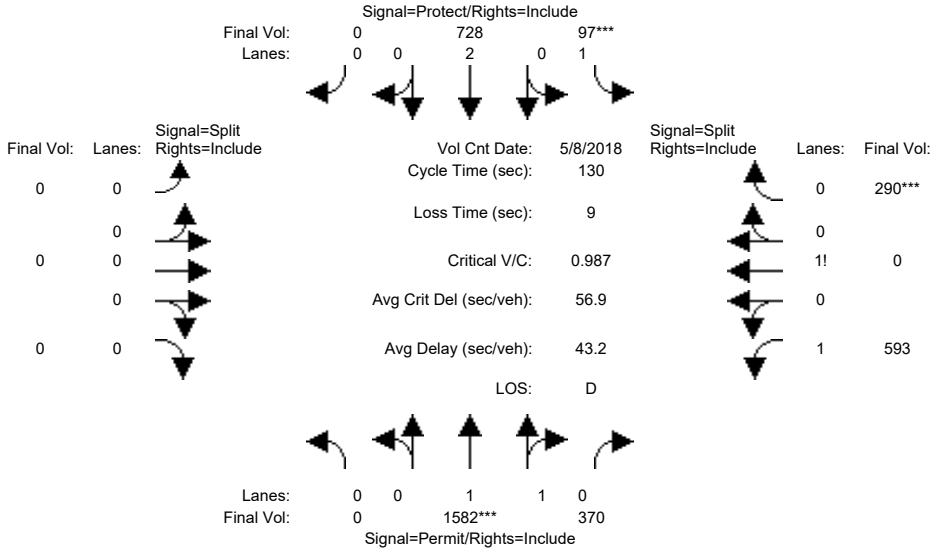
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	884	362	414	1593	0	0	0	0	242	0	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	884	362	414	1593	0	0	0	0	242	0	290
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	884	362	414	1593	0	0	0	0	242	0	290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	884	362	414	1593	0	0	0	0	242	0	290
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	884	362	414	1593	0	0	0	0	242	0	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	884	362	414	1593	0	0	0	0	242	0	290
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.40	0.60	1.00	2.00	0.00	0.00	0.00	0.00	1.30	0.00	0.70
Final Sat.:	0	2624	1075	1750	3800	0	0	0	0	2276	0	1259
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.34	0.24	0.42	0.00	0.00	0.00	0.00	0.11	0.00	0.23
Crit Moves:		****		****								****
Green Time:	0.0	50.7	50.7	35.6	86.3	0.0	0.0	0.0	0.0	34.7	0.0	34.7
Volume/Cap:	0.00	0.86	0.86	0.86	0.63	0.00	0.00	0.00	0.00	0.40	0.00	0.86
Uniform Del:	0.0	36.5	36.5	44.9	12.6	0.0	0.0	0.0	0.0	39.1	0.0	45.4
IncremntDel:	0.0	5.6	5.6	14.9	0.5	0.0	0.0	0.0	0.0	0.2	0.0	12.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	42.1	42.1	59.8	13.2	0.0	0.0	0.0	0.0	39.3	0.0	57.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	42.1	42.1	59.8	13.2	0.0	0.0	0.0	0.0	39.3	0.0	57.5
LOS by Move:	A	D	D	E+	B	A	A	A	A	D	A	E+
HCM2kAvgQ:	0	24	24	17	17	0	0	0	0	6	0	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #96: Fair Oaks Ave & Kifer Rd



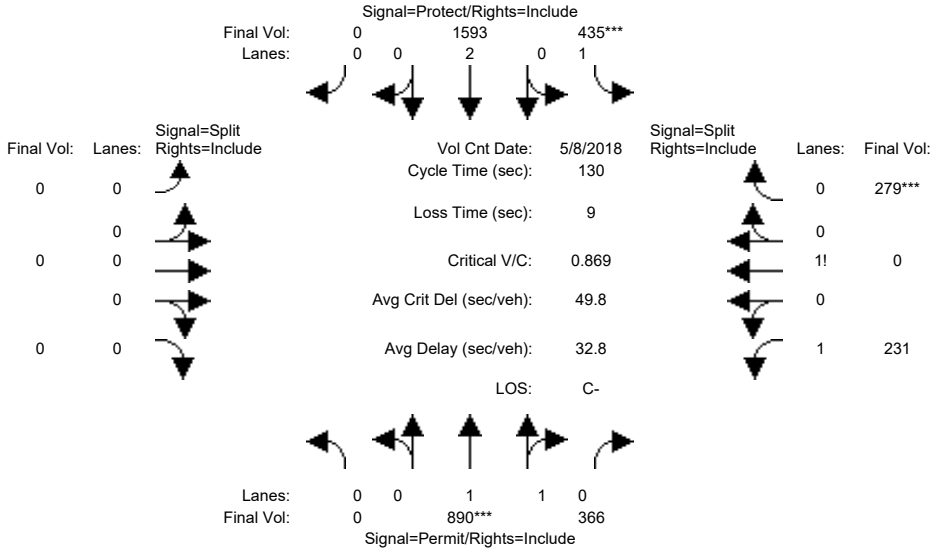
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:15 AM - 9:15 AM												
Base Vol:	0	1582	370	97	728	0	0	0	0	593	0	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1582	370	97	728	0	0	0	0	593	0	290
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1582	370	97	728	0	0	0	0	593	0	290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1582	370	97	728	0	0	0	0	593	0	290
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1582	370	97	728	0	0	0	0	593	0	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1582	370	97	728	0	0	0	0	593	0	290
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	1.61	0.39	1.00	2.00	0.00	0.00	0.00	0.00	1.51	0.00	0.49
Final Sat.:	0	2998	701	1750	3800	0	0	0	0	2635	0	865
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.53	0.06	0.19	0.00	0.00	0.00	0.00	0.23	0.00	0.34
Crit Moves:		****		****								****
Green Time:	0.0	69.5	69.5	7.3	76.8	0.0	0.0	0.0	0.0	44.2	0.0	44.2
Volume/Cap:	0.00	0.99	0.99	0.99	0.32	0.00	0.00	0.00	0.00	0.66	0.00	0.99
Uniform Del:	0.0	29.8	29.8	61.3	13.4	0.0	0.0	0.0	0.0	36.6	0.0	42.6
IncremntDel:	0.0	17.1	17.1	86.2	0.1	0.0	0.0	0.0	0.0	1.3	0.0	26.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	46.8	46.8	147.5	13.5	0.0	0.0	0.0	0.0	37.8	0.0	69.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	46.8	46.8	147.5	13.5	0.0	0.0	0.0	0.0	37.8	0.0	69.3
LOS by Move:	A	D	D	F	B	A	A	A	A	D+	A	E
HCM2kAvgQ:	0	41	41	5	7	0	0	0	0	13	0	25

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #96: Fair Oaks Ave & Kifer Rd



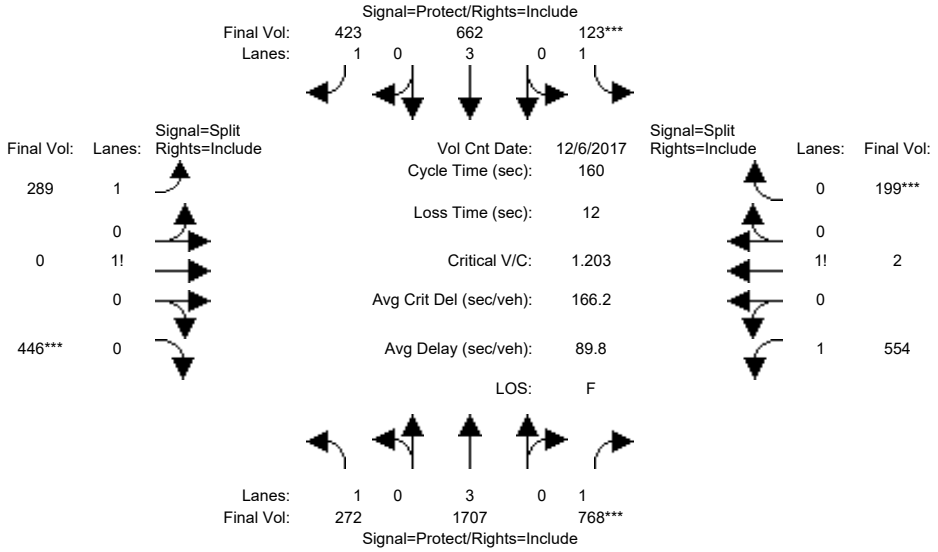
Street Name:	Fair Oaks Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 5:15 PM - 6:15 PM												
Base Vol:	0	890	366	435	1593	0	0	0	0	231	0	279
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	890	366	435	1593	0	0	0	0	231	0	279
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	890	366	435	1593	0	0	0	0	231	0	279
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	890	366	435	1593	0	0	0	0	231	0	279
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	890	366	435	1593	0	0	0	0	231	0	279
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	890	366	435	1593	0	0	0	0	231	0	279
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	1.40	0.60	1.00	2.00	0.00	0.00	0.00	0.00	1.30	0.00	0.70
Final Sat.:	0	2621	1078	1750	3800	0	0	0	0	2273	0	1262
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.34	0.25	0.42	0.00	0.00	0.00	0.00	0.10	0.00	0.22
Crit Moves:		****		****								****
Green Time:	0.0	50.8	50.8	37.2	88.0	0.0	0.0	0.0	0.0	33.0	0.0	33.0
Volume/Cap:	0.00	0.87	0.87	0.87	0.62	0.00	0.00	0.00	0.00	0.40	0.00	0.87
Uniform Del:	0.0	36.5	36.5	44.1	11.7	0.0	0.0	0.0	0.0	40.2	0.0	46.4
IncremntDel:	0.0	6.0	6.0	15.1	0.5	0.0	0.0	0.0	0.0	0.2	0.0	13.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	42.5	42.5	59.2	12.2	0.0	0.0	0.0	0.0	40.4	0.0	59.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	42.5	42.5	59.2	12.2	0.0	0.0	0.0	0.0	40.4	0.0	59.6
LOS by Move:	A	D	D	E+	B	A	A	A	A	D	A	E+
HCM2kAvgQ:	0	24	24	18	17	0	0	0	0	6	0	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #97: Wolfe Rd & Central Expwy Ramps



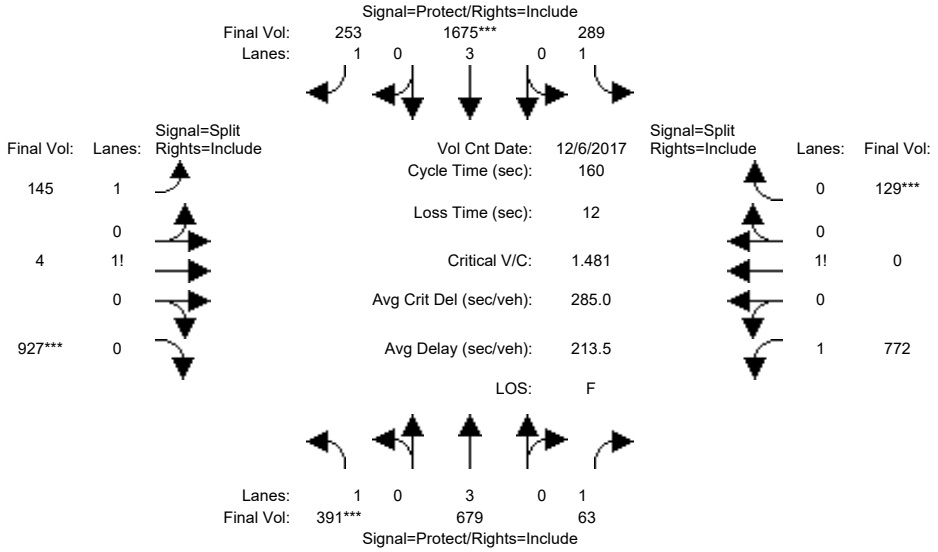
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	272	1707	768	123	662	423	289	0	446	554	2	199
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	272	1707	768	123	662	423	289	0	446	554	2	199
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	272	1707	768	123	662	423	289	0	446	554	2	199
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	272	1707	768	123	662	423	289	0	446	554	2	199
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	1707	768	123	662	423	289	0	446	554	2	199
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	1707	768	123	662	423	289	0	446	554	2	199
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.25	0.00	0.75	1.58	0.01	0.41
Final Sat.:	1750	5700	1750	1750	5700	1750	2187	0	1350	2764	7	729
Capacity Analysis Module:												
Vol/Sat:	0.16	0.30	0.44	0.07	0.12	0.24	0.13	0.00	0.33	0.20	0.27	0.27
Crit Moves:			****	****					****			****
Green Time:	26.5	58.4	58.4	9.3	41.2	41.2	43.9	0.0	43.9	36.3	36.3	36.3
Volume/Cap:	0.94	0.82	1.20	1.20	0.45	0.94	0.48	0.00	1.20	0.88	1.20	1.20
Uniform Del:	65.9	46.1	50.8	75.3	49.9	58.1	48.5	0.0	58.0	59.8	61.8	61.8
IncremntDel:	36.7	2.7	105.7	153.4	0.2	27.5	0.2	0.0	106.3	10.7	106	105.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	102.6	48.8	156.5	228.7	50.1	85.6	48.7	0.0	164.3	70.5	168	167.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	102.6	48.8	156.5	228.7	50.1	85.6	48.7	0.0	164.3	70.5	168	167.8
LOS by Move:	F	D	F	F	D	F	D	A	F	E	F	F
HCM2kAvgQ:	18	27	59	12	9	26	10	0	46	21	38	38

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #97: Wolfe Rd & Central Expwy Ramps



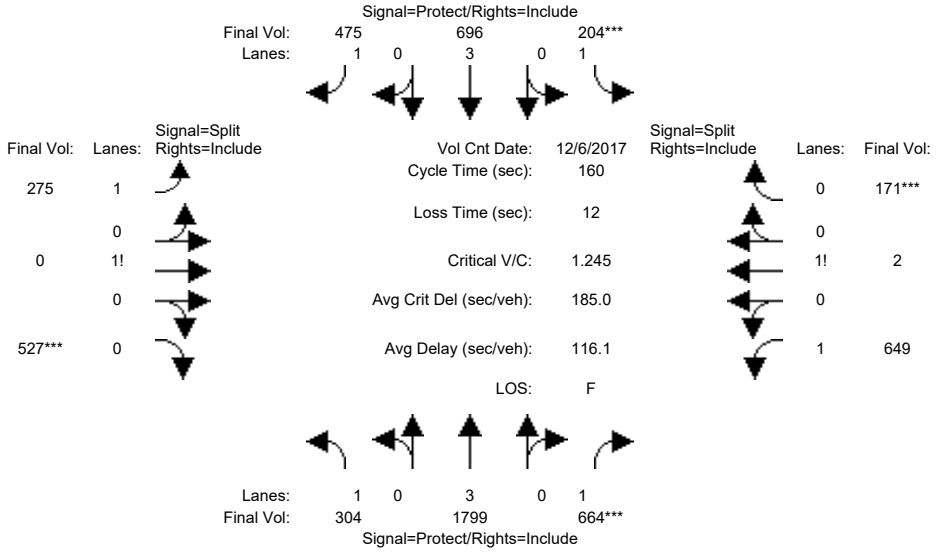
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	391	679	63	289	1675	253	145	4	927	772	0	129
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	391	679	63	289	1675	253	145	4	927	772	0	129
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	391	679	63	289	1675	253	145	4	927	772	0	129
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	391	679	63	289	1675	253	145	4	927	772	0	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	391	679	63	289	1675	253	145	4	927	772	0	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	391	679	63	289	1675	253	145	4	927	772	0	129
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.07	0.01	0.92	1.75	0.00	0.25
Final Sat.:	1750	5700	1750	1750	5700	1750	1880	7	1659	3062	0	438
Capacity Analysis Module:												
Vol/Sat:	0.22	0.12	0.04	0.17	0.29	0.14	0.08	0.56	0.56	0.25	0.00	0.29
Crit Moves:	****				****				****			****
Green Time:	24.1	23.4	23.4	32.5	31.7	31.7	60.3	60.3	60.3	31.8	0.0	31.8
Volume/Cap:	1.48	0.81	0.25	0.81	1.48	0.73	0.20	1.48	1.48	1.27	0.00	1.48
Uniform Del:	67.9	66.2	60.5	60.9	64.1	60.1	33.6	49.8	49.8	64.1	0.0	64.1
IncremntDel:	235.9	6.2	0.5	13.4	221	7.6	0.0	224	224.0	132.1	0.0	225.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	303.8	72.4	61.0	74.3	286	67.7	33.7	274	273.8	196.2	0.0	289.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	303.8	72.4	61.0	74.3	286	67.7	33.7	274	273.8	196.2	0.0	289.5
LOS by Move:	F	E	E	E	F	E	C-	F	F	F	A	F
HCM2kAvgQ:	39	13	3	17	50	14	5	93	93	38	0	50

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #97: Wolfe Rd & Central Expwy Ramps



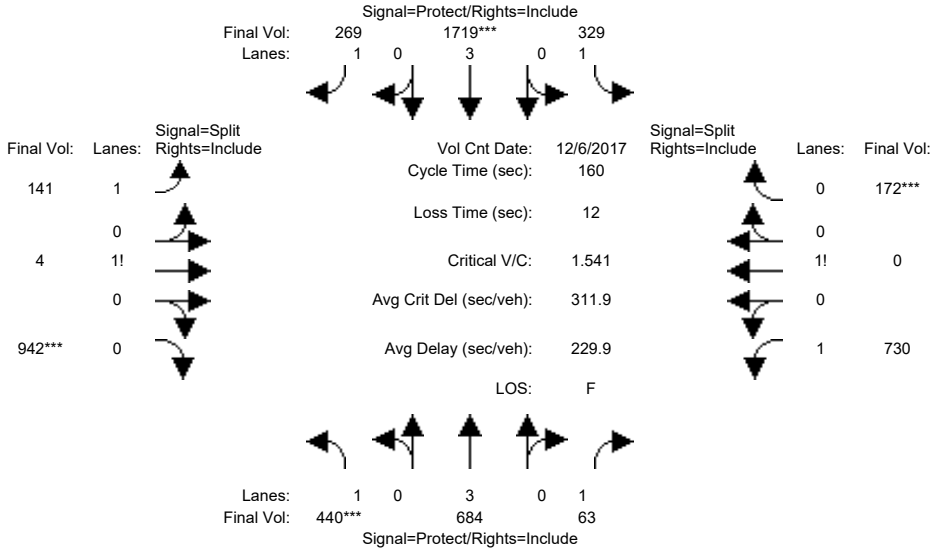
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	304	1799	664	204	696	475	275	0	527	649	2	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	304	1799	664	204	696	475	275	0	527	649	2	171
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	304	1799	664	204	696	475	275	0	527	649	2	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	304	1799	664	204	696	475	275	0	527	649	2	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	304	1799	664	204	696	475	275	0	527	649	2	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	304	1799	664	204	696	475	275	0	527	649	2	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.21	0.00	0.79	1.65	0.01	0.34
Final Sat.:	1750	5700	1750	1750	5700	1750	2120	0	1419	2891	7	602
Capacity Analysis Module:												
Vol/Sat:	0.17	0.32	0.38	0.12	0.12	0.27	0.13	0.00	0.37	0.22	0.28	0.28
Crit Moves:			****	****					****			****
Green Time:	24.9	48.8	48.8	15.0	38.9	38.9	47.7	0.0	47.7	36.5	36.5	36.5
Volume/Cap:	1.12	1.04	1.25	1.25	0.50	1.12	0.43	0.00	1.25	0.98	1.25	1.25
Uniform Del:	67.6	55.6	55.6	72.5	52.2	60.6	45.3	0.0	56.1	61.4	61.7	61.7
IncremntDel:	89.8	31.4	125.3	151.0	0.3	79.6	0.2	0.0	123.0	26.8	123	122.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	157.4	87.0	181.0	223.5	52.5	140.1	45.4	0.0	179.1	88.3	184	184.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	157.4	87.0	181.0	223.5	52.5	140.1	45.4	0.0	179.1	88.3	184	184.4
LOS by Move:	F	F	F	F	D-	F	D	A	F	F	F	F
HCM2kAvgQ:	24	37	54	18	10	35	10	0	53	26	41	41

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #97: Wolfe Rd & Central Expwy Ramps



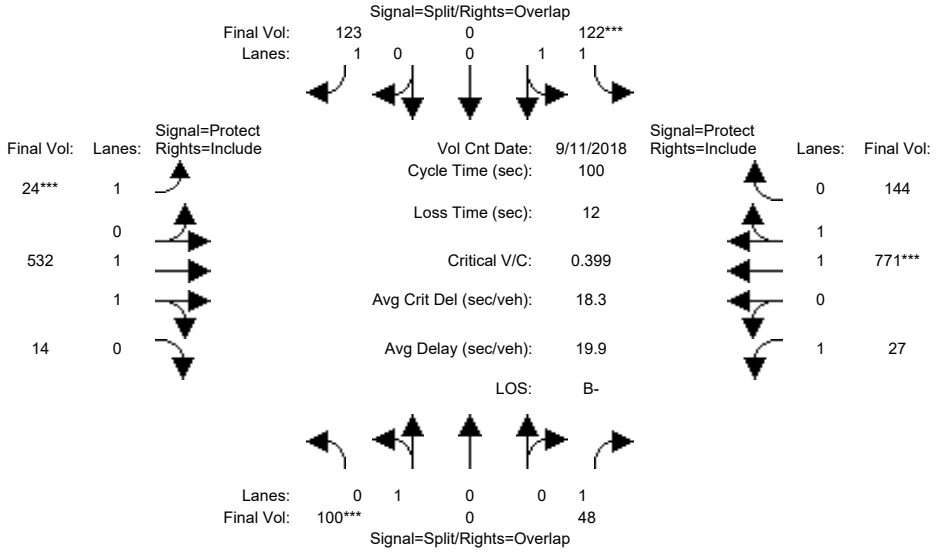
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	440	684	63	329	1719	269	141	4	942	730	0	172
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	440	684	63	329	1719	269	141	4	942	730	0	172
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	440	684	63	329	1719	269	141	4	942	730	0	172
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	440	684	63	329	1719	269	141	4	942	730	0	172
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	440	684	63	329	1719	269	141	4	942	730	0	172
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	440	684	63	329	1719	269	141	4	942	730	0	172
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.07	0.01	0.92	1.68	0.00	0.32
Final Sat.:	1750	5700	1750	1750	5700	1750	1875	7	1665	2939	0	561
Capacity Analysis Module:												
Vol/Sat:	0.25	0.12	0.04	0.19	0.30	0.15	0.08	0.57	0.57	0.25	0.00	0.31
Crit Moves:	****				****				****			****
Green Time:	26.1	22.4	22.4	35.0	31.3	31.3	58.7	58.7	58.7	31.9	0.0	31.9
Volume/Cap:	1.54	0.86	0.26	0.86	1.54	0.79	0.20	1.54	1.54	1.25	0.00	1.54
Uniform Del:	66.9	67.3	61.4	60.1	64.3	61.2	34.6	50.6	50.6	64.1	0.0	64.1
IncremntDel:	260.4	9.3	0.6	17.3	248	11.4	0.0	251	250.6	122.7	0.0	252.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	327.3	76.5	62.0	77.4	312	72.5	34.7	301	301.3	186.8	0.0	316.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	327.3	76.5	62.0	77.4	312	72.5	34.7	301	301.3	186.8	0.0	316.1
LOS by Move:	F	E-	E	E-	F	E	C-	F	F	F	A	F
HCM2kAvgQ:	45	13	3	19	53	15	5	98	98	36	0	54

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #99: Semiconductor Dr & Kifer Rd



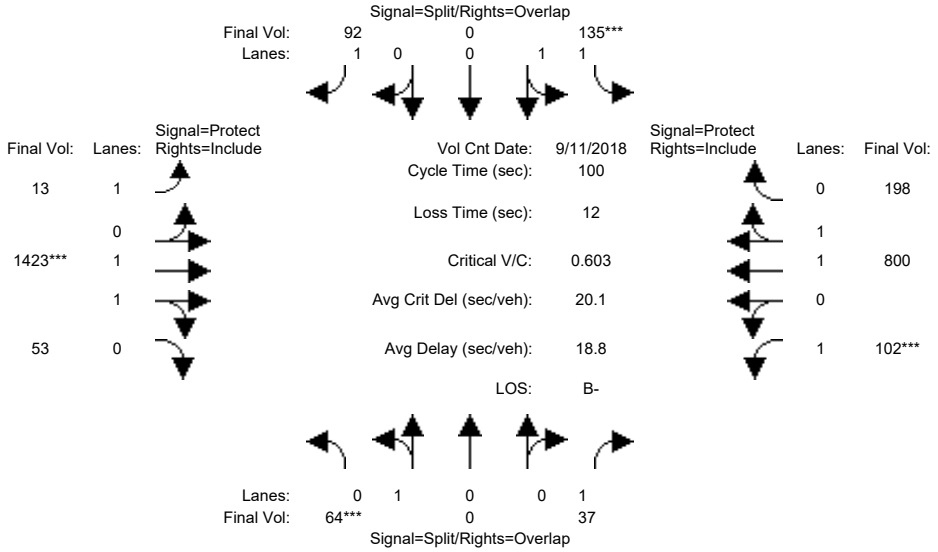
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	100	0	48	122	0	123	24	532	14	27	771	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	0	48	122	0	123	24	532	14	27	771	144
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	0	48	122	0	123	24	532	14	27	771	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	0	48	122	0	123	24	532	14	27	771	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	48	122	0	123	24	532	14	27	771	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	0	48	122	0	123	24	532	14	27	771	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.95	0.05	1.00	1.68	0.32
Final Sat.:	1800	0	1750	3550	0	1750	1750	3605	95	1750	3117	582
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.03	0.03	0.00	0.07	0.01	0.15	0.15	0.02	0.25	0.25
Crit Moves:	****			****			****				****	
Green Time:	13.0	0.0	33.9	10.0	0.0	17.0	7.0	44.1	44.1	20.9	58.0	58.0
Volume/Cap:	0.43	0.00	0.08	0.34	0.00	0.41	0.20	0.33	0.33	0.07	0.43	0.43
Uniform Del:	40.1	0.0	22.4	41.9	0.0	37.0	43.8	18.3	18.3	31.8	11.7	11.7
IncremntDel:	1.3	0.0	0.1	0.6	0.0	0.9	0.8	0.1	0.1	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.3	0.0	22.5	42.5	0.0	38.0	44.6	18.5	18.5	31.9	11.9	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.3	0.0	22.5	42.5	0.0	38.0	44.6	18.5	18.5	31.9	11.9	11.9
LOS by Move:	D	A	C+	D	A	D+	D	B-	B-	C	B+	B+
HCM2kAvgQ:	3	0	1	2	0	4	1	5	5	1	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #99: Semiconductor Dr & Kifer Rd



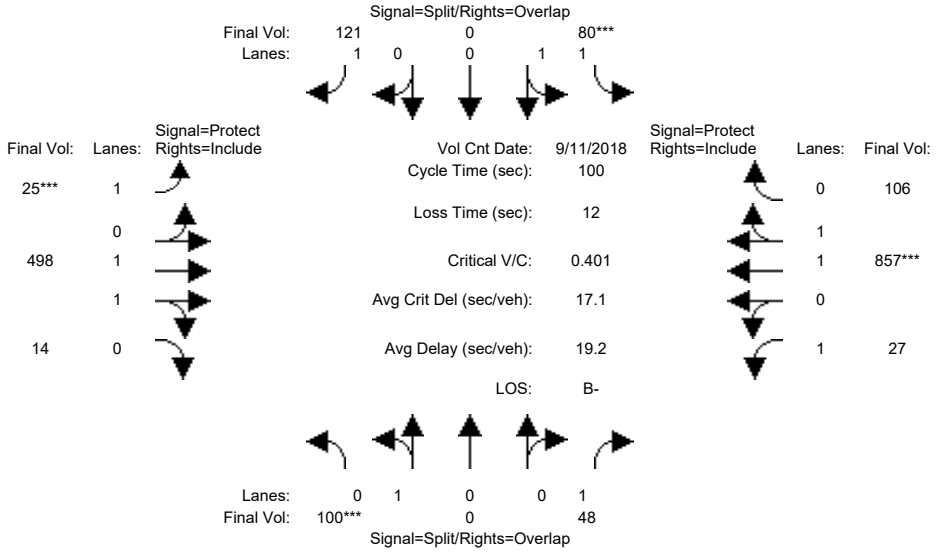
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	64	0	37	135	0	92	13	1423	53	102	800	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	0	37	135	0	92	13	1423	53	102	800	198
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	0	37	135	0	92	13	1423	53	102	800	198
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	0	37	135	0	92	13	1423	53	102	800	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	0	37	135	0	92	13	1423	53	102	800	198
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	0	37	135	0	92	13	1423	53	102	800	198
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.93	0.07	1.00	1.59	0.41
Final Sat.:	1800	0	1750	3550	0	1750	1750	3567	133	1750	2965	734
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.04	0.00	0.05	0.01	0.40	0.40	0.06	0.27	0.27
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	18.7	10.0	0.0	24.0	14.0	59.3	59.3	8.7	54.0	54.0
Volume/Cap:	0.36	0.00	0.11	0.38	0.00	0.22	0.05	0.67	0.67	0.67	0.50	0.50
Uniform Del:	42.0	0.0	33.8	42.1	0.0	30.5	37.2	13.8	13.8	44.3	14.5	14.5
IncremntDel:	1.2	0.0	0.2	0.7	0.0	0.3	0.1	0.8	0.8	11.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	0.0	33.9	42.8	0.0	30.7	37.3	14.6	14.6	55.5	14.7	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	0.0	33.9	42.8	0.0	30.7	37.3	14.6	14.6	55.5	14.7	14.7
LOS by Move:	D	A	C-	D	A	C	D+	B	B	E+	B	B
HCM2kAvgQ:	2	0	1	2	0	3	0	15	15	3	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #99: Semiconductor Dr & Kifer Rd



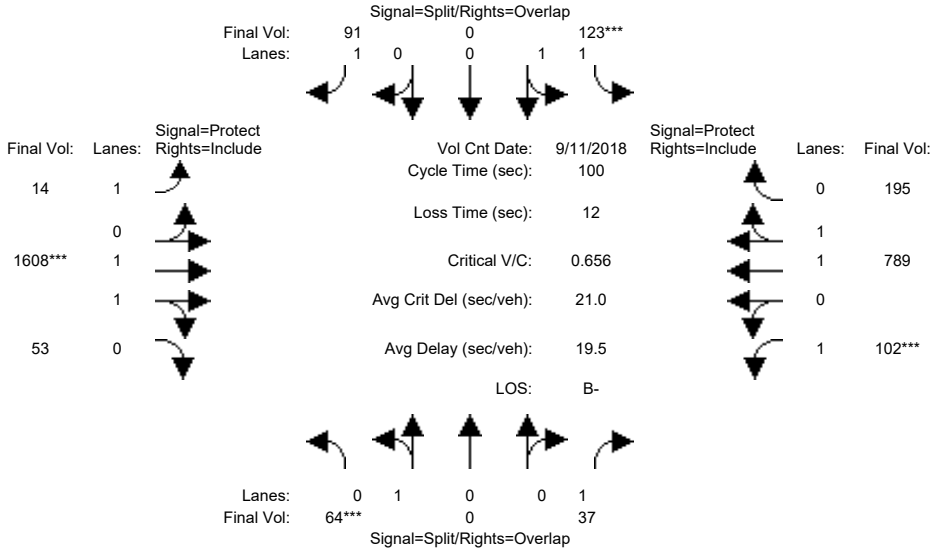
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 8:45AM-9:45AM												
Base Vol:	100	0	48	80	0	121	25	498	14	27	857	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	0	48	80	0	121	25	498	14	27	857	106
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	0	48	80	0	121	25	498	14	27	857	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	0	48	80	0	121	25	498	14	27	857	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	48	80	0	121	25	498	14	27	857	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	0	48	80	0	121	25	498	14	27	857	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.94	0.06	1.00	1.77	0.23
Final Sat.:	1800	0	1750	3550	0	1750	1750	3599	101	1750	3292	407
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.03	0.02	0.00	0.07	0.01	0.14	0.14	0.02	0.26	0.26
Crit Moves:	****			****			****				****	
Green Time:	12.5	0.0	34.5	10.0	0.0	17.0	7.0	43.5	43.5	22.0	58.5	58.5
Volume/Cap:	0.44	0.00	0.08	0.23	0.00	0.41	0.20	0.32	0.32	0.07	0.44	0.44
Uniform Del:	40.5	0.0	22.1	41.4	0.0	37.0	43.9	18.5	18.5	30.9	11.6	11.6
IncremntDel:	1.4	0.0	0.1	0.3	0.0	0.9	0.8	0.1	0.1	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.9	0.0	22.1	41.8	0.0	37.9	44.7	18.6	18.6	31.0	11.8	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.9	0.0	22.1	41.8	0.0	37.9	44.7	18.6	18.6	31.0	11.8	11.8
LOS by Move:	D	A	C+	D	A	D+	D	B-	B-	C	B+	B+
HCM2kAvgQ:	3	0	1	1	0	4	1	5	5	1	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #99: Semiconductor Dr & Kifer Rd



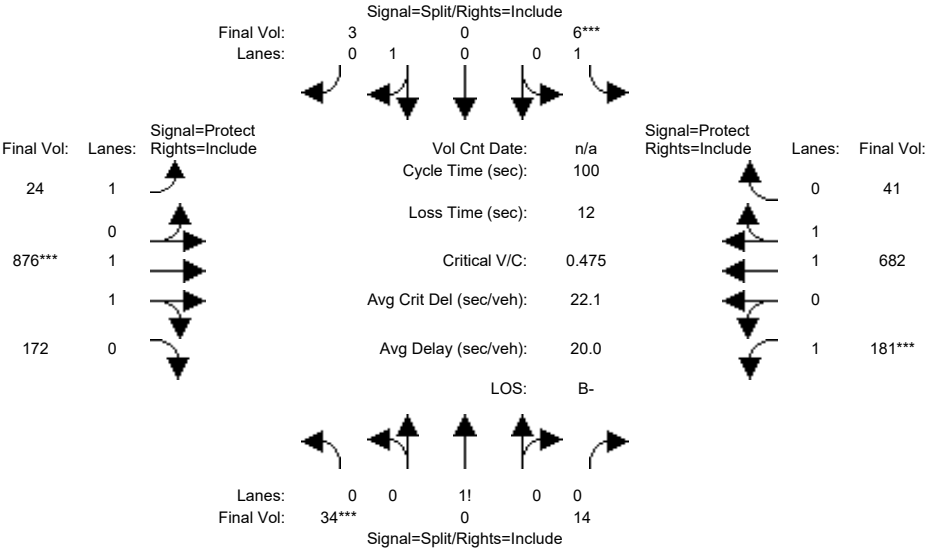
Street Name:	Semiconductor Drive						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 11 Sep 2018 << 4:45PM-5:45PM												
Base Vol:	64	0	37	123	0	91	14	1608	53	102	789	195
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	0	37	123	0	91	14	1608	53	102	789	195
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	0	37	123	0	91	14	1608	53	102	789	195
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	0	37	123	0	91	14	1608	53	102	789	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	0	37	123	0	91	14	1608	53	102	789	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	0	37	123	0	91	14	1608	53	102	789	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.93	1.00	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	1.93	0.07	1.00	1.59	0.41
Final Sat.:	1800	0	1750	3550	0	1750	1750	3582	118	1750	2966	733
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.02	0.03	0.00	0.05	0.01	0.45	0.45	0.06	0.27	0.27
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	17.8	10.0	0.0	24.2	14.2	60.2	60.2	7.8	53.8	53.8
Volume/Cap:	0.36	0.00	0.12	0.35	0.00	0.22	0.06	0.75	0.75	0.75	0.49	0.49
Uniform Del:	42.0	0.0	34.5	42.0	0.0	30.3	37.1	14.4	14.4	45.1	14.5	14.5
IncremntDel:	1.2	0.0	0.2	0.6	0.0	0.3	0.1	1.4	1.4	19.9	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	0.0	34.7	42.5	0.0	30.6	37.2	15.8	15.8	65.0	14.7	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	0.0	34.7	42.5	0.0	30.6	37.2	15.8	15.8	65.0	14.7	14.7
LOS by Move:	D	A	C-	D	A	C	D+	B	B	E	B	B
HCM2kAvgQ:	2	0	1	2	0	2	0	18	18	3	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



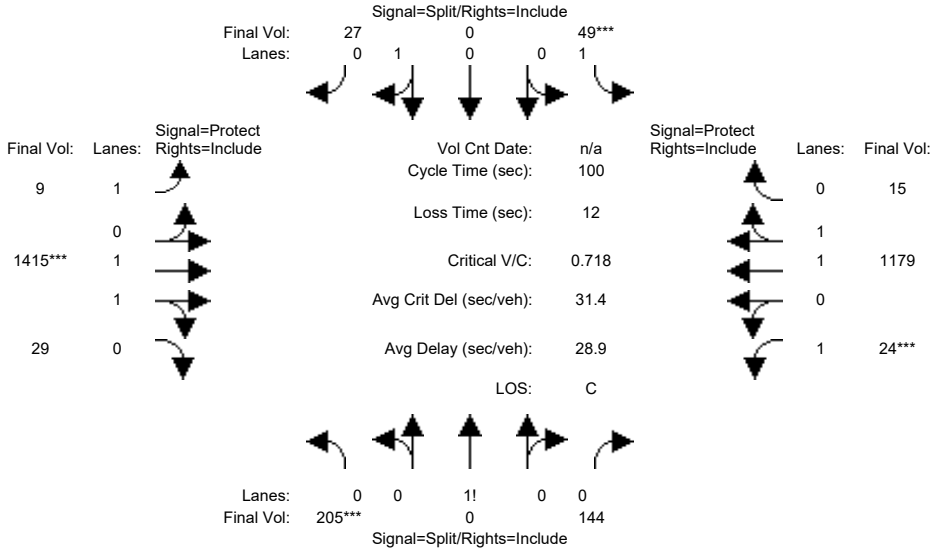
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	0	14	6	0	3	24	876	172	181	682	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	14	6	0	3	24	876	172	181	682	41
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	14	6	0	3	24	876	172	181	682	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	14	6	0	3	24	876	172	181	682	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	14	6	0	3	24	876	172	181	682	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	14	6	0	3	24	876	172	181	682	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.71	0.00	0.29	1.00	0.00	1.00	1.00	1.66	0.34	1.00	1.88	0.12
Final Sat.:	1240	0	510	1750	0	1800	1750	3092	607	1750	3490	210
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.01	0.28	0.28	0.10	0.20	0.20
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	10.0	10.0	0.0	10.0	17.9	49.8	49.8	18.2	50.1	50.1
Volume/Cap:	0.27	0.00	0.27	0.03	0.00	0.02	0.08	0.57	0.57	0.57	0.39	0.39
Uniform Del:	41.6	0.0	41.6	40.6	0.0	40.6	34.1	17.6	17.6	37.3	15.5	15.5
IncremntDel:	0.9	0.0	0.9	0.1	0.0	0.0	0.1	0.4	0.4	2.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.5	0.0	42.5	40.7	0.0	40.6	34.2	18.0	18.0	39.8	15.6	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	0.0	42.5	40.7	0.0	40.6	34.2	18.0	18.0	39.8	15.6	15.6
LOS by Move:	D	A	D	D	A	D	C-	B	B	D	B	B
HCM2kAvgQ:	2	0	2	0	0	0	1	11	11	5	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



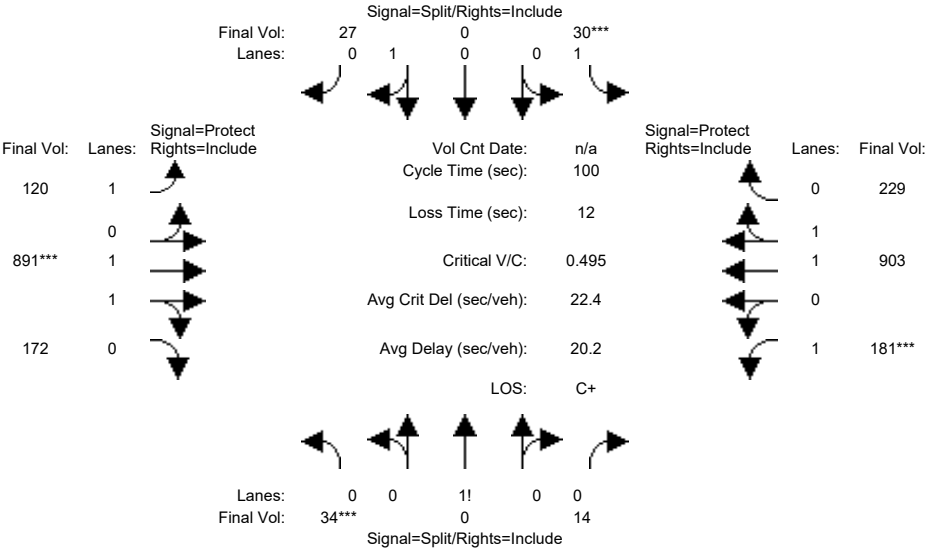
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	0	144	49	0	27	9	1415	29	24	1179	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	0	144	49	0	27	9	1415	29	24	1179	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	0	144	49	0	27	9	1415	29	24	1179	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	0	144	49	0	27	9	1415	29	24	1179	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	0	144	49	0	27	9	1415	29	24	1179	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	0	144	49	0	27	9	1415	29	24	1179	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.97	0.95	0.92	0.97	0.95
Lanes:	0.59	0.00	0.41	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.97	0.03
Final Sat.:	1028	0	722	1750	0	1800	1750	3626	74	1750	3653	46
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.20	0.03	0.00	0.02	0.01	0.39	0.39	0.01	0.32	0.32
Crit Moves:	****			****				****		****		
Green Time:	24.0	0.0	24.0	10.0	0.0	10.0	9.6	47.0	47.0	7.0	44.4	44.4
Volume/Cap:	0.83	0.00	0.83	0.28	0.00	0.15	0.05	0.83	0.83	0.20	0.73	0.73
Uniform Del:	36.1	0.0	36.1	41.7	0.0	41.1	41.1	23.0	23.0	43.8	22.8	22.8
IncremntDel:	13.1	0.0	13.1	0.9	0.0	0.4	0.1	3.5	3.5	0.8	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.1	0.0	49.1	42.5	0.0	41.5	41.2	26.6	26.6	44.6	24.5	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.1	0.0	49.1	42.5	0.0	41.5	41.2	26.6	26.6	44.6	24.5	24.5
LOS by Move:	D	A	D	D	A	D	D	C	C	D	C	C
HCM2kAvgQ:	14	0	14	2	0	1	0	18	18	1	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



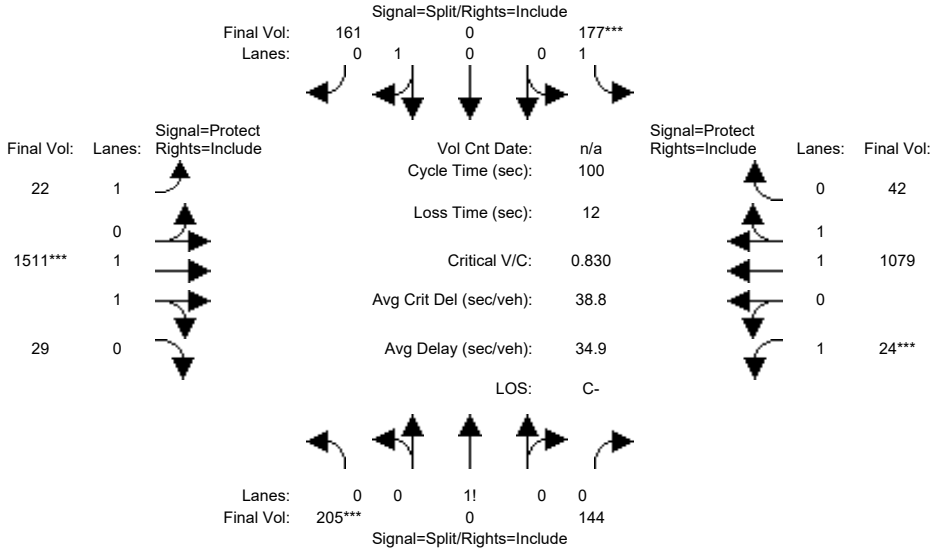
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	0	14	30	0	27	120	891	172	181	903	229
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	14	30	0	27	120	891	172	181	903	229
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	14	30	0	27	120	891	172	181	903	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	14	30	0	27	120	891	172	181	903	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	14	30	0	27	120	891	172	181	903	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	14	30	0	27	120	891	172	181	903	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.71	0.00	0.29	1.00	0.00	1.00	1.00	1.67	0.33	1.00	1.58	0.42
Final Sat.:	1240	0	510	1750	0	1800	1750	3101	599	1750	2951	748
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.02	0.00	0.02	0.07	0.29	0.29	0.10	0.31	0.31
Crit Moves:	****			****				****		****		
Green Time:	10.0	0.0	10.0	10.0	0.0	10.0	12.7	50.0	50.0	18.0	55.3	55.3
Volume/Cap:	0.27	0.00	0.27	0.17	0.00	0.15	0.54	0.57	0.57	0.57	0.55	0.55
Uniform Del:	41.6	0.0	41.6	41.2	0.0	41.1	40.9	17.5	17.5	37.5	14.4	14.4
IncremntDel:	0.9	0.0	0.9	0.5	0.0	0.4	2.7	0.4	0.4	2.6	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.5	0.0	42.5	41.7	0.0	41.5	43.7	18.0	18.0	40.1	14.7	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	0.0	42.5	41.7	0.0	41.5	43.7	18.0	18.0	40.1	14.7	14.7
LOS by Move:	D	A	D	D	A	D	D	B	B	D	B	B
HCM2kAvgQ:	2	0	2	1	0	1	4	11	11	5	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #100: 1020 Kifer Rd Dwy & Kifer Rd



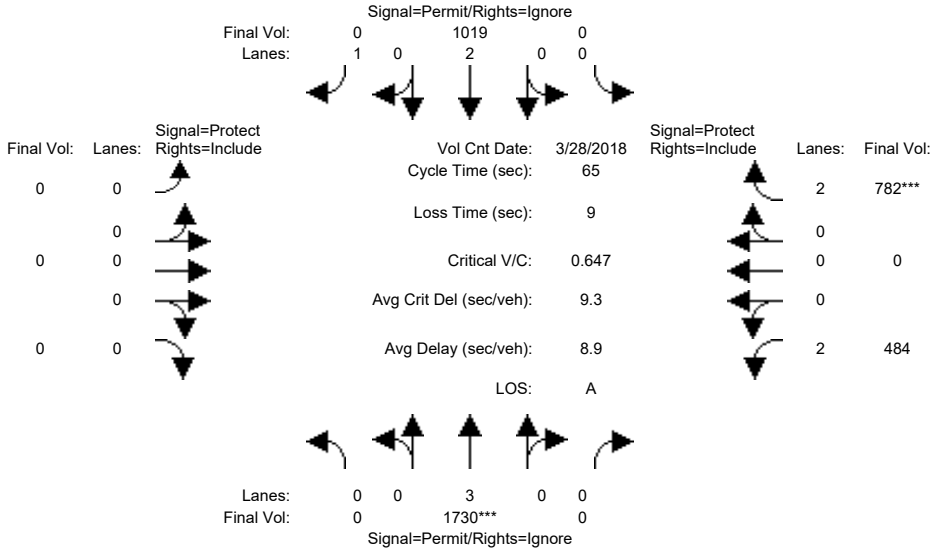
Street Name:	1020 Kifer Road Driveway						Kifer Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	0	144	177	0	161	22	1511	29	24	1079	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	0	144	177	0	161	22	1511	29	24	1079	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	0	144	177	0	161	22	1511	29	24	1079	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	0	144	177	0	161	22	1511	29	24	1079	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	0	144	177	0	161	22	1511	29	24	1079	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	0	144	177	0	161	22	1511	29	24	1079	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	1.00	0.95	0.92	0.97	0.95	0.92	0.97	0.95
Lanes:	0.59	0.00	0.41	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.92	0.08
Final Sat.:	1028	0	722	1750	0	1800	1750	3630	70	1750	3561	139
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.20	0.10	0.00	0.09	0.01	0.42	0.42	0.01	0.30	0.30
Crit Moves:	****			****				****		****		
Green Time:	22.5	0.0	22.5	11.4	0.0	11.4	10.1	47.0	47.0	7.0	43.9	43.9
Volume/Cap:	0.88	0.00	0.88	0.88	0.00	0.78	0.12	0.88	0.88	0.20	0.69	0.69
Uniform Del:	37.5	0.0	37.5	43.6	0.0	43.1	40.9	24.0	24.0	43.8	22.6	22.6
IncremntDel:	20.5	0.0	20.5	34.1	0.0	17.5	0.3	5.8	5.8	0.8	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.0	0.0	58.0	77.7	0.0	60.6	41.2	29.9	29.9	44.6	23.9	23.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.0	0.0	58.0	77.7	0.0	60.6	41.2	29.9	29.9	44.6	23.9	23.9
LOS by Move:	E+	A	E+	E-	A	E	D	C	C	D	C	C
HCM2kAvgQ:	15	0	15	9	0	7	1	20	20	1	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



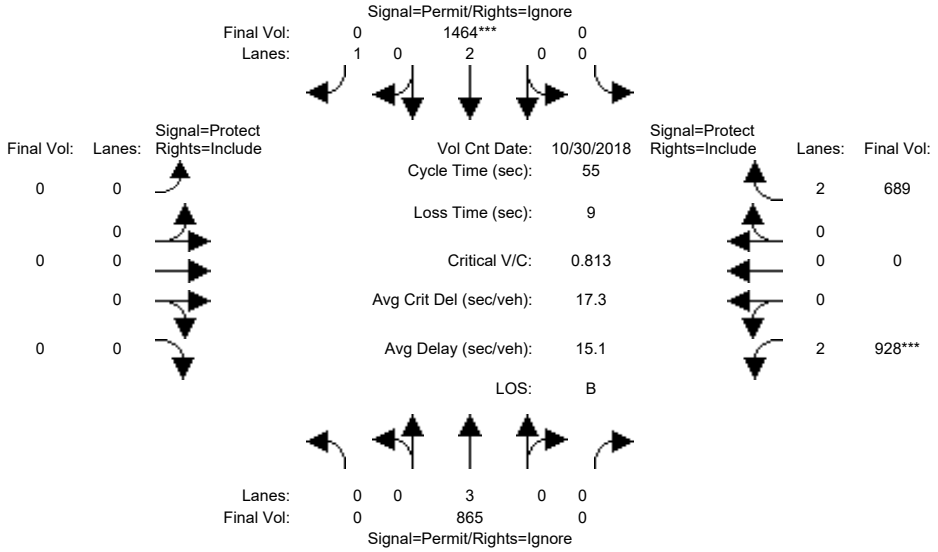
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1730	412	0	1019	490	0	0	0	484	0	782
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1730	412	0	1019	490	0	0	0	484	0	782
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1730	412	0	1019	490	0	0	0	484	0	782
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1730	0	0	1019	0	0	0	0	484	0	782
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1730	0	0	1019	0	0	0	0	484	0	782
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1730	0	0	1019	0	0	0	0	484	0	782
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.15	0.00	0.25
Crit Moves:		****										****
Green Time:	0.0	31.0	0.0	0.0	31.0	0.0	0.0	0.0	0.0	25.0	0.0	25.0
Volume/Cap:	0.00	0.65	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.40	0.00	0.65
Uniform Del:	0.0	12.8	0.0	0.0	12.1	0.0	0.0	0.0	0.0	14.6	0.0	16.4
IncremntDel:	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.39	0.00	0.00	0.39	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	5.6	0.0	0.0	5.1	0.0	0.0	0.0	0.0	14.8	0.0	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.6	0.0	0.0	5.1	0.0	0.0	0.0	0.0	14.8	0.0	17.6
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	B
HCM2kAvgQ:	0	6	0	0	4	0	0	0	0	4	0	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



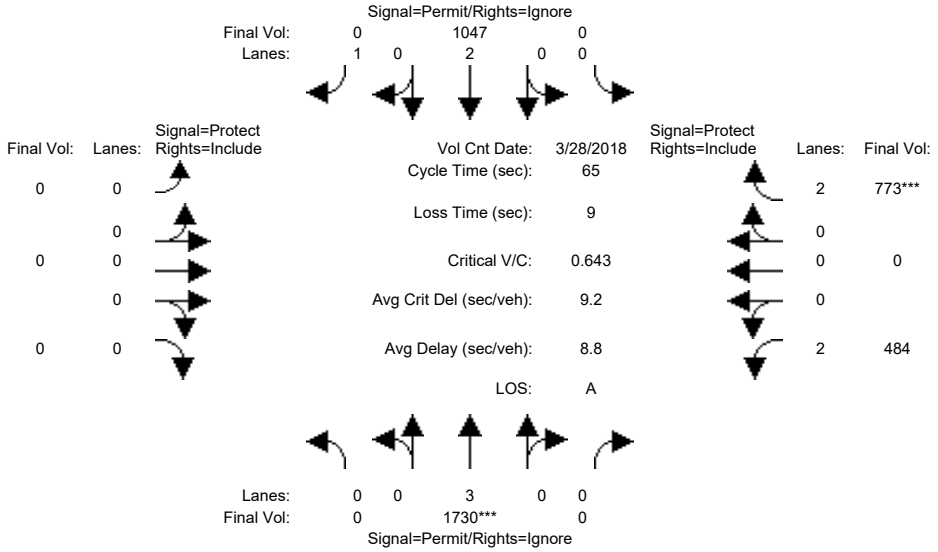
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	0	865	505	0	1464	663	0	0	0	928	0	689
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	865	505	0	1464	663	0	0	0	928	0	689
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	865	505	0	1464	663	0	0	0	928	0	689
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	865	0	0	1464	0	0	0	0	928	0	689
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	865	0	0	1464	0	0	0	0	928	0	689
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	865	0	0	1464	0	0	0	0	928	0	689
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.29	0.00	0.22
Crit Moves:					****					****		
Green Time:	0.0	26.1	0.0	0.0	26.1	0.0	0.0	0.0	0.0	19.9	0.0	19.9
Volume/Cap:	0.00	0.33	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.81	0.00	0.60
Uniform Del:	0.0	9.0	0.0	0.0	12.4	0.0	0.0	0.0	0.0	15.8	0.0	14.3
IncremntDel:	0.0	0.1	0.0	0.0	2.9	0.0	0.0	0.0	0.0	4.6	0.0	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.1	0.0	0.0	15.3	0.0	0.0	0.0	0.0	20.4	0.0	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.1	0.0	0.0	15.3	0.0	0.0	0.0	0.0	20.4	0.0	15.2
LOS by Move:	A	A	A	A	B	A	A	A	A	C+	A	B
HCM2kAvgQ:	0	2	0	0	8	0	0	0	0	11	0	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



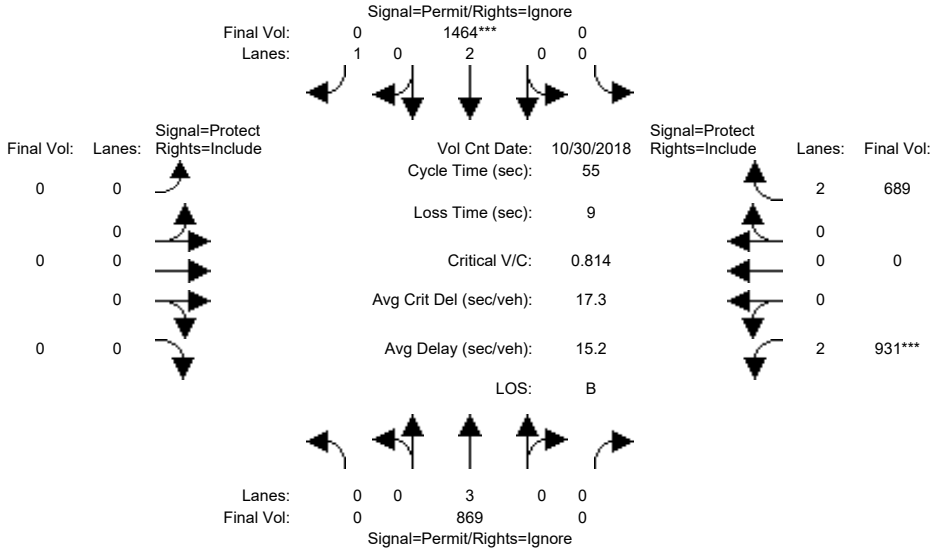
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1730	412	0	1047	490	0	0	0	484	0	773
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1730	412	0	1047	490	0	0	0	484	0	773
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1730	412	0	1047	490	0	0	0	484	0	773
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1730	0	0	1047	0	0	0	0	484	0	773
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1730	0	0	1047	0	0	0	0	484	0	773
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1730	0	0	1047	0	0	0	0	484	0	773
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.15	0.00	0.25
Crit Moves:		****										****
Green Time:	0.0	31.2	0.0	0.0	31.2	0.0	0.0	0.0	0.0	24.8	0.0	24.8
Volume/Cap:	0.00	0.64	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.40	0.00	0.64
Uniform Del:	0.0	12.7	0.0	0.0	12.1	0.0	0.0	0.0	0.0	14.7	0.0	16.5
IncremntDel:	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.38	0.00	0.00	0.38	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	5.4	0.0	0.0	5.1	0.0	0.0	0.0	0.0	14.9	0.0	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.4	0.0	0.0	5.1	0.0	0.0	0.0	0.0	14.9	0.0	17.7
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	B
HCM2kAvgQ:	0	6	0	0	4	0	0	0	0	5	0	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #202: I-280 N Ramp/Wolfe Rd 1644-202 [CMP 2010]



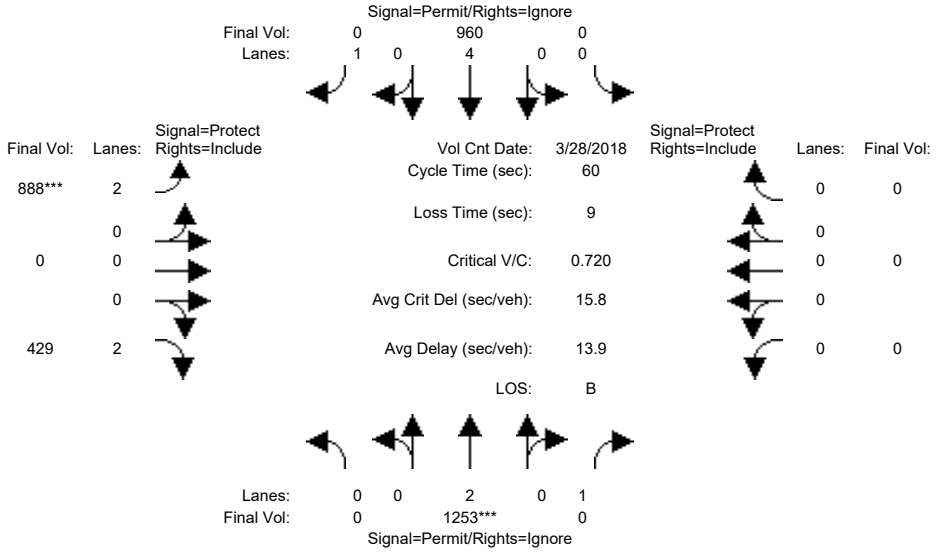
Street Name:	Wolfe Road						I-280 N. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	0	869	505	0	1464	663	0	0	0	931	0	689
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	869	505	0	1464	663	0	0	0	931	0	689
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	869	505	0	1464	663	0	0	0	931	0	689
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	869	0	0	1464	0	0	0	0	931	0	689
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	869	0	0	1464	0	0	0	0	931	0	689
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	869	0	0	1464	0	0	0	0	931	0	689
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.30	0.00	0.22
Crit Moves:					****					****		
Green Time:	0.0	26.0	0.0	0.0	26.0	0.0	0.0	0.0	0.0	20.0	0.0	20.0
Volume/Cap:	0.00	0.33	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.81	0.00	0.60
Uniform Del:	0.0	9.0	0.0	0.0	12.4	0.0	0.0	0.0	0.0	15.8	0.0	14.3
IncremntDel:	0.0	0.1	0.0	0.0	3.0	0.0	0.0	0.0	0.0	4.6	0.0	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.1	0.0	0.0	15.4	0.0	0.0	0.0	0.0	20.4	0.0	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.1	0.0	0.0	15.4	0.0	0.0	0.0	0.0	20.4	0.0	15.2
LOS by Move:	A	A	A	A	B	A	A	A	A	C+	A	B
HCM2kAvgQ:	0	2	0	0	8	0	0	0	0	11	0	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



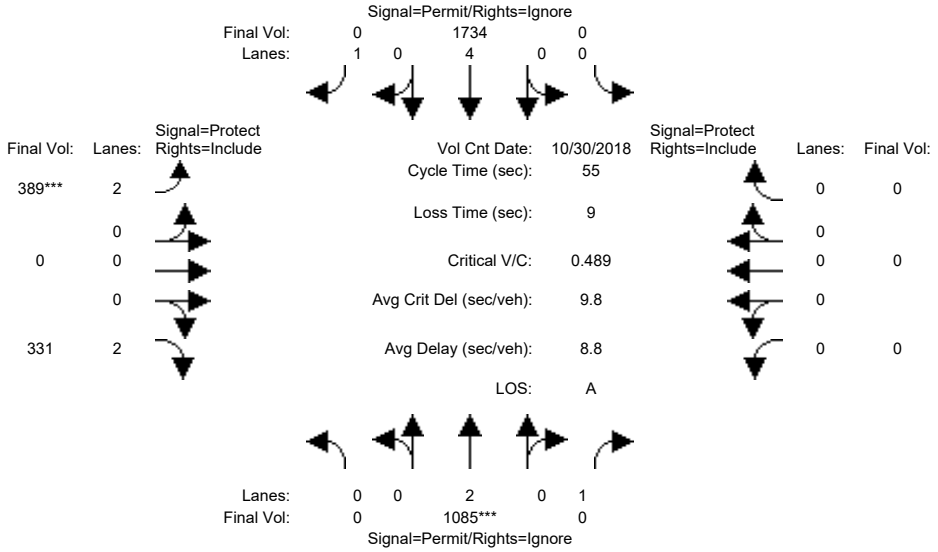
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1253	432	0	960	473	888	0	429	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1253	432	0	960	473	888	0	429	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1253	432	0	960	473	888	0	429	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1253	0	0	960	0	888	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1253	0	0	960	0	888	0	429	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1253	0	0	960	0	888	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.13	0.00	0.28	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	27.5	0.0	0.0	27.5	0.0	23.5	0.0	23.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.72	0.00	0.00	0.28	0.00	0.72	0.00	0.35	0.00	0.00	0.00
Uniform Del:	0.0	13.1	0.0	0.0	10.1	0.0	15.5	0.0	12.8	0.0	0.0	0.0
IncremntDel:	0.0	1.5	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B+	A	B	A	B	A	A	A
HCM2kAvgQ:	0	8	0	0	2	0	10	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



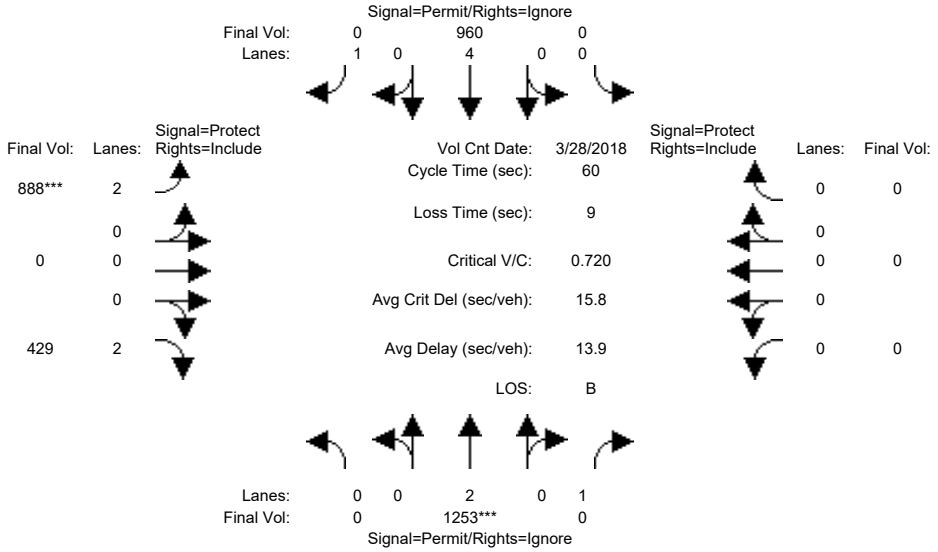
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 PM to 6:30 PM												
Base Vol:	0	1085	520	0	1734	676	389	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1085	520	0	1734	676	389	0	331	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1085	520	0	1734	676	389	0	331	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1085	0	0	1734	0	389	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1085	0	0	1734	0	389	0	331	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1085	0	0	1734	0	389	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.00	0.23	0.00	0.12	0.00	0.11	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	32.1	0.0	0.0	32.1	0.0	13.9	0.0	13.9	0.0	0.0	0.0
Volume/Cap:	0.00	0.49	0.00	0.00	0.39	0.00	0.49	0.00	0.42	0.00	0.00	0.00
Uniform Del:	0.0	6.7	0.0	0.0	6.2	0.0	17.5	0.0	17.2	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.1	0.0	0.5	0.0	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.8	0.0	0.0	6.2	0.0	18.0	0.0	17.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.8	0.0	0.0	6.2	0.0	18.0	0.0	17.5	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B-	A	B	A	A	A
HCM2kAvgQ:	0	1	0	0	1	0	4	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



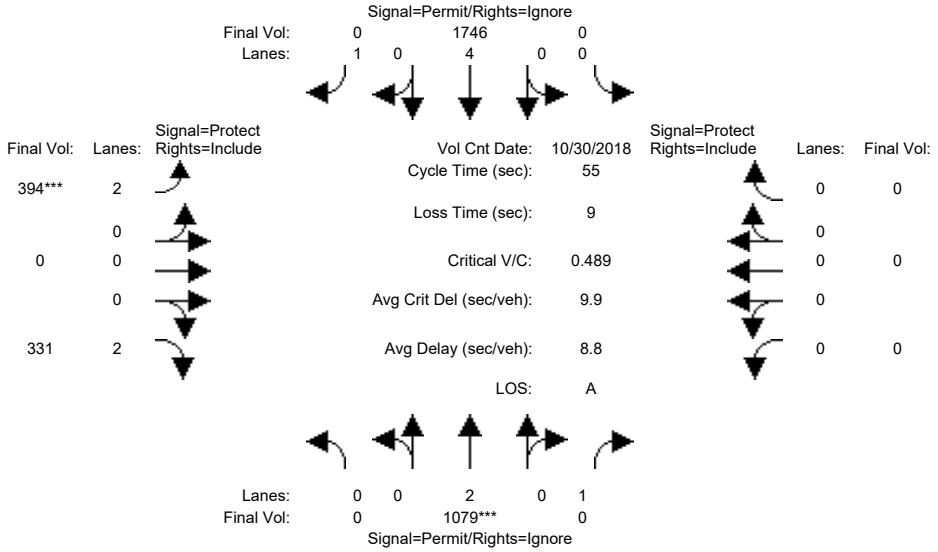
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 28 Mar 2018 << 8:15 - 9:15												
Base Vol:	0	1253	432	0	960	473	888	0	429	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1253	432	0	960	473	888	0	429	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1253	432	0	960	473	888	0	429	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1253	0	0	960	0	888	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1253	0	0	960	0	888	0	429	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1253	0	0	960	0	888	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.13	0.00	0.28	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	27.5	0.0	0.0	27.5	0.0	23.5	0.0	23.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.72	0.00	0.00	0.28	0.00	0.72	0.00	0.35	0.00	0.00	0.00
Uniform Del:	0.0	13.1	0.0	0.0	10.1	0.0	15.5	0.0	12.8	0.0	0.0	0.0
IncremntDel:	0.0	1.5	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B+	A	B	A	B	A	A	A
HCM2kAvgQ:	0	8	0	0	2	0	10	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #203: I-280 S Ramp/Wolfe Rd 1645-203 [CMP 2010]



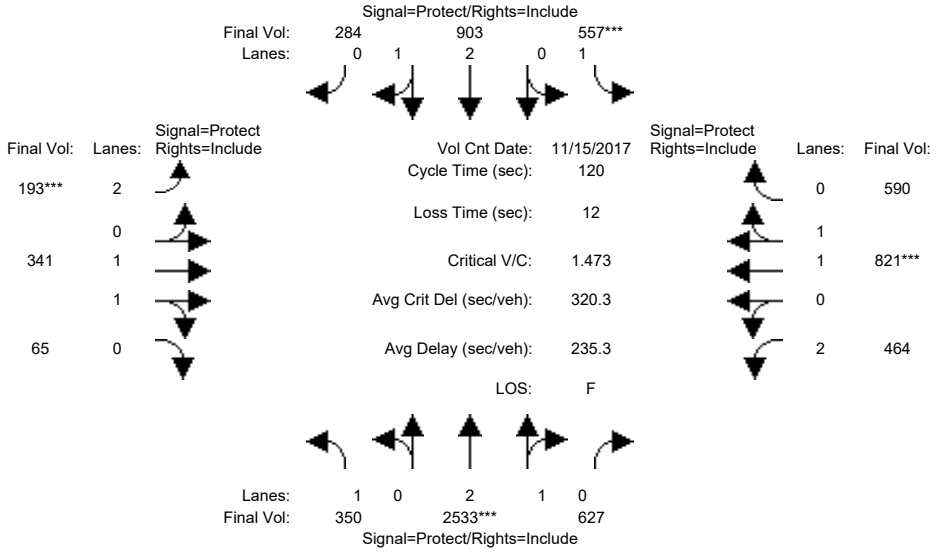
Street Name:	Wolfe Road						I-280 S. Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 PM to 6:30 PM												
Base Vol:	0	1079	520	0	1746	676	394	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1079	520	0	1746	676	394	0	331	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1079	520	0	1746	676	394	0	331	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1079	0	0	1746	0	394	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1079	0	0	1746	0	394	0	331	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1079	0	0	1746	0	394	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.23	0.00	0.13	0.00	0.11	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	31.9	0.0	0.0	31.9	0.0	14.1	0.0	14.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.49	0.00	0.00	0.40	0.00	0.49	0.00	0.41	0.00	0.00	0.00
Uniform Del:	0.0	6.8	0.0	0.0	6.3	0.0	17.4	0.0	17.0	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.1	0.0	0.5	0.0	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.9	0.0	0.0	6.3	0.0	17.9	0.0	17.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.9	0.0	0.0	6.3	0.0	17.9	0.0	17.4	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B	A	B	A	A	A
HCM2kAvgQ:	0	1	0	0	1	0	4	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1200: BOWERS/SCOTT



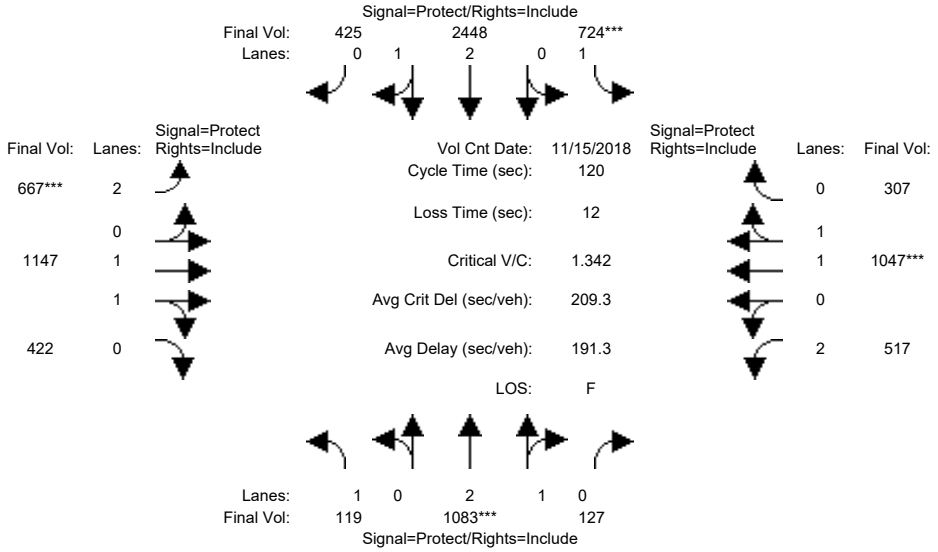
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	30	30	20	30	30	15	20	20	15	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	350	2533	627	557	903	284	193	341	65	464	821	590
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	350	2533	627	557	903	284	193	341	65	464	821	590
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	2533	627	557	903	284	193	341	65	464	821	590
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	350	2533	627	557	903	284	193	341	65	464	821	590
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	350	2533	627	557	903	284	193	341	65	464	821	590
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	350	2533	627	557	903	284	193	341	65	464	821	590
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	0.99	0.95
Lanes:	1.00	2.38	0.62	1.00	2.26	0.74	2.00	1.67	0.33	2.00	1.14	0.86
Final Sat.:	1750	4487	1111	1750	4258	1339	3150	3107	592	3150	2152	1546
Capacity Analysis Module:												
Vol/Sat:	0.20	0.56	0.56	0.32	0.21	0.21	0.06	0.11	0.11	0.15	0.38	0.38
Crit Moves:		****		****			****				****	
Green Time:	28.9	41.5	41.5	23.4	36.1	36.1	15.0	22.9	22.9	20.2	28.1	28.1
Volume/Cap:	0.83	1.63	1.63	1.63	0.71	0.71	0.49	0.58	0.58	0.87	1.63	1.63
Uniform Del:	43.3	39.2	39.2	48.3	37.2	37.2	48.9	44.2	44.2	48.7	46.0	46.0
IncremntDel:	13.2	286	286.5	297.1	1.4	1.4	1.0	1.2	1.2	15.0	289	289.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.4	326	325.7	345.4	38.6	38.6	49.9	45.3	45.3	63.6	335	335.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	326	325.7	345.4	38.6	38.6	49.9	45.3	45.3	63.6	335	335.4
LOS by Move:	E+	F	F	F	D+	D+	D	D	D	E	F	F
HCM2kAvgQ:	12	88	88	50	13	13	4	7	7	11	60	60

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1200: BOWERS/SCOTT



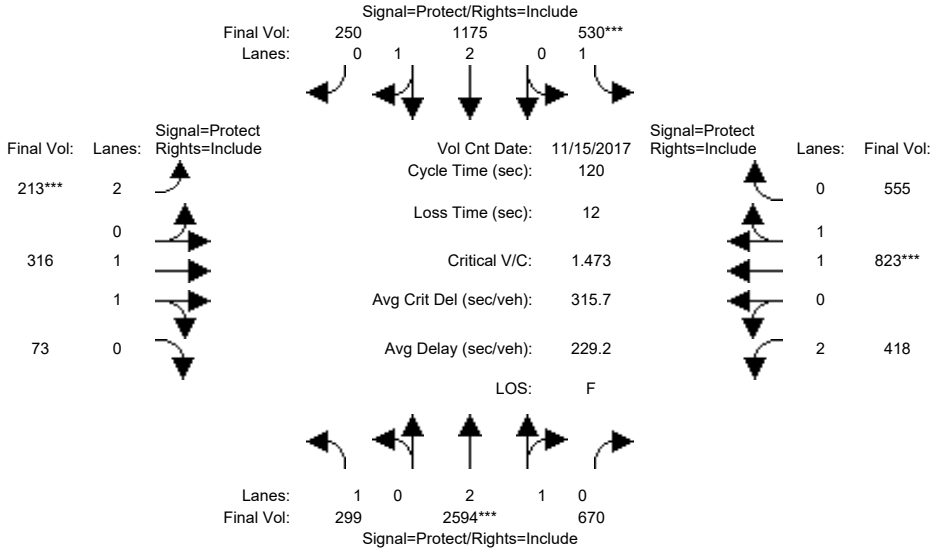
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	1083	127	724	2448	425	667	1147	422	517	1047	307
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	1.00	2.67	0.33	1.00	2.54	0.46	2.00	1.45	0.55	2.00	1.53	0.47
Final Sat.:	1750	5011	588	1750	4771	828	3150	2704	995	3150	2860	839
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.41	0.51	0.51	0.21	0.42	0.42	0.16	0.37	0.37
Crit Moves:		****		****			****				****	
Green Time:	6.6	19.3	19.3	37.0	49.7	49.7	18.9	37.3	37.3	14.4	32.7	32.7
Volume/Cap:	1.24	1.34	1.34	1.34	1.24	1.24	1.34	1.37	1.37	1.37	1.34	1.34
Uniform Del:	56.7	50.3	50.3	41.5	35.1	35.1	50.5	41.4	41.4	52.8	43.6	43.6
IncremntDel:	168.9	161	161.3	165.9	111	111.0	166.9	170	170.4	181.0	161	160.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	225.6	212	211.6	207.4	146	146.2	217.4	212	211.8	233.7	204	204.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	225.6	212	211.6	207.4	146	146.2	217.4	212	211.8	233.7	204	204.1
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	F
HCM2kAvgQ:	8	28	28	52	58	58	27	56	56	22	47	47

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1200: BOWERS/SCOTT



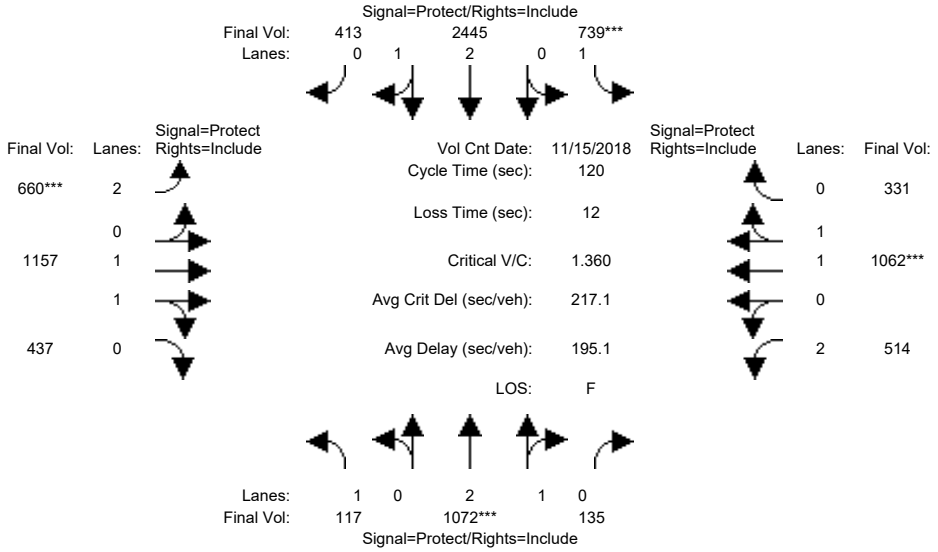
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	30	30	20	30	30	15	20	20	15	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	299	2594	670	530	1175	250	213	316	73	418	823	555
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	2594	670	530	1175	250	213	316	73	418	823	555
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	2594	670	530	1175	250	213	316	73	418	823	555
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	2594	670	530	1175	250	213	316	73	418	823	555
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	2594	670	530	1175	250	213	316	73	418	823	555
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	2594	670	530	1175	250	213	316	73	418	823	555
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	0.99	0.95
Lanes:	1.00	2.36	0.64	1.00	2.45	0.55	2.00	1.61	0.39	2.00	1.17	0.83
Final Sat.:	1750	4449	1149	1750	4616	982	3150	3005	694	3150	2209	1489
Capacity Analysis Module:												
Vol/Sat:	0.17	0.58	0.58	0.30	0.25	0.25	0.07	0.11	0.11	0.13	0.37	0.37
Crit Moves:		****		****			****				****	
Green Time:	26.3	43.1	43.1	22.4	39.2	39.2	15.0	23.7	23.7	18.9	27.5	27.5
Volume/Cap:	0.78	1.62	1.62	1.62	0.78	0.78	0.54	0.53	0.53	0.84	1.62	1.62
Uniform Del:	44.1	38.5	38.5	48.8	36.5	36.5	49.3	43.2	43.2	49.1	46.2	46.2
IncremntDel:	9.9	283	283.1	294.4	2.2	2.2	1.5	0.8	0.8	12.6	286	286.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.0	322	321.5	343.3	38.7	38.7	50.8	44.0	44.0	61.7	332	332.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.0	322	321.5	343.3	38.7	38.7	50.8	44.0	44.0	61.7	332	332.4
LOS by Move:	D-	F	F	F	D+	D+	D	D	D	E	F	F
HCM2kAvgQ:	10	90	90	47	15	15	4	6	6	9	58	58

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1200: BOWERS/SCOTT



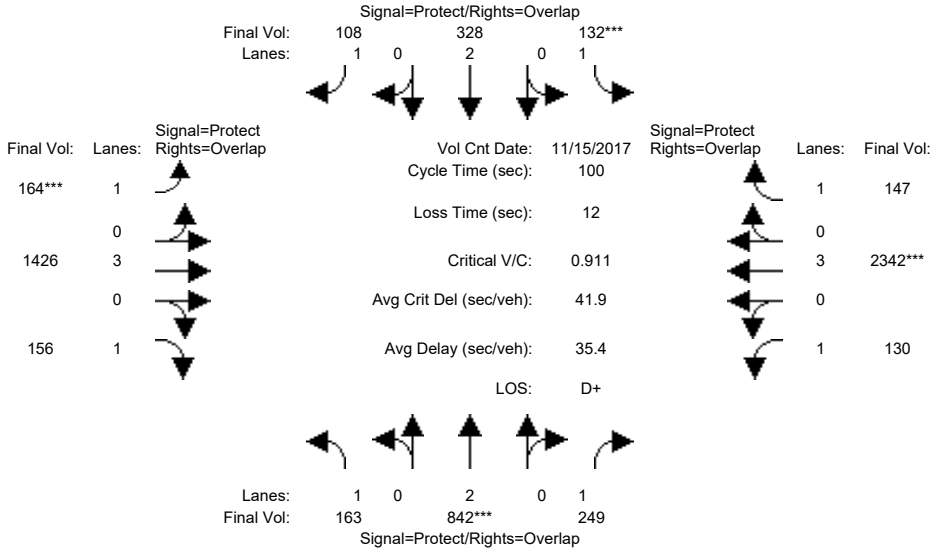
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	1.00	2.65	0.35	1.00	2.55	0.45	2.00	1.44	0.56	2.00	1.51	0.49
Final Sat.:	1750	4973	626	1750	4790	809	3150	2685	1014	3150	2820	879
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.42	0.51	0.51	0.21	0.43	0.43	0.16	0.38	0.38
Crit Moves:		****		****			****				****	
Green Time:	6.5	19.0	19.0	37.3	49.8	49.8	18.5	37.5	37.5	14.2	33.2	33.2
Volume/Cap:	1.23	1.36	1.36	1.36	1.23	1.23	1.36	1.38	1.38	1.38	1.36	1.36
Uniform Del:	56.7	50.5	50.5	41.4	35.1	35.1	50.8	41.2	41.2	52.9	43.4	43.4
IncremntDel:	166.8	169	169.3	173.7	108	107.9	175.0	176	175.8	186.4	168	168.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	223.5	220	219.8	215.0	143	143.0	225.7	217	217.1	239.3	212	211.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	223.5	220	219.8	215.0	143	143.0	225.7	217	217.1	239.3	212	211.8
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	F
HCM2kAvgQ:	8	28	28	54	57	57	28	57	57	22	49	49

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



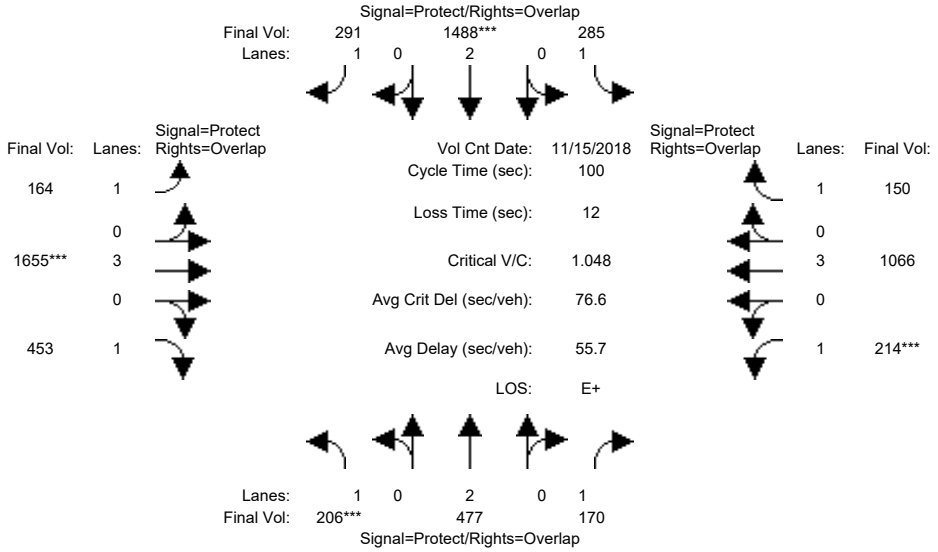
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	4	4	4	4	4	4	4	15	15	4	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	163	842	249	132	328	108	164	1426	156	130	2342	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	842	249	132	328	108	164	1426	156	130	2342	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	842	249	132	328	108	164	1426	156	130	2342	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	842	249	132	328	108	164	1426	156	130	2342	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	842	249	132	328	108	164	1426	156	130	2342	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	842	249	132	328	108	164	1426	156	130	2342	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.22	0.14	0.08	0.09	0.06	0.09	0.25	0.09	0.07	0.41	0.08
Crit Moves:		****		****			****				****	
Green Time:	16.9	24.3	37.0	8.3	15.7	26.0	10.3	42.7	59.6	12.7	45.1	53.4
Volume/Cap:	0.55	0.91	0.38	0.91	0.55	0.24	0.91	0.59	0.15	0.59	0.91	0.16
Uniform Del:	38.1	36.8	23.1	45.5	38.9	29.2	44.4	21.9	8.9	41.2	25.6	11.9
IncremntDel:	7.2	14.6	1.7	54.1	3.6	1.2	47.0	1.0	0.3	10.8	6.2	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.2	51.4	24.9	99.6	42.5	30.4	91.4	22.9	9.2	52.0	31.8	12.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	51.4	24.9	99.6	42.5	30.4	91.4	22.9	9.2	52.0	31.8	12.2
LOS by Move:	D	D-	C	F	D	C	F	C+	A	D-	C	B
HCM2kAvgQ:	6	16	6	6	5	3	6	11	2	4	21	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



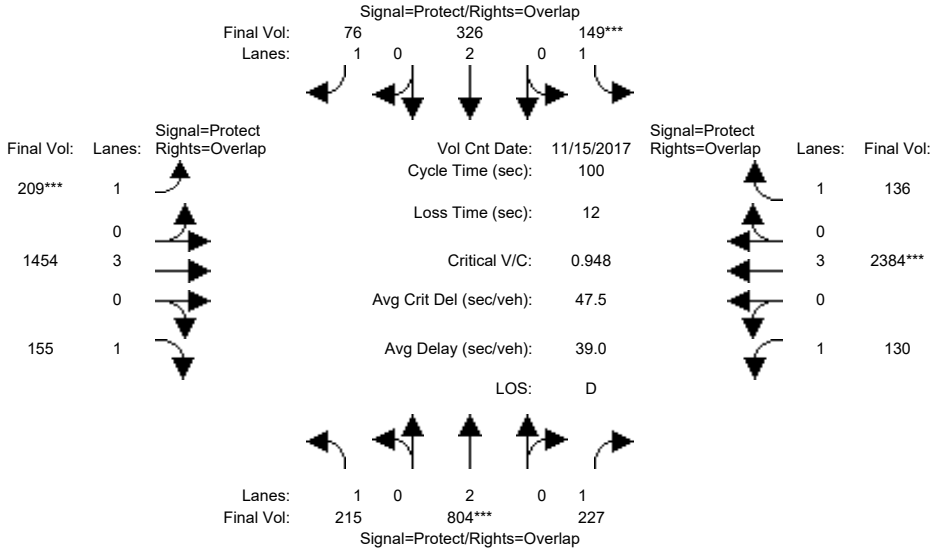
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	206	477	170	285	1488	291	164	1655	453	214	1066	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	206	477	170	285	1488	291	164	1655	453	214	1066	150
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	206	477	170	285	1488	291	164	1655	453	214	1066	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	206	477	170	285	1488	291	164	1655	453	214	1066	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	206	477	170	285	1488	291	164	1655	453	214	1066	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	206	477	170	285	1488	291	164	1655	453	214	1066	150
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.10	0.16	0.39	0.17	0.09	0.29	0.26	0.12	0.19	0.09
Crit Moves:	****				****			****		****		
Green Time:	11.2	21.2	32.8	27.5	37.4	50.5	13.1	27.7	39.0	11.7	26.2	53.7
Volume/Cap:	1.05	0.59	0.30	0.59	1.05	0.33	0.71	1.05	0.66	1.05	0.71	0.16
Uniform Del:	44.4	35.5	25.0	31.4	31.3	14.7	41.6	36.1	25.1	44.2	33.5	11.7
IncremntDel:	77.3	1.2	0.3	2.0	37.4	0.2	10.0	36.3	2.5	76.1	1.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	121.7	36.7	25.3	33.4	68.7	14.9	51.7	72.4	27.6	120.2	35.1	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	121.7	36.7	25.3	33.4	68.7	14.9	51.7	72.4	27.6	120.2	35.1	11.8
LOS by Move:	F	D+	C	C-	E	B	D-	E	C	F	D+	B+
HCM2kAvgQ:	12	7	4	8	26	5	5	20	12	9	9	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



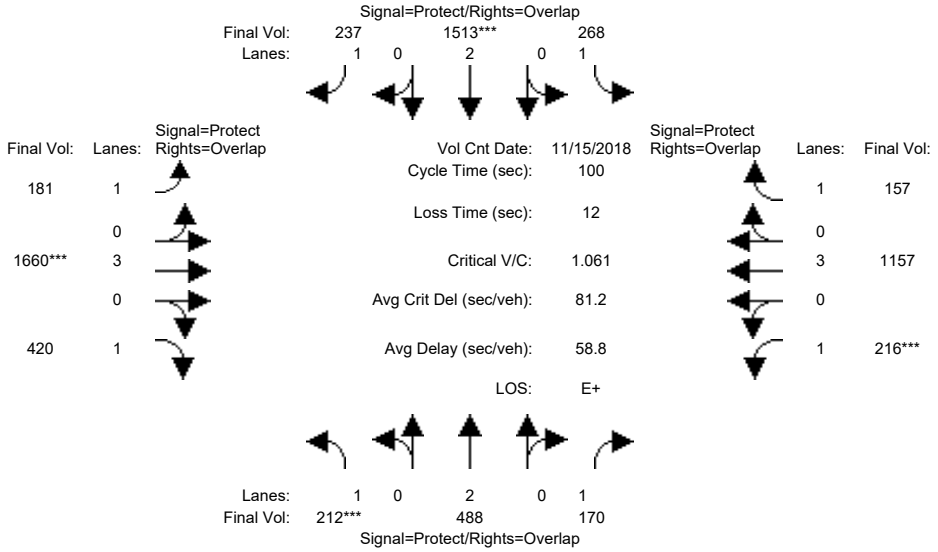
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	4	4	4	4	4	4	4	15	15	4	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	215	804	227	149	326	76	209	1454	155	130	2384	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	215	804	227	149	326	76	209	1454	155	130	2384	136
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	215	804	227	149	326	76	209	1454	155	130	2384	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	804	227	149	326	76	209	1454	155	130	2384	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	804	227	149	326	76	209	1454	155	130	2384	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	804	227	149	326	76	209	1454	155	130	2384	136
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.21	0.13	0.09	0.09	0.04	0.12	0.26	0.09	0.07	0.42	0.08
Crit Moves:		****		****			****				****	
Green Time:	18.4	22.3	35.1	9.0	12.9	25.5	12.6	43.9	62.3	12.8	44.1	53.1
Volume/Cap:	0.67	0.95	0.37	0.95	0.67	0.17	0.95	0.58	0.14	0.58	0.95	0.15
Uniform Del:	37.9	38.3	24.2	45.3	41.5	29.0	43.4	21.1	7.8	41.1	26.8	11.9
IncremntDel:	10.4	20.6	1.7	59.2	7.0	0.8	48.5	1.0	0.3	10.6	9.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.4	58.9	25.9	104.5	48.6	29.9	91.9	22.1	8.1	51.6	36.2	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.4	58.9	25.9	104.5	48.6	29.9	91.9	22.1	8.1	51.6	36.2	12.3
LOS by Move:	D	E+	C	F	D	C	F	C+	A	D-	D+	B
HCM2kAvgQ:	8	17	6	7	5	2	8	11	2	4	23	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1201: BOWERS/KIELY/EL CAMINO REAL



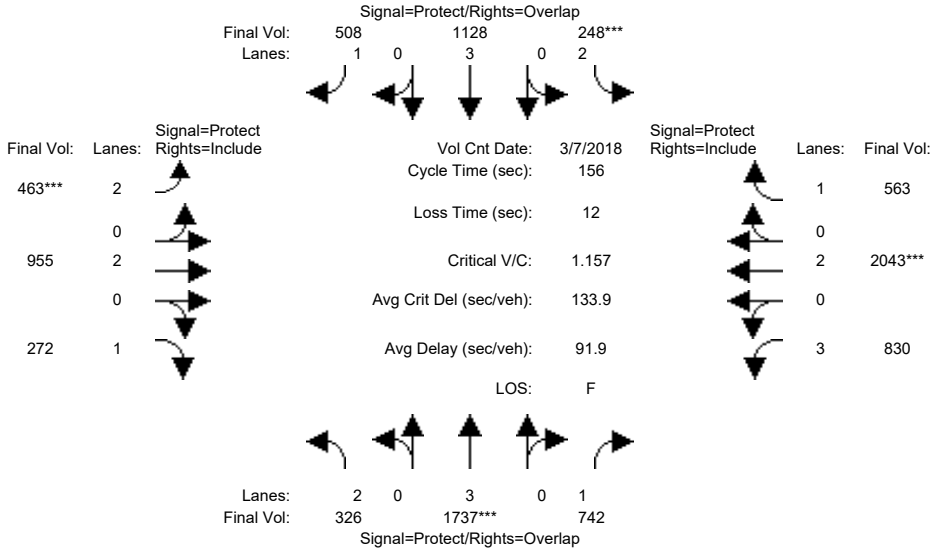
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	212	488	170	268	1513	237	181	1660	420	216	1157	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	488	170	268	1513	237	181	1660	420	216	1157	157
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	488	170	268	1513	237	181	1660	420	216	1157	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	488	170	268	1513	237	181	1660	420	216	1157	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	488	170	268	1513	237	181	1660	420	216	1157	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	488	170	268	1513	237	181	1660	420	216	1157	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.10	0.15	0.40	0.14	0.10	0.29	0.24	0.12	0.20	0.09
Crit Moves:	****				****			****		****		
Green Time:	11.4	22.3	33.9	26.6	37.5	50.7	13.2	27.4	38.9	11.6	25.9	52.5
Volume/Cap:	1.06	0.58	0.29	0.58	1.06	0.27	0.78	1.06	0.62	1.06	0.78	0.17
Uniform Del:	44.3	34.6	24.2	31.8	31.2	14.1	42.0	36.3	24.6	44.2	34.5	12.4
IncremntDel:	80.8	1.0	0.3	1.8	42.0	0.2	16.0	41.0	1.7	80.2	2.8	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	125.1	35.6	24.4	33.6	73.2	14.2	58.0	77.3	26.3	124.4	37.3	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	125.1	35.6	24.4	33.6	73.2	14.2	58.0	77.3	26.3	124.4	37.3	12.5
LOS by Move:	F	D+	C	C-	E	B	E+	E-	C	F	D+	B
HCM2kAvgQ:	13	7	4	7	27	4	6	21	10	9	10	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1207: GREAT AMERICA/TASMAN



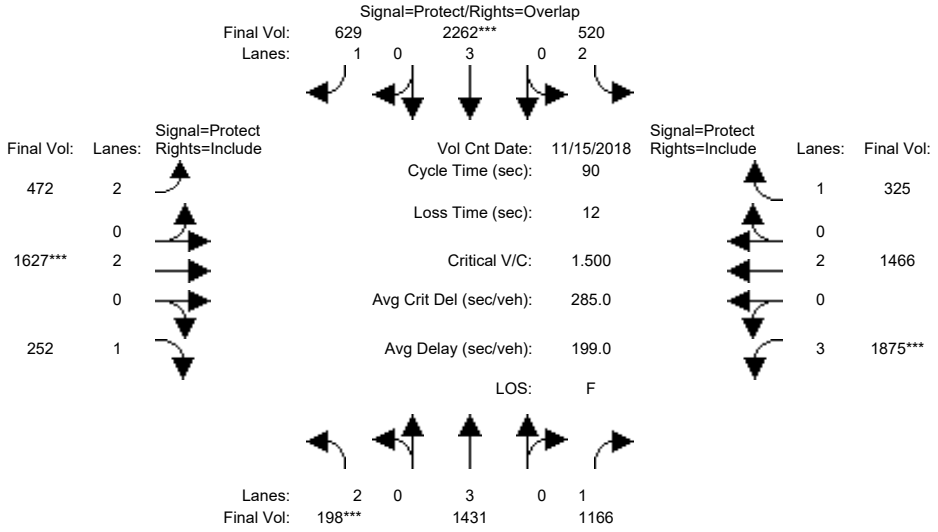
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	8	12	12	7	12	12	7	10	10	8	10	10
Y+R:	5.0	6.7	6.7	5.0	6.7	6.7	5.0	6.4	6.4	5.0	6.4	6.4
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	326	1737	742	248	1128	508	463	955	272	830	2043	563
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	1737	742	248	1128	508	463	955	272	830	2043	563
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	326	1737	742	248	1128	508	463	955	272	830	2043	563
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	326	1737	742	248	1128	508	463	955	272	830	2043	563
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	1737	742	248	1128	508	463	955	272	830	2043	563
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	1737	742	248	1128	508	463	955	272	830	2043	563
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.80	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	4551	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.30	0.42	0.08	0.20	0.29	0.15	0.25	0.16	0.18	0.54	0.32
Crit Moves:		****		****			****				****	
Green Time:	17.8	41.1	79.9	10.6	33.9	53.8	19.8	53.5	53.5	38.8	72.5	72.5
Volume/Cap:	0.91	1.16	0.83	1.16	0.91	0.84	1.16	0.73	0.45	0.73	1.16	0.69
Uniform Del:	68.3	57.5	32.2	72.7	59.5	47.2	68.1	45.0	39.9	53.8	41.8	33.0
IncremntDel:	29.3	78.6	8.7	110.3	11.4	13.4	95.3	3.7	2.5	4.2	77.5	4.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	97.6	136	40.9	183.0	70.9	60.6	163.4	48.7	42.3	58.0	119	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.6	136	40.9	183.0	70.9	60.6	163.4	48.7	42.3	58.0	119	37.8
LOS by Move:	F	F	D	F	E	E	F	D	D	E+	F	D+
HCM2kAvgQ:	10	38	33	12	21	26	17	18	10	16	67	23

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1207: GREAT AMERICA/TASMAN



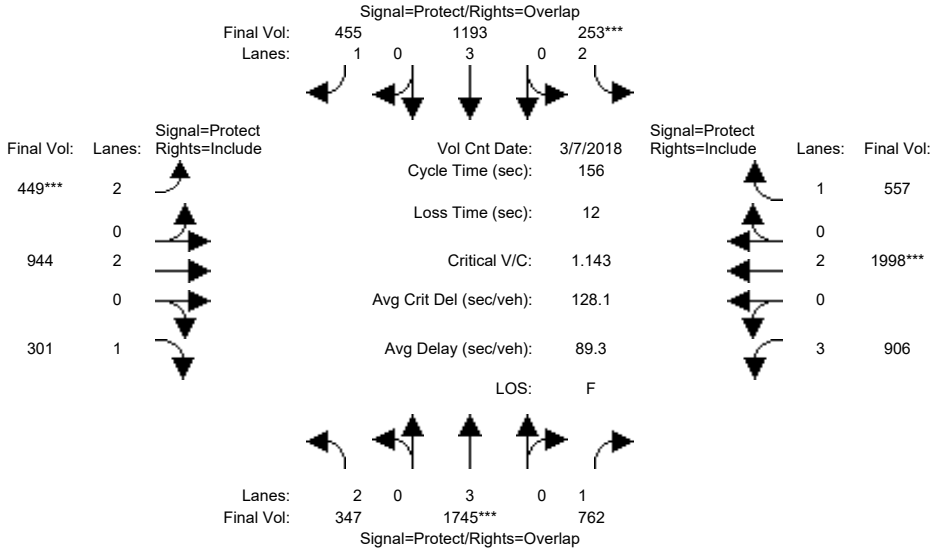
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	198	1431	1166	520	2262	629	472	1627	252	1875	1466	325
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.80	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	4551	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.67	0.17	0.40	0.36	0.15	0.43	0.14	0.41	0.39	0.19
Crit Moves:	****				****			****			****	
Green Time:	7.0	18.1	41.7	11.7	22.8	36.3	13.5	24.6	24.6	23.6	34.7	34.7
Volume/Cap:	0.81	1.25	1.44	1.27	1.57	0.89	1.00	1.57	0.53	1.57	1.00	0.48
Uniform Del:	40.8	36.0	24.1	39.1	33.6	25.0	38.3	32.7	27.8	33.2	27.6	20.8
IncremntDel:	17.8	120	204.1	138.5	259	13.6	41.3	260	1.1	259.7	23.4	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.6	156	228.2	177.6	293	38.7	79.6	293	28.9	292.9	51.0	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.6	156	228.2	177.6	293	38.7	79.6	293	28.9	292.9	51.0	21.4
LOS by Move:	E+	F	F	F	F	D+	E-	F	C	F	D-	C+
HCM2kAvgQ:	4	25	81	19	56	21	8	57	6	58	28	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1207: GREAT AMERICA/TASMAN



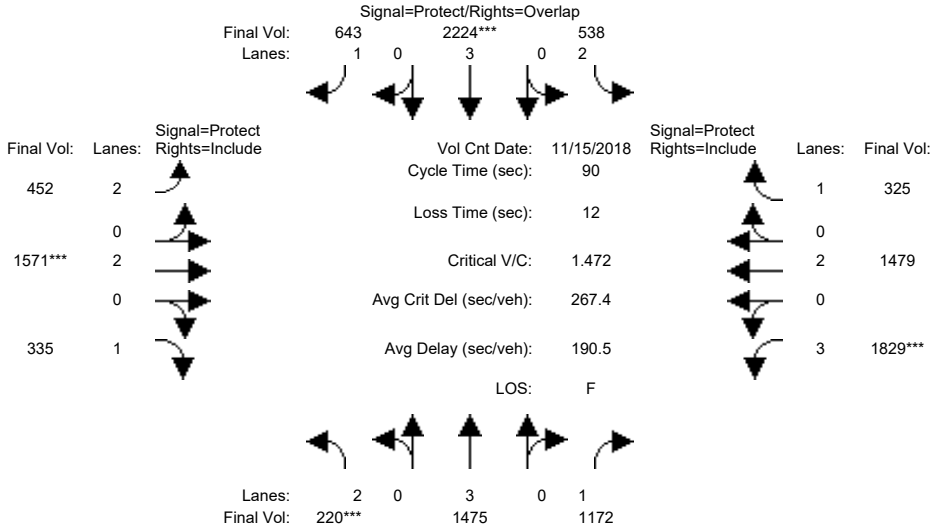
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	8	12	12	7	12	12	7	10	10	8	10	10
Y+R:	5.0	6.7	6.7	5.0	6.7	6.7	5.0	6.4	6.4	5.0	6.4	6.4
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	347	1745	762	253	1193	455	449	944	301	906	1998	557
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	347	1745	762	253	1193	455	449	944	301	906	1998	557
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	347	1745	762	253	1193	455	449	944	301	906	1998	557
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	347	1745	762	253	1193	455	449	944	301	906	1998	557
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	347	1745	762	253	1193	455	449	944	301	906	1998	557
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	347	1745	762	253	1193	455	449	944	301	906	1998	557
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.80	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	4551	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.44	0.08	0.21	0.26	0.14	0.25	0.17	0.20	0.53	0.32
Crit Moves:		****		****			****				****	
Green Time:	18.2	41.8	82.4	11.0	34.6	54.0	19.5	50.7	50.7	40.6	71.8	71.8
Volume/Cap:	0.94	1.14	0.82	1.14	0.94	0.75	1.14	0.77	0.53	0.77	1.14	0.69
Uniform Del:	68.4	57.1	30.8	72.5	59.8	45.0	68.3	47.3	43.0	53.3	42.1	33.3
IncremntDel:	34.8	72.6	8.3	104.3	15.1	8.3	90.3	4.6	3.5	4.7	71.6	4.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	103.2	130	39.0	176.8	74.9	53.4	158.6	51.9	46.5	58.0	114	38.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	103.2	130	39.0	176.8	74.9	53.4	158.6	51.9	46.5	58.0	114	38.2
LOS by Move:	F	F	D	F	E	D-	F	D-	D	E+	F	D+
HCM2kAvgQ:	11	37	33	12	23	22	16	19	12	18	65	23

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1207: GREAT AMERICA/TASMAN



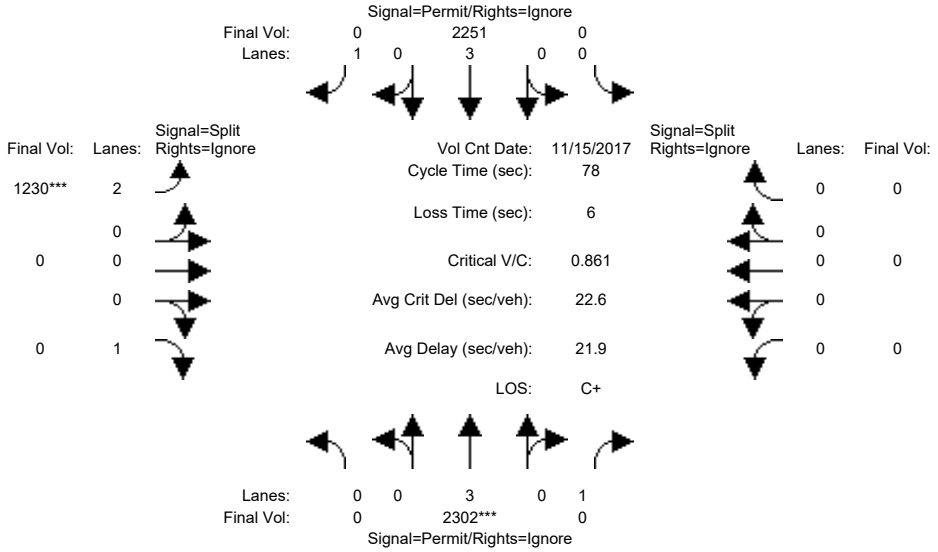
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	1475	1172	538	2224	643	452	1571	335	1829	1479	325
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.80	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	4551	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.26	0.67	0.17	0.39	0.37	0.14	0.41	0.19	0.40	0.39	0.19
Crit Moves:	****				****			****			****	
Green Time:	7.0	18.3	42.0	11.7	23.0	35.9	12.9	24.3	24.3	23.7	35.1	35.1
Volume/Cap:	0.90	1.27	1.44	1.32	1.53	0.92	1.00	1.53	0.71	1.53	1.00	0.48
Uniform Del:	41.1	35.8	24.0	39.2	33.5	25.7	38.5	32.8	29.6	33.2	27.4	20.6
IncremntDel:	31.9	129	203.2	158.9	241	17.5	41.9	243	4.9	241.9	23.0	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.1	165	227.2	198.1	275	43.2	80.4	275	34.5	275.1	50.4	21.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.1	165	227.2	198.1	275	43.2	80.4	275	34.5	275.1	50.4	21.1
LOS by Move:	E	F	F	F	F	D	F	F	C-	F	D	C+
HCM2kAvgQ:	4	27	82	21	53	23	8	54	8	55	28	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1208: BOWERS/101 SB



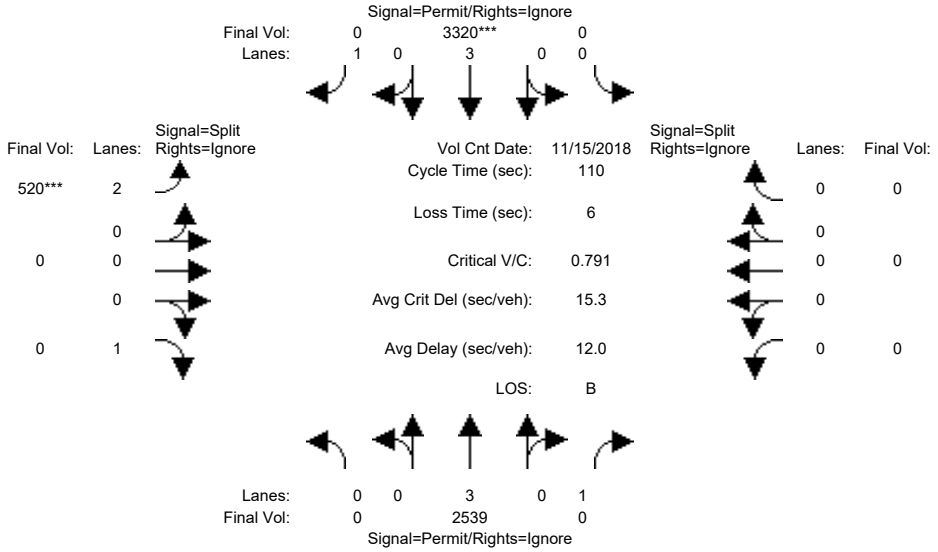
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	0	10	10	12	0	12	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	2302	840	0	2251	710	1230	0	800	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2302	840	0	2251	710	1230	0	800	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2302	840	0	2251	710	1230	0	800	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2302	0	0	2251	0	1230	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2302	0	0	2251	0	1230	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2302	0	0	2251	0	1230	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.00	0.00	0.39	0.00	0.39	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	36.6	0.0	0.0	36.6	0.0	35.4	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.86	0.00	0.00	0.84	0.00	0.86	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	18.4	0.0	0.0	18.2	0.0	19.1	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	3.1	0.0	0.0	2.6	0.0	5.5	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	21.5	0.0	0.0	20.7	0.0	24.6	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.5	0.0	0.0	20.7	0.0	24.6	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	C+	A	A	C+	A	C	A	A	A	A	A
HCM2kAvgQ:	0	15	0	0	19	0	19	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1208: BOWERS/101 SB



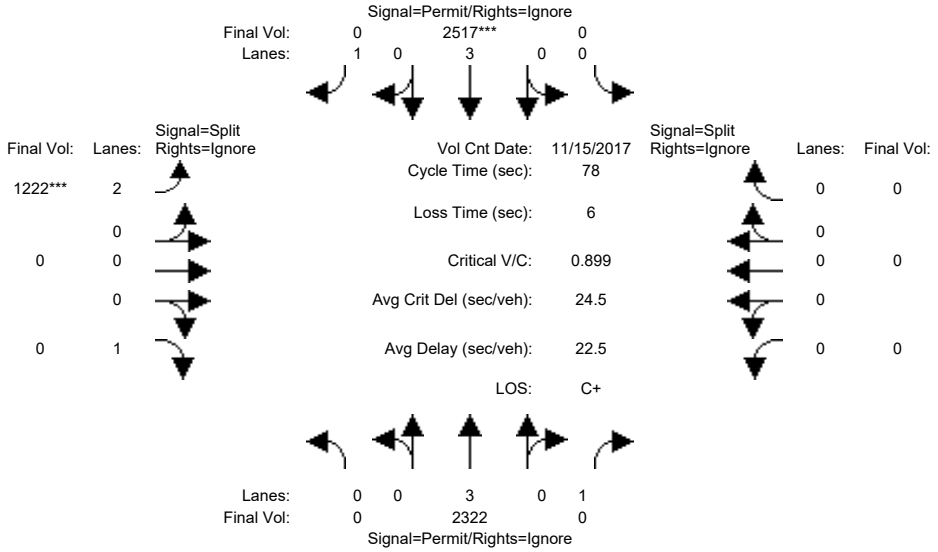
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	2539	1070	0	3320	970	520	0	680	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2539	1070	0	3320	970	520	0	680	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2539	1070	0	3320	970	520	0	680	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2539	0	0	3320	0	520	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2539	0	0	3320	0	520	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2539	0	0	3320	0	520	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.45	0.00	0.00	0.58	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	81.0	0.0	0.0	81.0	0.0	23.0	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.60	0.00	0.00	0.79	0.00	0.79	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	6.9	0.0	0.0	9.1	0.0	41.2	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	1.1	0.0	6.5	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	7.1	0.0	0.0	10.2	0.0	47.7	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.1	0.0	0.0	10.2	0.0	47.7	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B+	A	D	A	A	A	A	A
HCM2kAvgQ:	0	12	0	0	25	0	12	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1208: BOWERS/101 SB



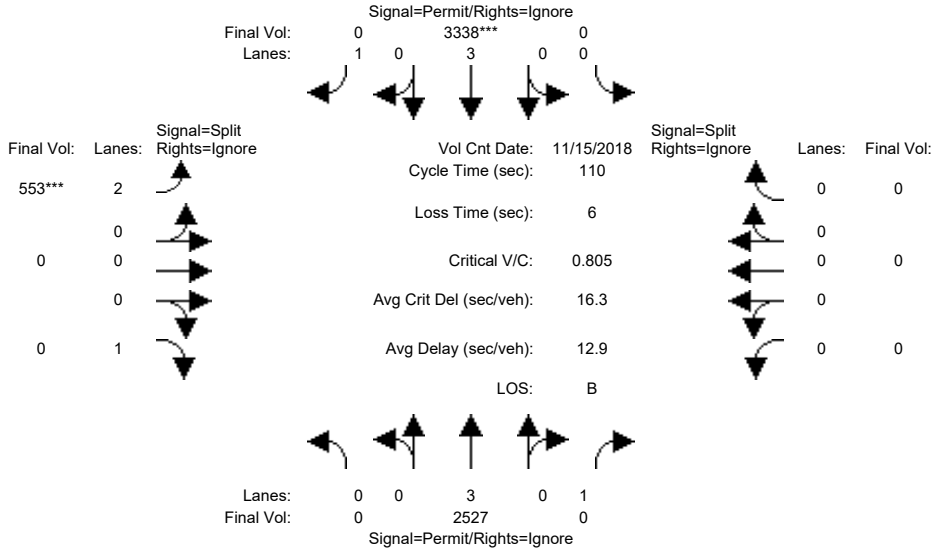
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	0	10	10	12	0	12	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	2322	840	0	2517	710	1222	0	800	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2322	840	0	2517	710	1222	0	800	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2322	840	0	2517	710	1222	0	800	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2322	0	0	2517	0	1222	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2322	0	0	2517	0	1222	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2322	0	0	2517	0	1222	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.41	0.00	0.00	0.44	0.00	0.39	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	38.3	0.0	0.0	38.3	0.0	33.7	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.83	0.00	0.00	0.90	0.00	0.90	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	17.0	0.0	0.0	18.1	0.0	20.6	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	2.2	0.0	0.0	4.4	0.0	8.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	19.2	0.0	0.0	22.4	0.0	28.9	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.2	0.0	0.0	22.4	0.0	28.9	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	B-	A	A	C+	A	C	A	A	A	A	A
HCM2kAvgQ:	0	15	0	0	22	0	21	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1208: BOWERS/101 SB



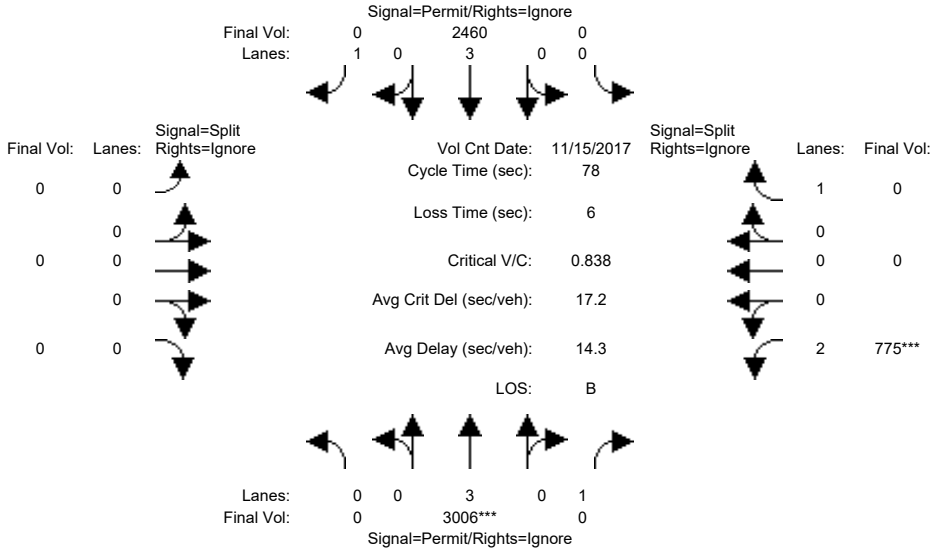
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	2527	1070	0	3338	970	553	0	680	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2527	1070	0	3338	970	553	0	680	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2527	1070	0	3338	970	553	0	680	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2527	0	0	3338	0	553	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2527	0	0	3338	0	553	0	0	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2527	0	0	3338	0	553	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	0	5700	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.44	0.00	0.00	0.59	0.00	0.18	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****		****					
Green Time:	0.0	80.0	0.0	0.0	80.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.61	0.00	0.00	0.81	0.00	0.81	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	7.3	0.0	0.0	9.9	0.0	40.8	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	1.2	0.0	6.9	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	7.6	0.0	0.0	11.1	0.0	47.7	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.6	0.0	0.0	11.1	0.0	47.7	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	B+	A	D	A	A	A	A	A
HCM2kAvgQ:	0	13	0	0	26	0	13	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1209: GREAT AMERICA/101 NB



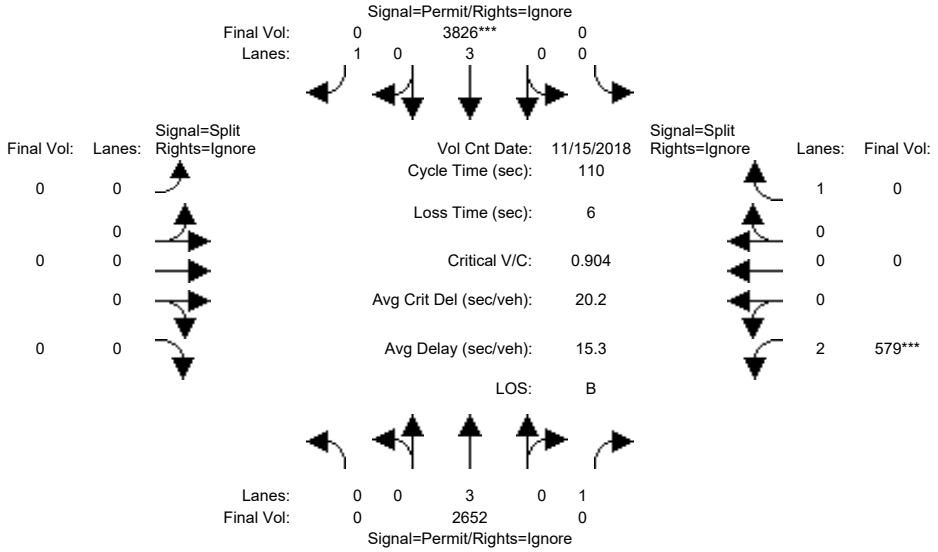
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	20	20	0	20	20	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	3006	450	0	2460	350	0	0	0	775	0	1370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3006	450	0	2460	350	0	0	0	775	0	1370
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3006	450	0	2460	350	0	0	0	775	0	1370
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	3006	0	0	2460	0	0	0	0	775	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3006	0	0	2460	0	0	0	0	775	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	3006	0	0	2460	0	0	0	0	775	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.25	0.00	0.00
Crit Moves:		****								****		
Green Time:	0.0	49.1	0.0	0.0	49.1	0.0	0.0	0.0	0.0	22.9	0.0	0.0
Volume/Cap:	0.00	0.84	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.84	0.00	0.00
Uniform Del:	0.0	11.3	0.0	0.0	9.4	0.0	0.0	0.0	0.0	25.8	0.0	0.0
IncremntDel:	0.0	1.9	0.0	0.0	0.6	0.0	0.0	0.0	0.0	6.8	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	13.2	0.0	0.0	10.0	0.0	0.0	0.0	0.0	32.6	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.2	0.0	0.0	10.0	0.0	0.0	0.0	0.0	32.6	0.0	0.0
LOS by Move:	A	B	A	A	A	A	A	A	A	C-	A	A
HCM2kAvgQ:	0	21	0	0	12	0	0	0	0	13	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1209: GREAT AMERICA/101 NB



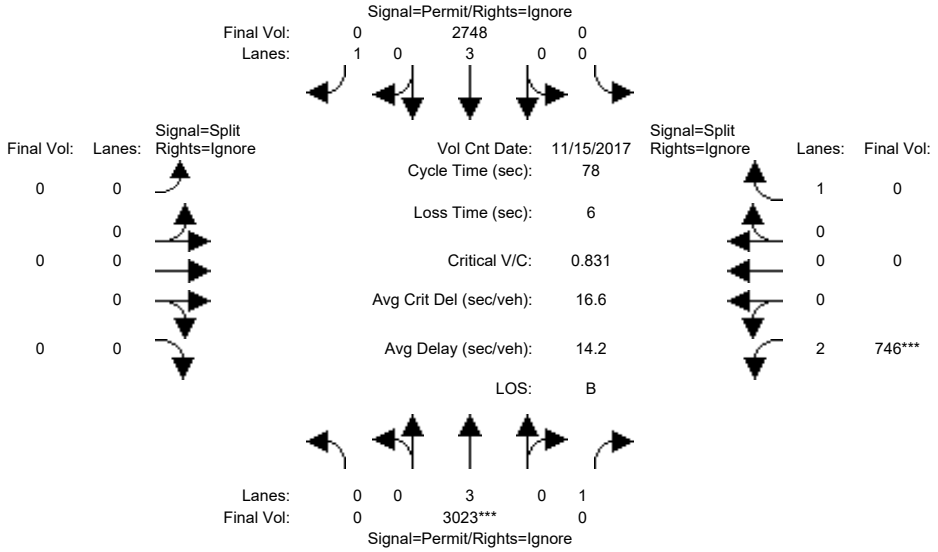
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	2652	570	0	3826	1890	0	0	0	579	0	1070
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2652	570	0	3826	1890	0	0	0	579	0	1070
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2652	570	0	3826	1890	0	0	0	579	0	1070
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2652	0	0	3826	0	0	0	0	579	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2652	0	0	3826	0	0	0	0	579	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2652	0	0	3826	0	0	0	0	579	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.47	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.18	0.00	0.00
Crit Moves:					****					****		
Green Time:	0.0	81.6	0.0	0.0	81.6	0.0	0.0	0.0	0.0	22.4	0.0	0.0
Volume/Cap:	0.00	0.63	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.90	0.00	0.00
Uniform Del:	0.0	6.8	0.0	0.0	11.1	0.0	0.0	0.0	0.0	42.8	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	16.3	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	7.1	0.0	0.0	14.3	0.0	0.0	0.0	0.0	59.1	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.1	0.0	0.0	14.3	0.0	0.0	0.0	0.0	59.1	0.0	0.0
LOS by Move:	A	A	A	A	B	A	A	A	A	E+	A	A
HCM2kAvgQ:	0	15	0	0	31	0	0	0	0	15	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1209: GREAT AMERICA/101 NB



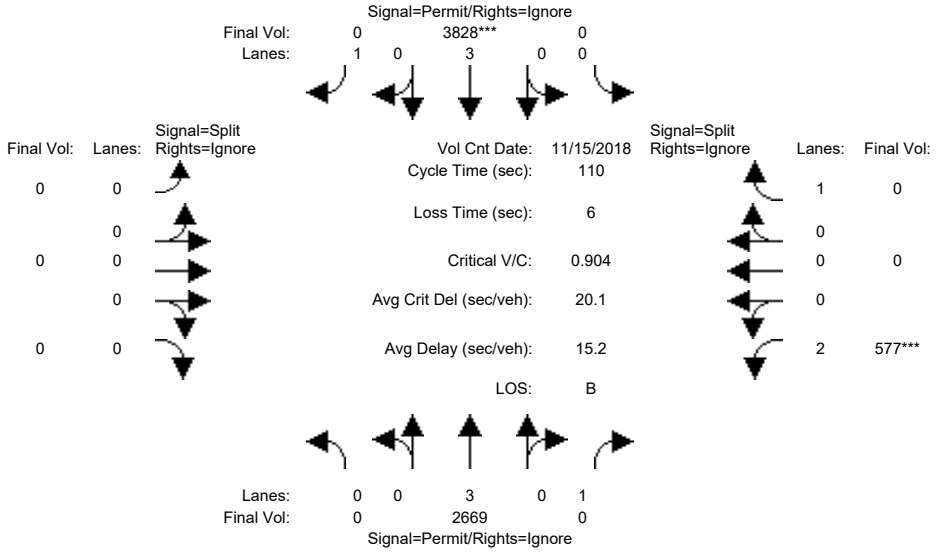
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	20	20	0	20	20	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	3023	450	0	2748	350	0	0	0	746	0	1370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3023	450	0	2748	350	0	0	0	746	0	1370
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3023	450	0	2748	350	0	0	0	746	0	1370
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	3023	0	0	2748	0	0	0	0	746	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3023	0	0	2748	0	0	0	0	746	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	3023	0	0	2748	0	0	0	0	746	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.24	0.00	0.00
Crit Moves:		****								****		
Green Time:	0.0	49.8	0.0	0.0	49.8	0.0	0.0	0.0	0.0	22.2	0.0	0.0
Volume/Cap:	0.00	0.83	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.83	0.00	0.00
Uniform Del:	0.0	10.9	0.0	0.0	9.9	0.0	0.0	0.0	0.0	26.1	0.0	0.0
IncremntDel:	0.0	1.7	0.0	0.0	0.9	0.0	0.0	0.0	0.0	6.6	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	12.6	0.0	0.0	10.8	0.0	0.0	0.0	0.0	32.8	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.6	0.0	0.0	10.8	0.0	0.0	0.0	0.0	32.8	0.0	0.0
LOS by Move:	A	B	A	A	B+	A	A	A	A	C-	A	A
HCM2kAvgQ:	0	21	0	0	14	0	0	0	0	13	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1209: GREAT AMERICA/101 NB



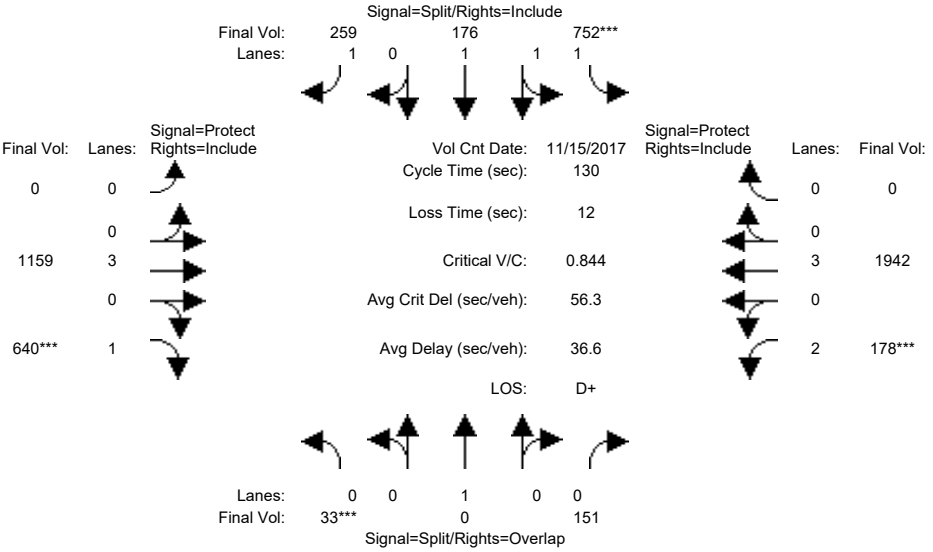
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	0	2669	570	0	3828	1890	0	0	0	577	0	1070
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2669	570	0	3828	1890	0	0	0	577	0	1070
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2669	570	0	3828	1890	0	0	0	577	0	1070
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	2669	0	0	3828	0	0	0	0	577	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2669	0	0	3828	0	0	0	0	577	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	2669	0	0	3828	0	0	0	0	577	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	3.00	1.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	0	5700	1750	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.47	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.18	0.00	0.00
Crit Moves:					****					****		
Green Time:	0.0	81.7	0.0	0.0	81.7	0.0	0.0	0.0	0.0	22.3	0.0	0.0
Volume/Cap:	0.00	0.63	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.90	0.00	0.00
Uniform Del:	0.0	6.8	0.0	0.0	11.1	0.0	0.0	0.0	0.0	42.8	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	16.3	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Delay/Veh:	0.0	7.1	0.0	0.0	14.2	0.0	0.0	0.0	0.0	59.1	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.1	0.0	0.0	14.2	0.0	0.0	0.0	0.0	59.1	0.0	0.0
LOS by Move:	A	A	A	A	B	A	A	A	A	E+	A	A
HCM2kAvgQ:	0	15	0	0	31	0	0	0	0	15	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1210: 280 SB / STEVENS CREEK



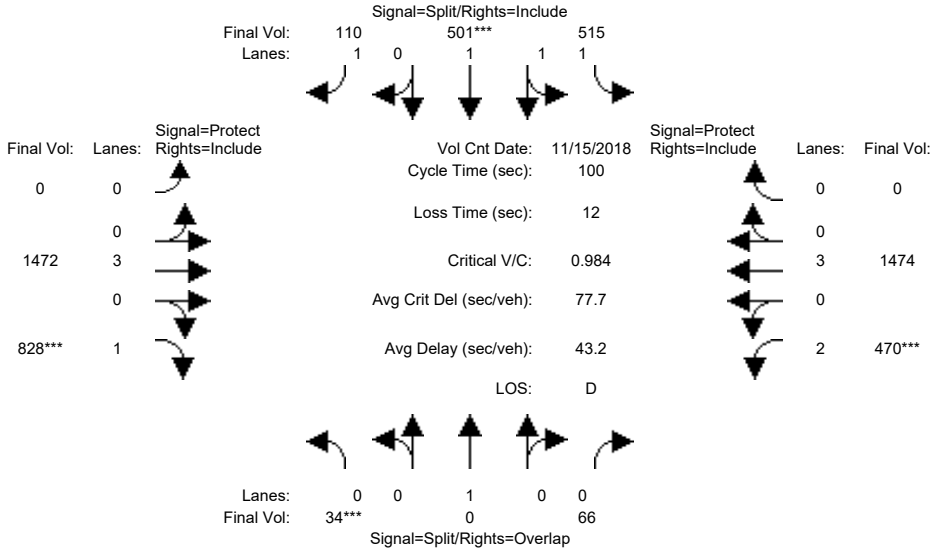
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	0	7	7	7	7	0	10	10	7	10	0
Y+R:	5.4	5.4	5.4	6.5	6.5	6.5	0.0	5.9	5.9	5.9	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	33	0	151	752	176	259	0	1159	640	178	1942	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	0	151	752	176	259	0	1159	640	178	1942	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	151	752	176	259	0	1159	640	178	1942	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	0	151	752	176	259	0	1159	640	178	1942	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	0	151	752	176	259	0	1159	640	178	1942	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	0	151	752	176	259	0	1159	640	178	1942	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.18	0.00	0.82	2.00	1.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	314	0	1436	3150	1900	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.24	0.09	0.15	0.00	0.20	0.37	0.06	0.34	0.00
Crit Moves:	****			****					****	****		
Green Time:	16.2	0.0	24.9	36.8	36.8	36.8	0.0	56.3	56.3	8.7	65.0	0.0
Volume/Cap:	0.84	0.00	0.55	0.84	0.33	0.52	0.00	0.47	0.84	0.84	0.68	0.00
Uniform Del:	55.7	0.0	47.5	43.9	36.8	39.2	0.0	26.2	32.9	60.0	24.6	0.0
IncremntDel:	31.0	0.0	6.3	8.0	0.3	3.9	0.0	0.6	11.1	31.8	1.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	86.7	0.0	53.8	51.9	37.2	43.2	0.0	26.8	44.0	91.8	26.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.7	0.0	53.8	51.9	37.2	43.2	0.0	26.8	44.0	91.8	26.0	0.0
LOS by Move:	F	A	D-	D-	D+	D	A	C	D	F	C	A
HCM2kAvgQ:	7	0	7	19	6	10	0	11	27	6	20	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1210: 280 SB / STEVENS CREEK



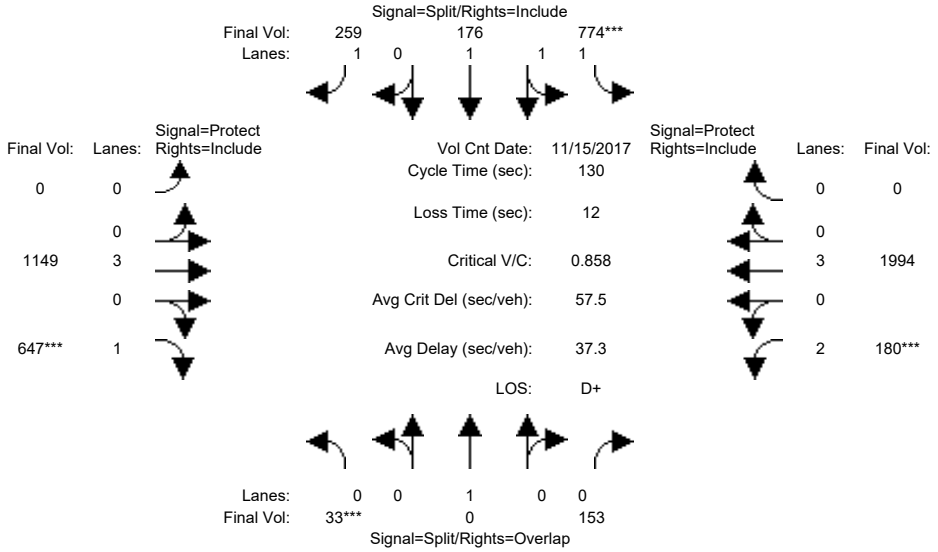
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	0	10	10	10	10	0	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	34	0	66	515	501	110	0	1472	828	470	1474	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	66	515	501	110	0	1472	828	470	1474	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	66	515	501	110	0	1472	828	470	1474	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	66	515	501	110	0	1472	828	470	1474	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	66	515	501	110	0	1472	828	470	1474	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	66	515	501	110	0	1472	828	470	1474	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	0.98	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.34	0.00	0.66	1.56	1.44	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	595	0	1155	2760	2685	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.19	0.19	0.06	0.00	0.26	0.47	0.15	0.26	0.00
Crit Moves:	****				****				****	****		
Green Time:	10.0	0.0	24.4	18.0	18.0	18.0	0.0	45.6	45.6	14.4	60.0	0.0
Volume/Cap:	0.57	0.00	0.23	1.04	1.04	0.35	0.00	0.57	1.04	1.04	0.43	0.00
Uniform Del:	43.0	0.0	30.3	41.0	41.0	35.9	0.0	19.9	27.2	42.8	10.8	0.0
IncremntDel:	4.5	0.0	0.3	38.8	38.8	0.7	0.0	0.3	41.8	52.2	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	47.4	0.0	30.6	79.8	79.8	36.6	0.0	20.2	69.0	95.0	10.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	0.0	30.6	79.8	79.8	36.6	0.0	20.2	69.0	95.0	10.9	0.0
LOS by Move:	D	A	C	E-	E-	D+	A	C+	E	F	B+	A
HCM2kAvgQ:	3	0	3	17	17	3	0	11	38	14	8	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1210: 280 SB / STEVENS CREEK



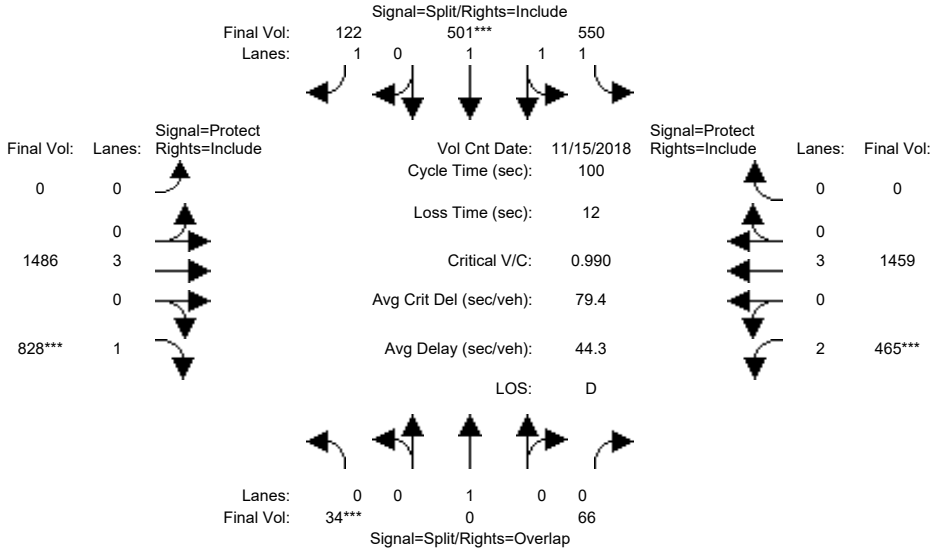
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	0	7	7	7	7	0	10	10	7	10	0
Y+R:	5.4	5.4	5.4	6.5	6.5	6.5	0.0	5.9	5.9	5.9	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	33	0	153	774	176	259	0	1149	647	180	1994	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	0	153	774	176	259	0	1149	647	180	1994	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	153	774	176	259	0	1149	647	180	1994	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	0	153	774	176	259	0	1149	647	180	1994	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	0	153	774	176	259	0	1149	647	180	1994	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	0	153	774	176	259	0	1149	647	180	1994	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.18	0.00	0.82	2.00	1.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	310	0	1440	3150	1900	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.25	0.09	0.15	0.00	0.20	0.37	0.06	0.35	0.00
Crit Moves:	****			****					****	****		
Green Time:	16.1	0.0	24.8	37.2	37.2	37.2	0.0	56.0	56.0	8.7	64.7	0.0
Volume/Cap:	0.86	0.00	0.56	0.86	0.32	0.52	0.00	0.47	0.86	0.86	0.70	0.00
Uniform Del:	55.8	0.0	47.7	43.9	36.5	38.9	0.0	26.4	33.4	60.1	25.2	0.0
IncremntDel:	33.1	0.0	6.6	8.7	0.3	3.8	0.0	0.6	12.1	33.9	1.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	88.9	0.0	54.3	52.5	36.8	42.6	0.0	27.0	45.5	94.0	26.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.9	0.0	54.3	52.5	36.8	42.6	0.0	27.0	45.5	94.0	26.7	0.0
LOS by Move:	F	A	D-	D-	D+	D	A	C	D	F	C	A
HCM2kAvgQ:	7	0	7	20	5	10	0	11	27	7	21	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1210: 280 SB / STEVENS CREEK



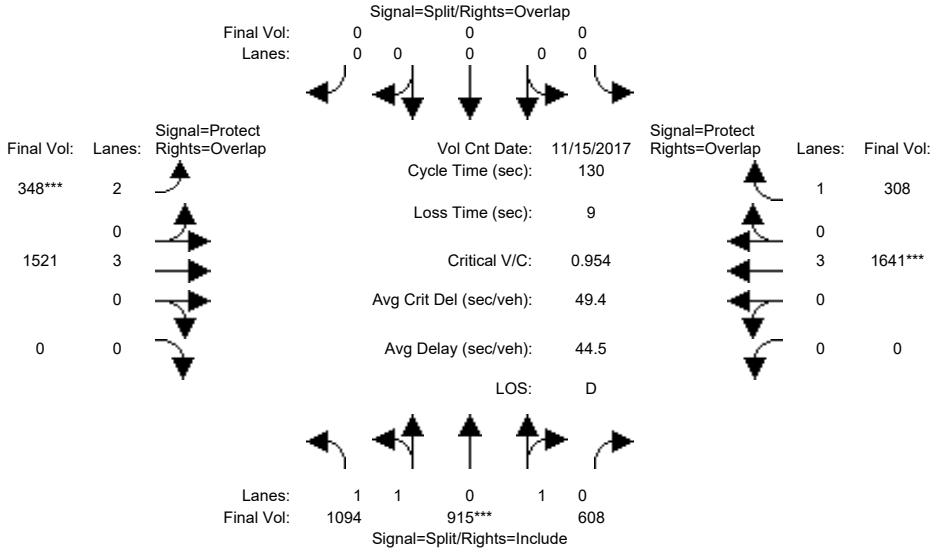
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	0	10	10	10	10	0	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	34	0	66	550	501	122	0	1486	828	465	1459	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	0	66	550	501	122	0	1486	828	465	1459	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	0	66	550	501	122	0	1486	828	465	1459	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	0	66	550	501	122	0	1486	828	465	1459	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	0	66	550	501	122	0	1486	828	465	1459	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	0	66	550	501	122	0	1486	828	465	1459	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	0.98	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.34	0.00	0.66	1.61	1.39	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	595	0	1155	2850	2596	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.19	0.19	0.07	0.00	0.26	0.47	0.15	0.26	0.00
Crit Moves:	****				****				****	****		
Green Time:	10.0	0.0	24.1	18.5	18.5	18.5	0.0	45.4	45.4	14.1	59.5	0.0
Volume/Cap:	0.57	0.00	0.24	1.04	1.04	0.38	0.00	0.57	1.04	1.04	0.43	0.00
Uniform Del:	43.0	0.0	30.5	40.8	40.8	35.7	0.0	20.2	27.3	42.9	11.0	0.0
IncremntDel:	4.5	0.0	0.3	40.3	40.3	0.7	0.0	0.3	43.8	54.4	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	47.4	0.0	30.8	81.0	81.0	36.4	0.0	20.5	71.1	97.3	11.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	0.0	30.8	81.0	81.0	36.4	0.0	20.5	71.1	97.3	11.1	0.0
LOS by Move:	D	A	C	F	F	D+	A	C+	E	F	B+	A
HCM2kAvgQ:	3	0	3	18	18	4	0	11	38	14	8	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1211: LAWRENCE / STEVENS CREEK E



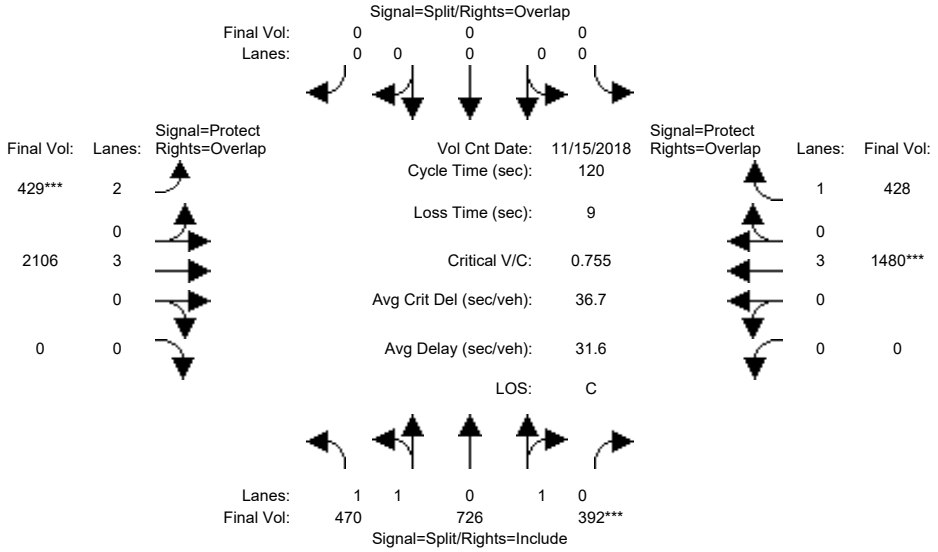
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	6.0	6.0	6.0	4.0	4.0	4.0	5.4	6.0	4.0	4.0	5.6	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	1094	915	608	0	0	0	348	1521	0	0	1641	308
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1094	915	608	0	0	0	348	1521	0	0	1641	308
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1094	915	608	0	0	0	348	1521	0	0	1641	308
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1094	915	608	0	0	0	348	1521	0	0	1641	308
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1094	915	608	0	0	0	348	1521	0	0	1641	308
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1094	915	608	0	0	0	348	1521	0	0	1641	308
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.27	1.04	0.69	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	2236	1870	1243	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.49	0.00	0.00	0.00	0.11	0.27	0.00	0.00	0.29	0.18
Crit Moves:		****					****				****	
Green Time:	66.7	66.7	66.7	0.0	0.0	0.0	15.1	54.3	0.0	0.0	39.2	39.2
Volume/Cap:	0.95	0.95	0.95	0.00	0.00	0.00	0.95	0.64	0.00	0.00	0.95	0.58
Uniform Del:	30.2	30.2	30.2	0.0	0.0	0.0	57.1	30.1	0.0	0.0	44.5	38.4
IncremntDel:	8.8	8.8	8.8	0.0	0.0	0.0	35.0	0.6	0.0	0.0	12.5	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	39.0	39.0	39.0	0.0	0.0	0.0	92.2	30.6	0.0	0.0	56.9	40.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	39.0	39.0	0.0	0.0	0.0	92.2	30.6	0.0	0.0	56.9	40.1
LOS by Move:	D+	D+	D+	A	A	A	F	C	A	A	E+	D
HCM2kAvgQ:	40	40	40	0	0	0	10	16	0	0	26	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1211: LAWRENCE / STEVENS CREEK E



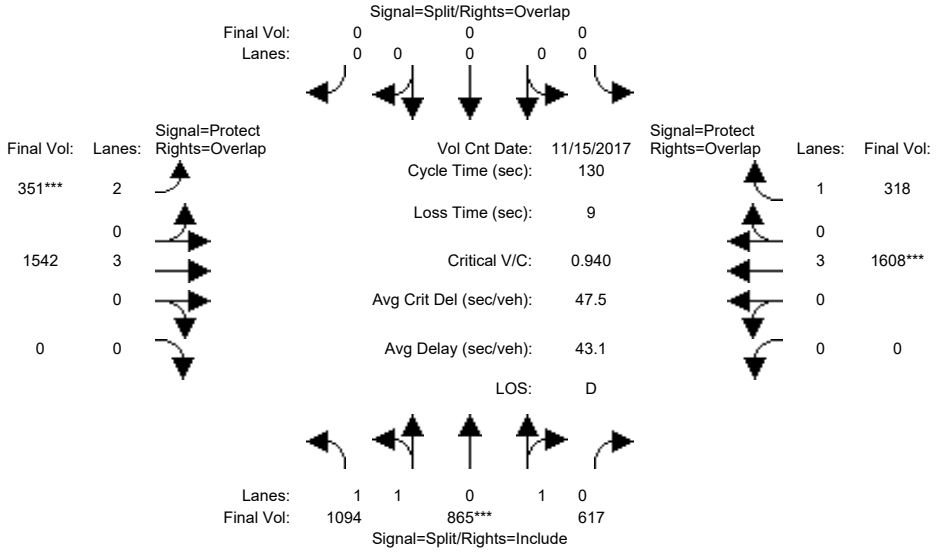
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	470	726	392	0	0	0	429	2106	0	0	1480	428
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	470	726	392	0	0	0	429	2106	0	0	1480	428
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	470	726	392	0	0	0	429	2106	0	0	1480	428
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	470	726	392	0	0	0	429	2106	0	0	1480	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	470	726	392	0	0	0	429	2106	0	0	1480	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	470	726	392	0	0	0	429	2106	0	0	1480	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.28	0.72	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	1750	2402	1297	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.27	0.30	0.30	0.00	0.00	0.00	0.14	0.37	0.00	0.00	0.26	0.24
Crit Moves:			****				****				****	
Green Time:	48.1	48.1	48.1	0.0	0.0	0.0	21.7	62.9	0.0	0.0	41.3	41.3
Volume/Cap:	0.67	0.75	0.75	0.00	0.00	0.00	0.75	0.70	0.00	0.00	0.75	0.71
Uniform Del:	29.5	30.9	30.9	0.0	0.0	0.0	46.7	21.5	0.0	0.0	34.9	34.2
IncremntDel:	0.8	1.6	1.6	0.0	0.0	0.0	5.7	0.8	0.0	0.0	1.7	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	30.2	32.5	32.5	0.0	0.0	0.0	52.4	22.3	0.0	0.0	36.6	38.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	32.5	32.5	0.0	0.0	0.0	52.4	22.3	0.0	0.0	36.6	38.1
LOS by Move:	C	C-	C-	A	A	A	D-	C+	A	A	D+	D+
HCM2kAvgQ:	16	19	19	0	0	0	9	19	0	0	17	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1211: LAWRENCE / STEVENS CREEK E



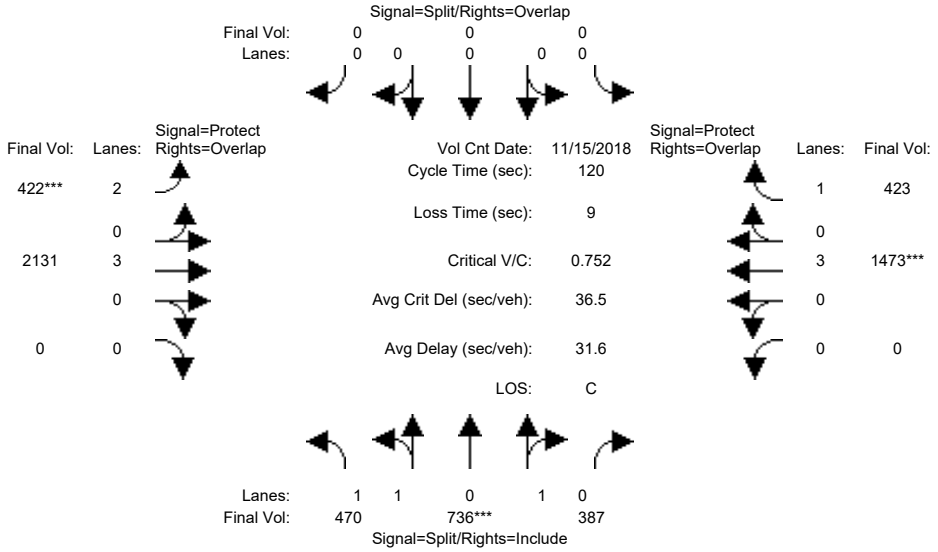
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	6.0	6.0	6.0	4.0	4.0	4.0	5.4	6.0	4.0	4.0	5.6	5.9
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	1094	865	617	0	0	0	351	1542	0	0	1608	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1094	865	617	0	0	0	351	1542	0	0	1608	318
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1094	865	617	0	0	0	351	1542	0	0	1608	318
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1094	865	617	0	0	0	351	1542	0	0	1608	318
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1094	865	617	0	0	0	351	1542	0	0	1608	318
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1094	865	617	0	0	0	351	1542	0	0	1608	318
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.29	1.00	0.71	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	2272	1796	1281	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.48	0.48	0.48	0.00	0.00	0.00	0.11	0.27	0.00	0.00	0.28	0.18
Crit Moves:		****					****				****	
Green Time:	66.6	66.6	66.6	0.0	0.0	0.0	15.4	54.4	0.0	0.0	39.0	39.0
Volume/Cap:	0.94	0.94	0.94	0.00	0.00	0.00	0.94	0.65	0.00	0.00	0.94	0.61
Uniform Del:	29.8	29.8	29.8	0.0	0.0	0.0	56.8	30.1	0.0	0.0	44.4	38.9
IncremntDel:	7.3	7.3	7.3	0.0	0.0	0.0	31.5	0.6	0.0	0.0	10.7	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	37.2	37.2	37.2	0.0	0.0	0.0	88.4	30.7	0.0	0.0	55.1	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	37.2	37.2	0.0	0.0	0.0	88.4	30.7	0.0	0.0	55.1	40.9
LOS by Move:	D+	D+	D+	A	A	A	F	C	A	A	E+	D
HCM2kAvgQ:	39	39	39	0	0	0	10	16	0	0	25	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1211: LAWRENCE / STEVENS CREEK E



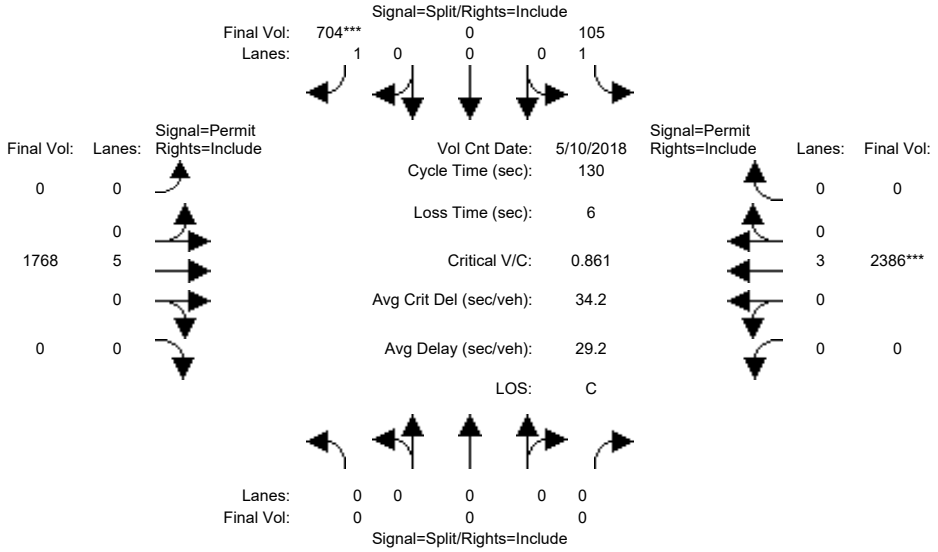
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	470	736	387	0	0	0	422	2131	0	0	1473	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	470	736	387	0	0	0	422	2131	0	0	1473	423
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	470	736	387	0	0	0	422	2131	0	0	1473	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	470	736	387	0	0	0	422	2131	0	0	1473	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	470	736	387	0	0	0	422	2131	0	0	1473	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	470	736	387	0	0	0	422	2131	0	0	1473	423
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	1750	2424	1275	0	0	0	3150	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.27	0.30	0.30	0.00	0.00	0.00	0.13	0.37	0.00	0.00	0.26	0.24
Crit Moves:		****					****				****	
Green Time:	48.4	48.4	48.4	0.0	0.0	0.0	21.4	62.6	0.0	0.0	41.2	41.2
Volume/Cap:	0.67	0.75	0.75	0.00	0.00	0.00	0.75	0.72	0.00	0.00	0.75	0.70
Uniform Del:	29.2	30.7	30.7	0.0	0.0	0.0	46.8	21.9	0.0	0.0	34.9	34.1
IncremntDel:	0.7	1.6	1.6	0.0	0.0	0.0	5.7	0.9	0.0	0.0	1.7	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	29.9	32.2	32.2	0.0	0.0	0.0	52.5	22.8	0.0	0.0	36.6	37.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.9	32.2	32.2	0.0	0.0	0.0	52.5	22.8	0.0	0.0	36.6	37.9
LOS by Move:	C	C-	C-	A	A	A	D-	C+	A	A	D+	D+
HCM2kAvgQ:	16	19	19	0	0	0	9	19	0	0	17	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



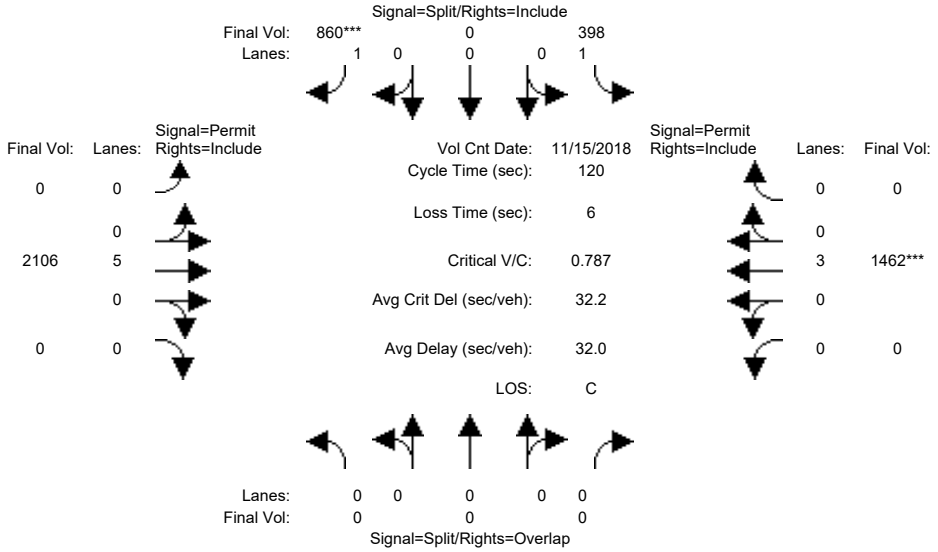
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	15	15	15	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	5.4	5.4	5.4	4.0	5.9	4.0	4.0	5.6	4.0
Volume Module: >> Count Date: 10 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	105	0	704	0	1768	0	0	2386	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	105	0	704	0	1768	0	0	2386	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	105	0	704	0	1768	0	0	2386	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	105	0	704	0	1768	0	0	2386	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	105	0	704	0	1768	0	0	2386	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	105	0	704	0	1768	0	0	2386	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.00	0.40	0.00	0.19	0.00	0.00	0.42	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	60.8	0.0	60.8	0.0	63.2	0.0	0.0	63.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.13	0.00	0.86	0.00	0.38	0.00	0.00	0.86	0.00
Uniform Del:	0.0	0.0	0.0	19.6	0.0	30.8	0.0	21.1	0.0	0.0	29.5	0.0
IncremntDel:	0.0	0.0	0.0	0.1	0.0	9.2	0.0	0.1	0.0	0.0	3.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	19.7	0.0	40.0	0.0	21.1	0.0	0.0	32.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	19.7	0.0	40.0	0.0	21.1	0.0	0.0	32.5	0.0
LOS by Move:	A	A	A	B-	A	D	A	C+	A	A	C-	A
HCM2kAvgQ:	0	0	0	2	0	29	0	9	0	0	26	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



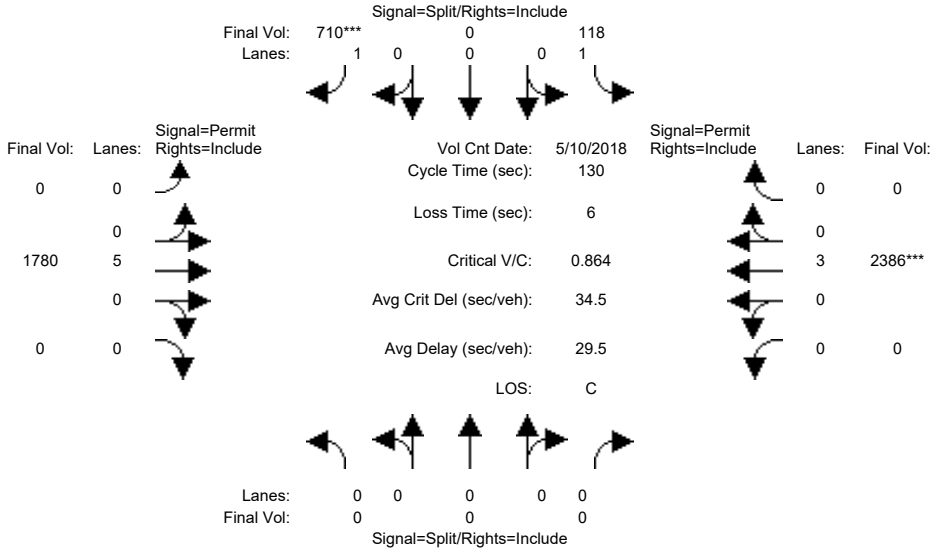
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	0	0	398	0	860	0	2106	0	0	1462	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	398	0	860	0	2106	0	0	1462	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	398	0	860	0	2106	0	0	1462	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	398	0	860	0	2106	0	0	1462	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	398	0	860	0	2106	0	0	1462	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	398	0	860	0	2106	0	0	1462	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.49	0.00	0.22	0.00	0.00	0.26	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	74.9	0.0	74.9	0.0	39.1	0.0	0.0	39.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.36	0.00	0.79	0.00	0.68	0.00	0.00	0.79	0.00
Uniform Del:	0.0	0.0	0.0	11.0	0.0	16.7	0.0	35.0	0.0	0.0	36.7	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.0	3.9	0.0	0.6	0.0	0.0	2.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	11.2	0.0	20.5	0.0	35.7	0.0	0.0	39.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.2	0.0	20.5	0.0	35.7	0.0	0.0	39.0	0.0
LOS by Move:	A	A	A	B+	A	C+	A	D+	A	A	D	A
HCM2kAvgQ:	0	0	0	8	0	26	0	14	0	0	16	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



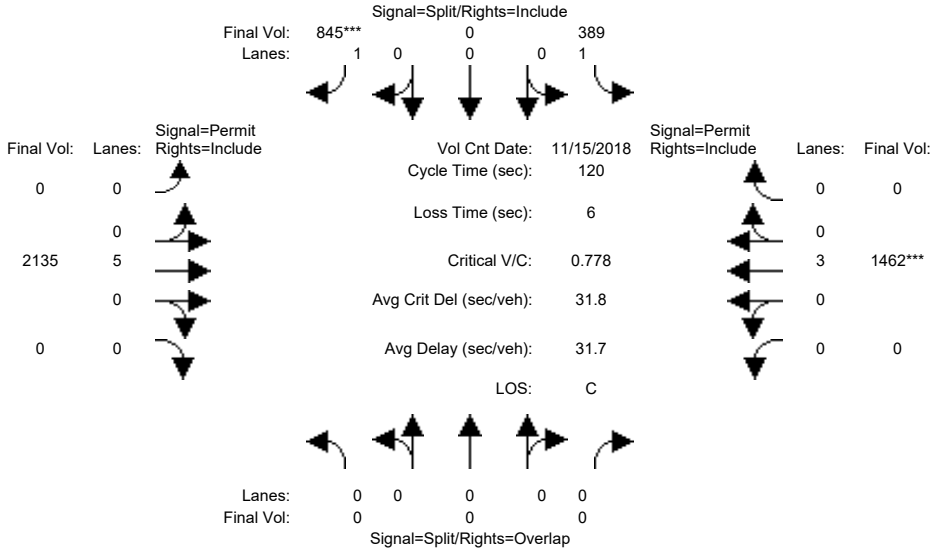
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	15	15	15	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	5.4	5.4	5.4	4.0	5.9	4.0	4.0	5.6	4.0
Volume Module: >> Count Date: 10 May 2018 << 8:00 AM - 9:00 AM												
Base Vol:	0	0	0	118	0	710	0	1780	0	0	2386	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	118	0	710	0	1780	0	0	2386	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	118	0	710	0	1780	0	0	2386	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	118	0	710	0	1780	0	0	2386	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	118	0	710	0	1780	0	0	2386	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	118	0	710	0	1780	0	0	2386	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.41	0.00	0.19	0.00	0.00	0.42	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	61.0	0.0	61.0	0.0	63.0	0.0	0.0	63.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.14	0.00	0.86	0.00	0.39	0.00	0.00	0.86	0.00
Uniform Del:	0.0	0.0	0.0	19.6	0.0	30.8	0.0	21.3	0.0	0.0	29.7	0.0
IncremntDel:	0.0	0.0	0.0	0.1	0.0	9.5	0.0	0.1	0.0	0.0	3.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	19.7	0.0	40.2	0.0	21.3	0.0	0.0	32.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	19.7	0.0	40.2	0.0	21.3	0.0	0.0	32.8	0.0
LOS by Move:	A	A	A	B-	A	D	A	C+	A	A	C-	A
HCM2kAvgQ:	0	0	0	3	0	30	0	9	0	0	27	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1212: LAWRENCE SB RAMP / STEVENS CREEK



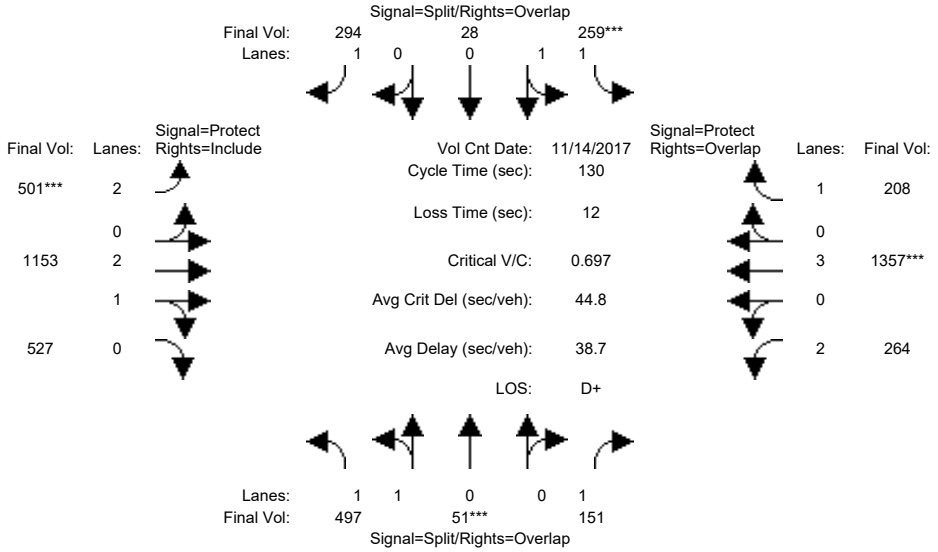
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	0	0	389	0	845	0	2135	0	0	1462	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	389	0	845	0	2135	0	0	1462	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	389	0	845	0	2135	0	0	1462	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	389	0	845	0	2135	0	0	1462	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	389	0	845	0	2135	0	0	1462	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	389	0	845	0	2135	0	0	1462	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	5.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	9500	0	0	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.48	0.00	0.22	0.00	0.00	0.26	0.00
Crit Moves:						****					****	
Green Time:	0.0	0.0	0.0	74.5	0.0	74.5	0.0	39.5	0.0	0.0	39.5	0.0
Volume/Cap:	0.00	0.00	0.00	0.36	0.00	0.78	0.00	0.68	0.00	0.00	0.78	0.00
Uniform Del:	0.0	0.0	0.0	11.1	0.0	16.7	0.0	34.8	0.0	0.0	36.3	0.0
IncremntDel:	0.0	0.0	0.0	0.2	0.0	3.6	0.0	0.6	0.0	0.0	2.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	11.3	0.0	20.4	0.0	35.4	0.0	0.0	38.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.3	0.0	20.4	0.0	35.4	0.0	0.0	38.4	0.0
LOS by Move:	A	A	A	B+	A	C+	A	D+	A	A	D+	A
HCM2kAvgQ:	0	0	0	7	0	26	0	14	0	0	16	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



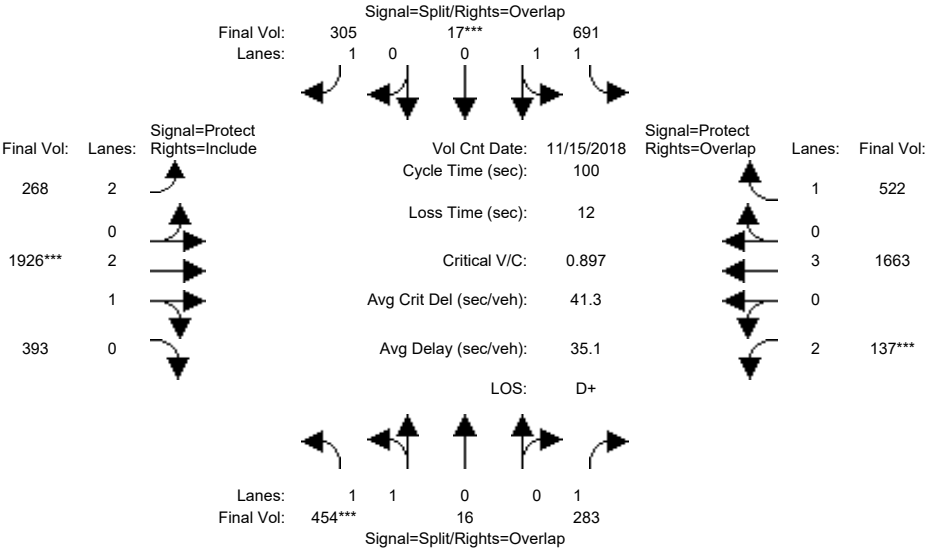
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	497	51	151	259	28	294	501	1153	527	264	1357	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	497	51	151	259	28	294	501	1153	527	264	1357	208
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	497	51	151	259	28	294	501	1153	527	264	1357	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	497	51	151	259	28	294	501	1153	527	264	1357	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	497	51	151	259	28	294	501	1153	527	264	1357	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	497	51	151	259	28	294	501	1153	527	264	1357	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	1.00	0.95	0.83	1.00	0.92
Lanes:	1.82	0.18	1.00	1.81	0.19	1.00	2.00	2.02	0.98	2.00	3.00	1.00
Final Sat.:	3220	330	1750	3204	346	1750	3150	3841	1756	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.09	0.08	0.08	0.17	0.16	0.30	0.30	0.08	0.24	0.12
Crit Moves:		****		****			****				****	
Green Time:	28.8	28.8	45.0	15.1	15.1	44.8	29.7	57.9	57.9	16.2	44.4	59.5
Volume/Cap:	0.70	0.70	0.25	0.70	0.70	0.49	0.70	0.67	0.67	0.67	0.70	0.26
Uniform Del:	46.6	46.6	30.4	55.3	55.3	33.6	46.0	28.5	28.5	54.4	37.0	21.7
IncremntDel:	2.8	2.8	0.2	5.2	5.2	0.6	3.0	0.7	0.7	4.6	1.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.3	49.3	30.6	60.4	60.4	34.2	49.0	29.3	29.3	59.0	38.1	21.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	49.3	30.6	60.4	60.4	34.2	49.0	29.3	29.3	59.0	38.1	21.9
LOS by Move:	D	D	C	E	E	C-	D	C	C	E+	D+	C+
HCM2kAvgQ:	10	10	4	6	6	10	11	18	18	6	15	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



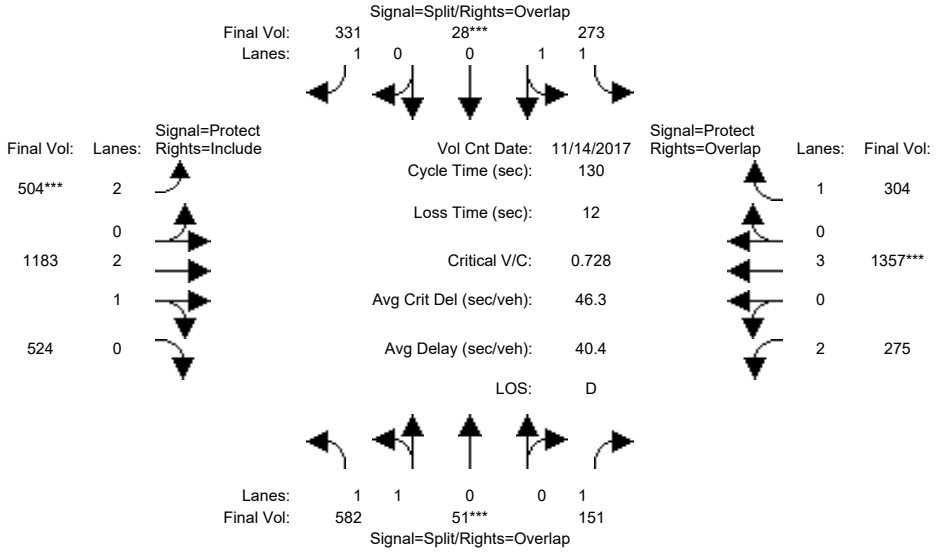
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	454	16	283	691	17	305	268	1926	393	137	1663	522
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	454	16	283	691	17	305	268	1926	393	137	1663	522
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	454	16	283	691	17	305	268	1926	393	137	1663	522
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	454	16	283	691	17	305	268	1926	393	137	1663	522
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	454	16	283	691	17	305	268	1926	393	137	1663	522
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	454	16	283	691	17	305	268	1926	393	137	1663	522
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	0.99	0.95	0.83	1.00	0.92
Lanes:	1.93	0.07	1.00	1.95	0.05	1.00	2.00	2.47	0.53	2.00	3.00	1.00
Final Sat.:	3429	121	1750	3465	85	1750	3150	4650	949	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.16	0.20	0.20	0.17	0.09	0.41	0.41	0.04	0.29	0.30
Crit Moves:	****				****			****			****	
Green Time:	14.4	14.4	21.4	21.7	21.7	33.4	11.7	45.0	45.0	7.0	40.2	61.9
Volume/Cap:	0.92	0.92	0.76	0.92	0.92	0.52	0.73	0.92	0.92	0.62	0.73	0.48
Uniform Del:	42.3	42.3	36.9	38.3	38.3	26.9	42.6	25.8	25.8	45.2	25.2	10.3
IncremntDel:	22.1	22.1	8.6	16.3	16.3	0.9	7.0	6.2	6.2	5.4	1.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.4	64.4	45.5	54.7	54.7	27.7	49.6	32.0	32.0	50.6	26.4	10.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.4	64.4	45.5	54.7	54.7	27.7	49.6	32.0	32.0	50.6	26.4	10.7
LOS by Move:	E	E	D	D-	D-	C	D	C-	C-	D	C	B+
HCM2kAvgQ:	7	7	8	11	11	7	5	23	23	2	14	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



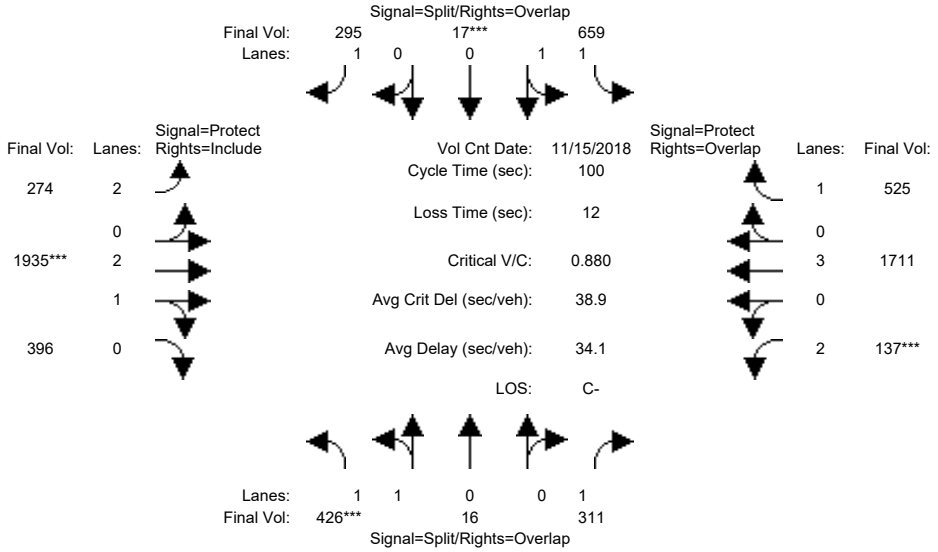
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	582	51	151	273	28	331	504	1183	524	275	1357	304
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	582	51	151	273	28	331	504	1183	524	275	1357	304
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	582	51	151	273	28	331	504	1183	524	275	1357	304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	582	51	151	273	28	331	504	1183	524	275	1357	304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	582	51	151	273	28	331	504	1183	524	275	1357	304
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	582	51	151	273	28	331	504	1183	524	275	1357	304
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	1.00	0.95	0.83	1.00	0.92
Lanes:	1.84	0.16	1.00	1.82	0.18	1.00	2.00	2.05	0.95	2.00	3.00	1.00
Final Sat.:	3264	286	1750	3220	330	1750	3150	3879	1718	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.09	0.08	0.08	0.19	0.16	0.30	0.30	0.09	0.24	0.17
Crit Moves:		****			****		****				****	
Green Time:	31.8	31.8	47.6	15.1	15.1	43.7	28.6	55.2	55.2	15.8	42.5	57.6
Volume/Cap:	0.73	0.73	0.24	0.73	0.73	0.56	0.73	0.72	0.72	0.72	0.73	0.39
Uniform Del:	45.1	45.1	28.6	55.4	55.4	35.3	47.1	30.9	30.9	54.9	38.7	24.4
IncremntDel:	3.1	3.1	0.2	6.4	6.4	1.3	3.9	1.1	1.1	6.4	1.5	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.3	48.3	28.7	61.9	61.9	36.6	51.0	32.0	32.0	61.4	40.1	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.3	48.3	28.7	61.9	61.9	36.6	51.0	32.0	32.0	61.4	40.1	24.7
LOS by Move:	D	D	C	E	E	D+	D-	C-	C-	E	D	C
HCM2kAvgQ:	11	11	4	6	6	11	11	19	19	6	15	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1214: LAWRENCE RAMPS / EL CAMINO REAL



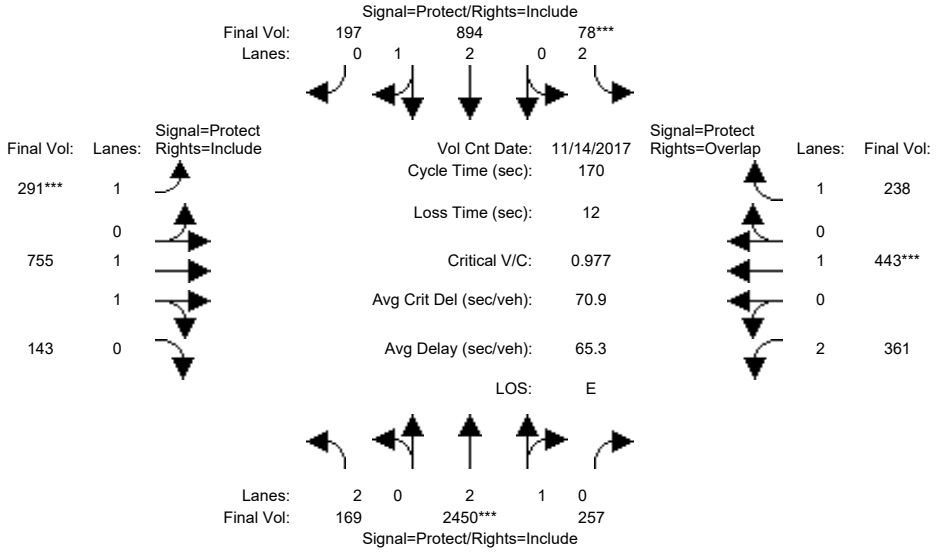
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	426	16	311	659	17	295	274	1935	396	137	1711	525
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	426	16	311	659	17	295	274	1935	396	137	1711	525
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	426	16	311	659	17	295	274	1935	396	137	1711	525
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	426	16	311	659	17	295	274	1935	396	137	1711	525
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	426	16	311	659	17	295	274	1935	396	137	1711	525
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	426	16	311	659	17	295	274	1935	396	137	1711	525
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.93	0.95	0.92	0.83	0.99	0.95	0.83	1.00	0.92
Lanes:	1.93	0.07	1.00	1.95	0.05	1.00	2.00	2.47	0.53	2.00	3.00	1.00
Final Sat.:	3421	129	1750	3461	89	1750	3150	4647	951	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.18	0.19	0.19	0.17	0.09	0.42	0.42	0.04	0.30	0.30
Crit Moves:	****				****			****			****	
Green Time:	13.8	13.8	20.8	21.1	21.1	33.0	11.9	46.1	46.1	7.0	41.2	62.3
Volume/Cap:	0.90	0.90	0.85	0.90	0.90	0.51	0.73	0.90	0.90	0.62	0.73	0.48
Uniform Del:	42.4	42.4	38.2	38.5	38.5	27.0	42.5	24.9	24.9	45.2	24.7	10.2
IncremntDel:	19.8	19.8	17.6	14.2	14.2	0.8	7.1	4.9	4.9	5.4	1.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	62.3	62.3	55.8	52.7	52.7	27.7	49.5	29.8	29.8	50.6	25.9	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.3	62.3	55.8	52.7	52.7	27.7	49.5	29.8	29.8	50.6	25.9	10.5
LOS by Move:	E	E	E+	D-	D-	C	D	C	C	D	C	B+
HCM2kAvgQ:	7	7	9	10	10	7	5	23	23	2	14	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



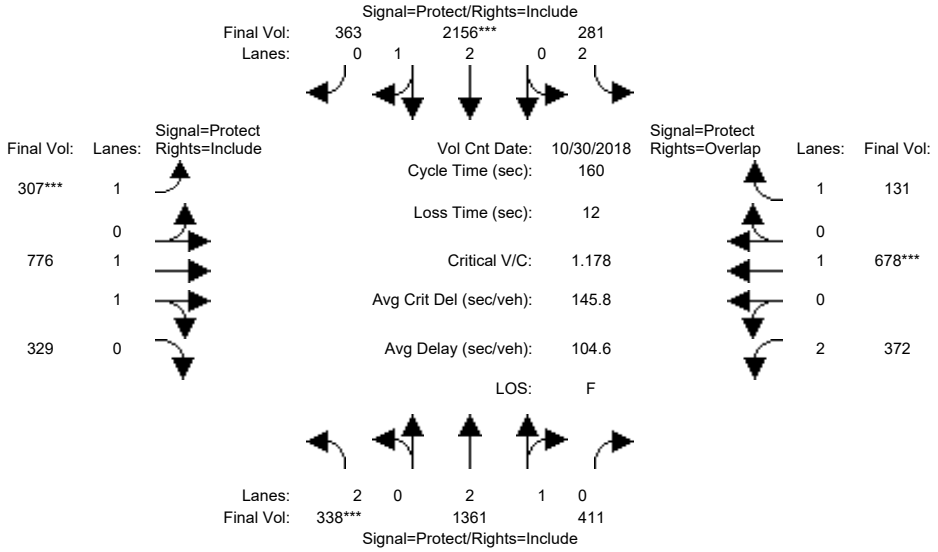
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	169	2450	257	78	894	197	291	755	143	361	443	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	2450	257	78	894	197	291	755	143	361	443	238
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	169	2450	257	78	894	197	291	755	143	361	443	238
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	2450	257	78	894	197	291	755	143	361	443	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	2450	257	78	894	197	291	755	143	361	443	238
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	2450	257	78	894	197	291	755	143	361	443	238
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.70	0.30	2.00	2.44	0.56	1.00	1.67	0.33	2.00	1.00	1.00
Final Sat.:	3150	5068	532	3150	4587	1011	1750	3110	589	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.48	0.48	0.02	0.19	0.19	0.17	0.24	0.24	0.11	0.23	0.14
Crit Moves:		****		****			****				****	
Green Time:	19.4	82.7	82.7	7.0	70.3	70.3	28.4	46.4	46.4	21.9	39.9	46.9
Volume/Cap:	0.47	0.99	0.99	0.60	0.47	0.47	0.99	0.89	0.89	0.89	0.99	0.49
Uniform Del:	70.5	43.4	43.4	80.1	36.3	36.3	70.7	59.3	59.3	72.9	64.9	51.6
IncremntDel:	1.0	15.8	15.8	7.7	0.2	0.2	50.9	9.8	9.8	20.7	41.0	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.5	59.2	59.2	87.8	36.4	36.4	121.6	69.2	69.2	93.5	106	52.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.5	59.2	59.2	87.8	36.4	36.4	121.6	69.2	69.2	93.5	106	52.4
LOS by Move:	E	E+	E+	F	D+	D+	F	E	E	F	F	D-
HCM2kAvgQ:	5	48	48	2	13	13	21	26	26	11	24	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



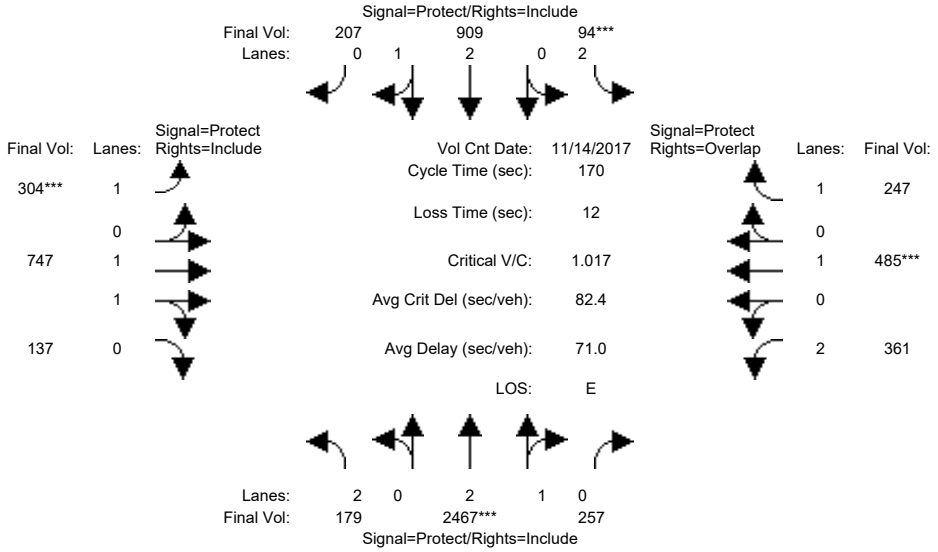
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	338	1361	411	281	2156	363	307	776	329	372	678	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	1361	411	281	2156	363	307	776	329	372	678	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	338	1361	411	281	2156	363	307	776	329	372	678	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	338	1361	411	281	2156	363	307	776	329	372	678	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	1361	411	281	2156	363	307	776	329	372	678	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	338	1361	411	281	2156	363	307	776	329	372	678	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.28	0.72	2.00	2.55	0.45	1.00	1.39	0.61	2.00	1.00	1.00
Final Sat.:	3150	4299	1298	3150	4792	807	1750	2598	1101	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.32	0.09	0.45	0.45	0.18	0.30	0.30	0.12	0.36	0.07
Crit Moves:	****				****		****				****	
Green Time:	14.6	59.1	59.1	16.6	61.1	61.1	23.8	51.8	51.8	20.5	48.5	65.1
Volume/Cap:	1.18	0.86	0.86	0.86	1.18	1.18	1.18	0.92	0.92	0.92	1.18	0.18
Uniform Del:	72.7	46.6	46.6	70.5	49.4	49.4	68.1	52.2	52.2	69.0	55.8	30.4
IncremntDel:	110.2	3.8	3.8	19.6	85.3	85.3	112.5	11.7	11.7	26.4	97.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	182.9	50.4	50.4	90.1	135	134.7	180.6	63.9	63.9	95.4	153	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	182.9	50.4	50.4	90.1	135	134.7	180.6	63.9	63.9	95.4	153	30.5
LOS by Move:	F	D	D	F	F	F	F	E	E	F	F	C
HCM2kAvgQ:	14	26	26	9	57	57	25	30	30	10	43	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



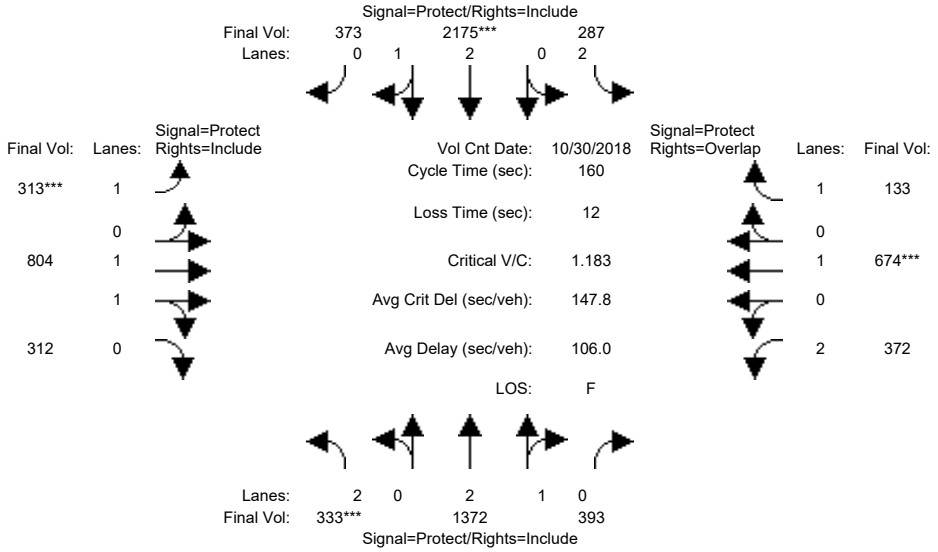
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	179	2467	257	94	909	207	304	747	137	361	485	247
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	2467	257	94	909	207	304	747	137	361	485	247
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	179	2467	257	94	909	207	304	747	137	361	485	247
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	179	2467	257	94	909	207	304	747	137	361	485	247
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	2467	257	94	909	207	304	747	137	361	485	247
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	179	2467	257	94	909	207	304	747	137	361	485	247
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.71	0.29	2.00	2.42	0.58	1.00	1.68	0.32	2.00	1.00	1.00
Final Sat.:	3150	5071	528	3150	4560	1038	1750	3126	573	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.49	0.49	0.03	0.20	0.20	0.17	0.24	0.24	0.11	0.26	0.14
Crit Moves:		****			****			****			****	
Green Time:	19.4	80.2	80.2	7.0	67.9	67.9	28.7	47.8	47.8	22.9	42.1	49.1
Volume/Cap:	0.50	1.03	1.03	0.72	0.50	0.50	1.03	0.85	0.85	0.85	1.03	0.49
Uniform Del:	70.8	44.9	44.9	80.5	38.3	38.3	70.7	57.7	57.7	71.8	63.9	50.1
IncremntDel:	1.1	26.0	26.0	18.3	0.2	0.2	60.5	6.7	6.7	14.9	49.6	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.9	70.8	70.8	98.8	38.5	38.5	131.2	64.4	64.4	86.7	114	50.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.9	70.8	70.8	98.8	38.5	38.5	131.2	64.4	64.4	86.7	114	50.8
LOS by Move:	E	E	E	F	D+	D+	F	E	E	F	F	D
HCM2kAvgQ:	5	51	51	3	14	14	23	24	24	11	27	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1402: Sunnyvale-Saratoga Rd / Remington Dr



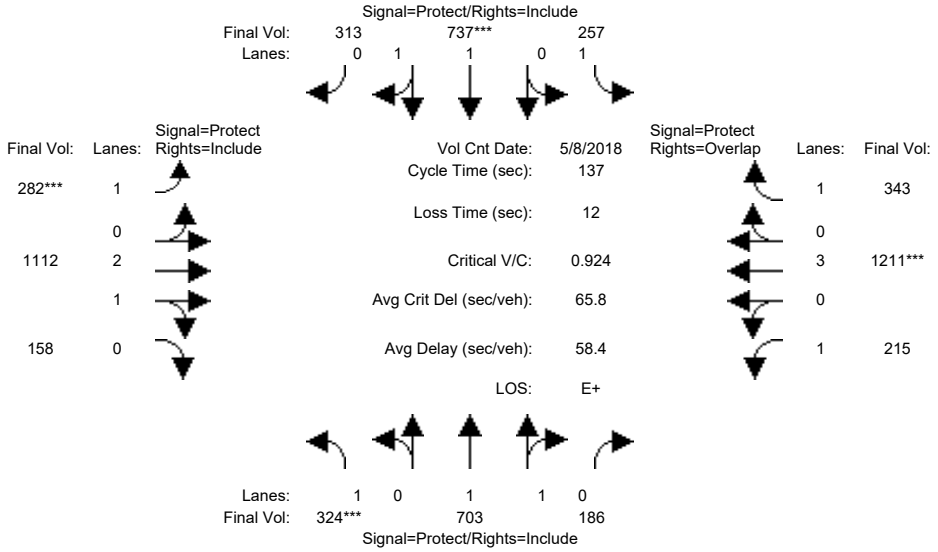
Street Name:	Sunnyvale-Saratoga Road						Remington Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	333	1372	393	287	2175	373	313	804	312	372	674	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	333	1372	393	287	2175	373	313	804	312	372	674	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	333	1372	393	287	2175	373	313	804	312	372	674	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	333	1372	393	287	2175	373	313	804	312	372	674	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	1372	393	287	2175	373	313	804	312	372	674	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	333	1372	393	287	2175	373	313	804	312	372	674	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.31	0.69	2.00	2.54	0.46	1.00	1.43	0.57	2.00	1.00	1.00
Final Sat.:	3150	4351	1246	3150	4779	820	1750	2665	1034	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.32	0.09	0.46	0.46	0.18	0.30	0.30	0.12	0.35	0.08
Crit Moves:	****				****		****				****	
Green Time:	14.3	58.8	58.8	17.0	61.5	61.5	24.2	51.9	51.9	20.3	48.0	65.0
Volume/Cap:	1.18	0.86	0.86	0.86	1.18	1.18	1.18	0.93	0.93	0.93	1.18	0.19
Uniform Del:	72.9	46.7	46.7	70.3	49.2	49.2	67.9	52.3	52.3	69.2	56.0	30.5
IncremntDel:	112.6	3.8	3.8	19.2	87.5	87.5	114.2	12.7	12.7	28.3	99.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	185.5	50.5	50.5	89.5	137	136.7	182.1	65.1	65.1	97.4	155	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	185.5	50.5	50.5	89.5	137	136.7	182.1	65.1	65.1	97.4	155	30.7
LOS by Move:	F	D	D	F	F	F	F	E	E	F	F	C
HCM2kAvgQ:	14	26	26	9	58	58	26	31	31	10	43	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



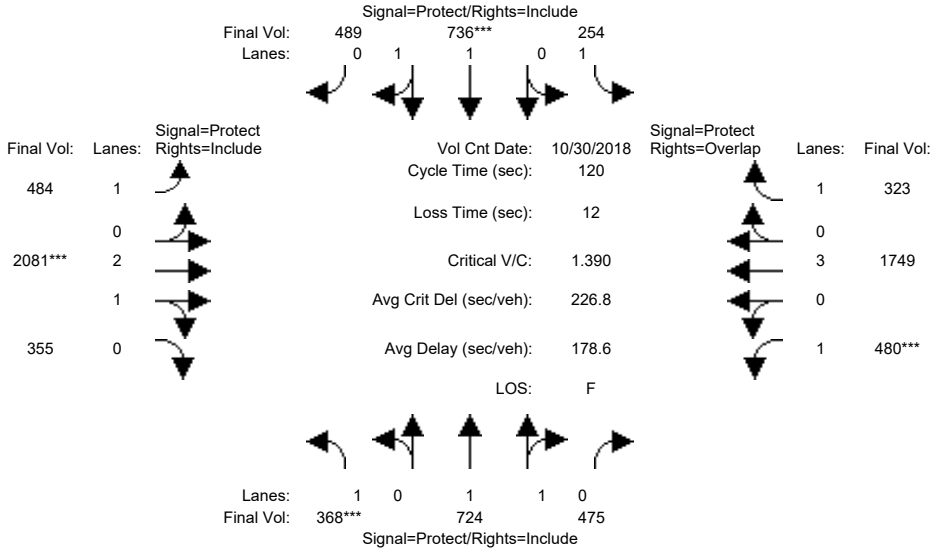
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	324	703	186	257	737	313	282	1112	158	215	1211	343
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	703	186	257	737	313	282	1112	158	215	1211	343
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	703	186	257	737	313	282	1112	158	215	1211	343
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	703	186	257	737	313	282	1112	158	215	1211	343
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	703	186	257	737	313	282	1112	158	215	1211	343
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	324	703	186	257	737	313	282	1112	158	215	1211	343
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.57	0.43	1.00	1.39	0.61	1.00	2.61	0.39	1.00	3.00	1.00
Final Sat.:	1750	2925	774	1750	2596	1103	1750	4902	697	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.24	0.15	0.28	0.28	0.16	0.23	0.23	0.12	0.21	0.20
Crit Moves:	****				****		****				****	
Green Time:	27.5	43.2	43.2	26.4	42.1	42.1	23.9	36.0	36.0	19.5	31.5	57.9
Volume/Cap:	0.92	0.76	0.76	0.76	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.46
Uniform Del:	53.7	42.3	42.3	52.3	45.9	45.9	55.6	48.2	48.2	57.5	51.6	28.4
IncremntDel:	29.3	3.0	3.0	9.8	12.3	12.3	32.2	5.6	5.6	25.5	11.0	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.1	45.3	45.3	62.2	58.2	58.2	87.9	53.8	53.8	83.0	62.6	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.1	45.3	45.3	62.2	58.2	58.2	87.9	53.8	53.8	83.0	62.6	28.9
LOS by Move:	F	D	D	E	E+	E+	F	D-	D-	F	E	C
HCM2kAvgQ:	14	16	16	11	23	23	14	18	18	10	18	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



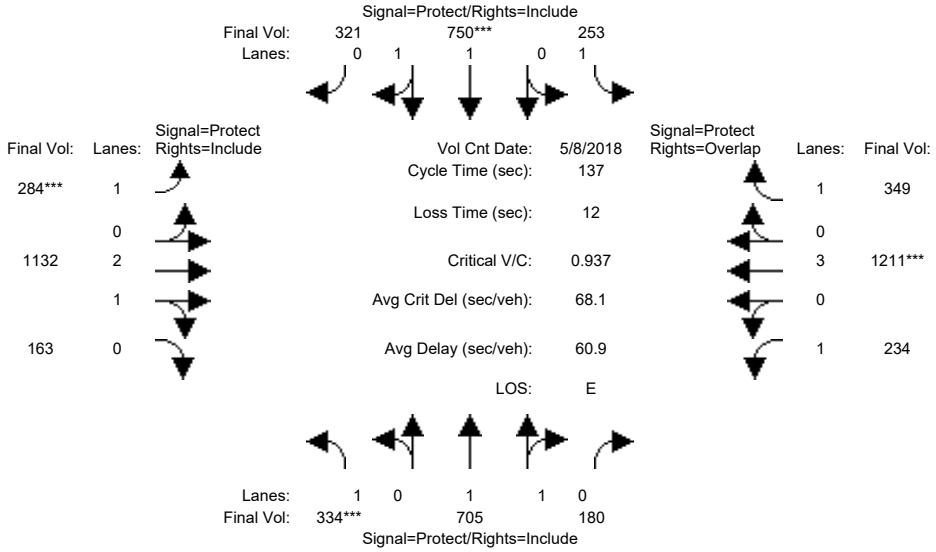
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	368	724	475	254	736	489	484	2081	355	480	1749	323
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	368	724	475	254	736	489	484	2081	355	480	1749	323
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	368	724	475	254	736	489	484	2081	355	480	1749	323
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	368	724	475	254	736	489	484	2081	355	480	1749	323
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	368	724	475	254	736	489	484	2081	355	480	1749	323
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	368	724	475	254	736	489	484	2081	355	480	1749	323
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.19	0.81	1.00	1.18	0.82	1.00	2.55	0.45	1.00	3.00	1.00
Final Sat.:	1750	2233	1465	1750	2222	1476	1750	4783	816	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.32	0.32	0.15	0.33	0.33	0.28	0.44	0.44	0.27	0.31	0.18
Crit Moves:	****				****			****			****	
Green Time:	18.2	32.3	32.3	14.5	28.6	28.6	29.0	37.6	37.6	23.7	32.2	46.7
Volume/Cap:	1.39	1.20	1.20	1.20	1.39	1.39	1.14	1.39	1.39	1.39	1.14	0.47
Uniform Del:	50.9	43.9	43.9	52.8	45.7	45.7	45.5	41.2	41.2	48.2	43.9	27.5
IncremntDel:	197.0	102	101.7	128.2	182	182.5	89.0	179	179.0	192.4	72.7	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	248.0	146	145.6	181.0	228	228.2	134.5	220	220.3	240.6	117	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	248.0	146	145.6	181.0	228	228.2	134.5	220	220.3	240.6	117	28.0
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	C
HCM2kAvgQ:	28	35	35	16	44	44	26	57	57	36	29	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



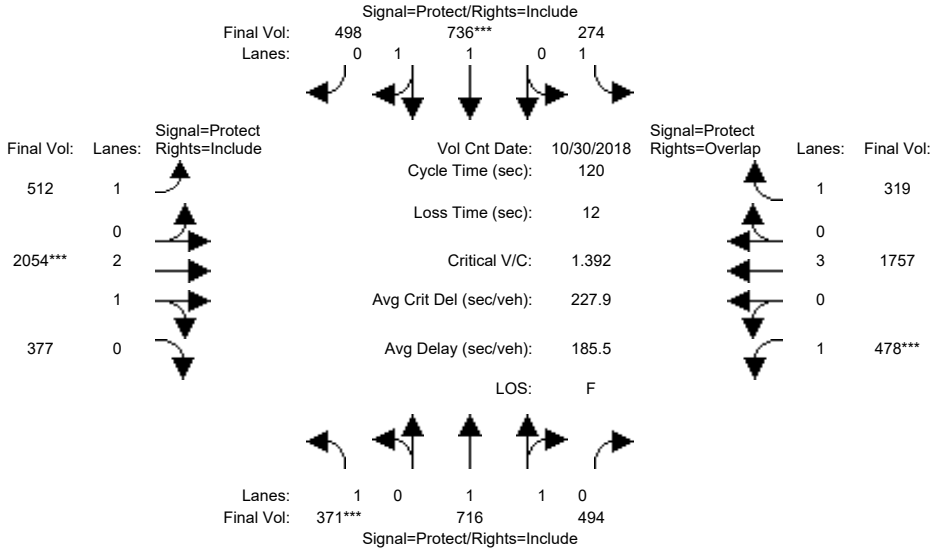
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2018 << 8:45 AM - 9:45 AM												
Base Vol:	334	705	180	253	750	321	284	1132	163	234	1211	349
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	705	180	253	750	321	284	1132	163	234	1211	349
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	334	705	180	253	750	321	284	1132	163	234	1211	349
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	334	705	180	253	750	321	284	1132	163	234	1211	349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	705	180	253	750	321	284	1132	163	234	1211	349
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	334	705	180	253	750	321	284	1132	163	234	1211	349
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.58	0.42	1.00	1.38	0.62	1.00	2.61	0.39	1.00	3.00	1.00
Final Sat.:	1750	2947	752	1750	2590	1109	1750	4894	705	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.24	0.14	0.29	0.29	0.16	0.23	0.23	0.13	0.21	0.20
Crit Moves:	****				****		****				****	
Green Time:	27.9	43.8	43.8	26.5	42.3	42.3	23.7	34.7	34.7	20.1	31.1	57.5
Volume/Cap:	0.94	0.75	0.75	0.75	0.94	0.94	0.94	0.91	0.91	0.91	0.94	0.48
Uniform Del:	53.7	41.7	41.7	52.1	46.0	46.0	55.9	49.7	49.7	57.6	52.0	28.8
IncremntDel:	31.9	2.7	2.7	9.0	14.1	14.1	35.4	9.3	9.3	33.9	12.9	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.6	44.4	44.4	61.1	60.2	60.2	91.3	58.9	58.9	91.6	64.9	29.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.6	44.4	44.4	61.1	60.2	60.2	91.3	58.9	58.9	91.6	64.9	29.3
LOS by Move:	F	D	D	E	E	E	F	E+	E+	F	E	C
HCM2kAvgQ:	14	16	16	11	24	24	14	19	19	12	18	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1404: El Camino Real (SR 82) / Fair Oaks Ave



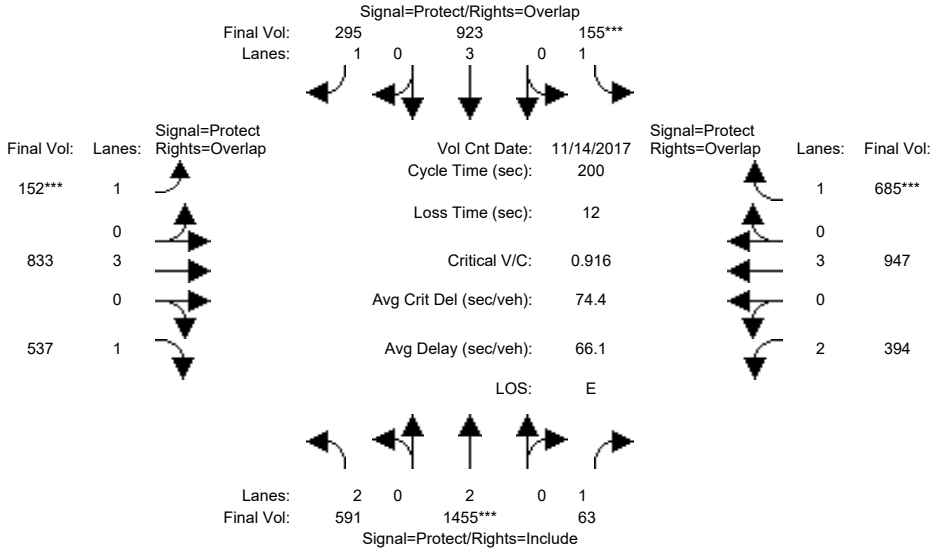
Street Name:	Fair Oaks Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:15 - 6:15 PM												
Base Vol:	371	716	494	274	736	498	512	2054	377	478	1757	319
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	371	716	494	274	736	498	512	2054	377	478	1757	319
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	371	716	494	274	736	498	512	2054	377	478	1757	319
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	371	716	494	274	736	498	512	2054	377	478	1757	319
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	371	716	494	274	736	498	512	2054	377	478	1757	319
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	371	716	494	274	736	498	512	2054	377	478	1757	319
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.99	0.95	0.92	0.99	0.95	0.92	1.00	0.92
Lanes:	1.00	1.16	0.84	1.00	1.17	0.83	1.00	2.52	0.48	1.00	3.00	1.00
Final Sat.:	1750	2188	1510	1750	2206	1492	1750	4730	868	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.33	0.33	0.16	0.33	0.33	0.29	0.43	0.43	0.27	0.31	0.18
Crit Moves:	****				****			****			****	
Green Time:	18.3	31.8	31.8	15.2	28.8	28.8	29.7	37.4	37.4	23.5	31.3	46.5
Volume/Cap:	1.39	1.23	1.23	1.23	1.39	1.39	1.18	1.39	1.39	1.39	1.18	0.47
Uniform Del:	50.9	44.1	44.1	52.4	45.6	45.6	45.2	41.3	41.3	48.2	44.4	27.5
IncremntDel:	197.9	114	114.3	138.1	183	183.5	103.5	180	180.1	193.5	89.4	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	248.8	158	158.4	190.4	229	229.1	148.7	221	221.4	241.7	134	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	248.8	158	158.4	190.4	229	229.1	148.7	221	221.4	241.7	134	28.0
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	C
HCM2kAvgQ:	28	37	37	18	44	44	30	57	57	36	31	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



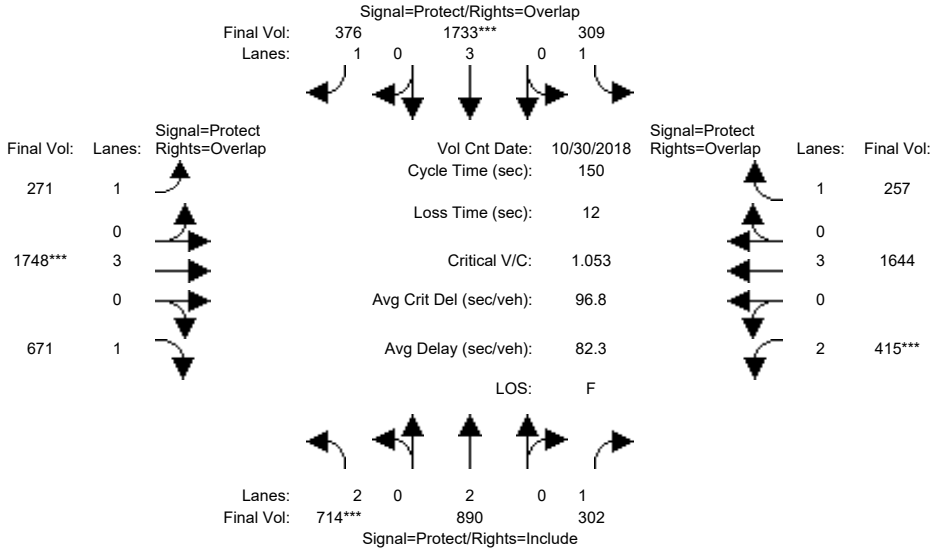
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	591	1455	63	155	923	295	152	833	537	394	947	685
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	591	1455	63	155	923	295	152	833	537	394	947	685
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	591	1455	63	155	923	295	152	833	537	394	947	685
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	591	1455	63	155	923	295	152	833	537	394	947	685
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	591	1455	63	155	923	295	152	833	537	394	947	685
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	591	1455	63	155	923	295	152	833	537	394	947	685
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.38	0.04	0.09	0.16	0.17	0.09	0.15	0.31	0.13	0.17	0.39
Crit Moves:		****		****			****					****
Green Time:	55.2	83.6	83.6	19.3	47.7	66.6	19.0	45.8	101.1	39.2	66.1	85.5
Volume/Cap:	0.68	0.92	0.09	0.92	0.68	0.51	0.92	0.64	0.61	0.64	0.50	0.92
Uniform Del:	64.5	54.9	35.1	89.5	69.2	53.5	89.7	69.6	35.3	73.9	53.7	53.9
IncremntDel:	2.2	8.7	0.1	45.6	1.4	0.7	46.2	1.1	1.2	2.2	0.2	16.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.7	63.6	35.2	135.1	70.6	54.2	135.9	70.6	36.5	76.1	54.0	69.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.7	63.6	35.2	135.1	70.6	54.2	135.9	70.6	36.5	76.1	54.0	69.9
LOS by Move:	E	E	D+	F	E	D-	F	E	D+	E-	D-	E
HCM2kAvgQ:	19	44	2	11	17	15	10	14	24	14	15	45

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



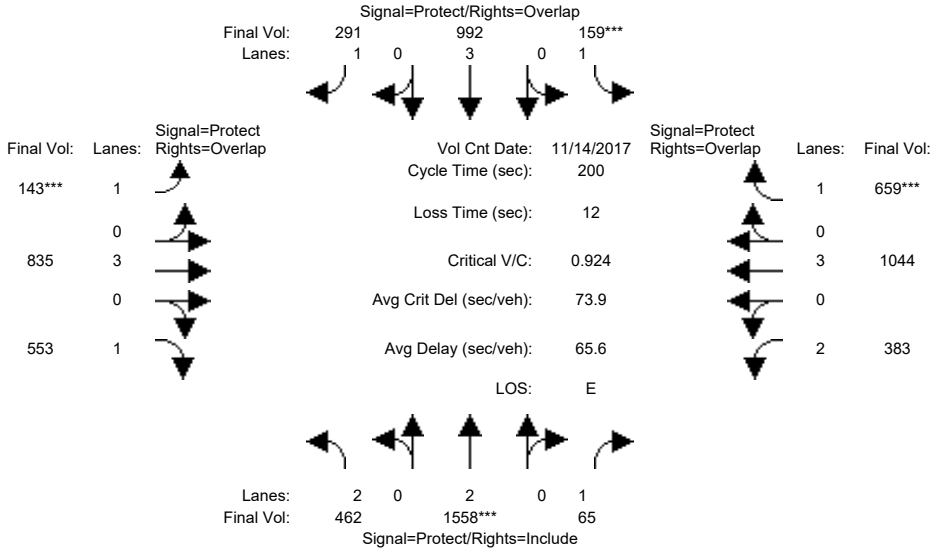
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	714	890	302	309	1733	376	271	1748	671	415	1644	257
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	714	890	302	309	1733	376	271	1748	671	415	1644	257
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	714	890	302	309	1733	376	271	1748	671	415	1644	257
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	714	890	302	309	1733	376	271	1748	671	415	1644	257
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	714	890	302	309	1733	376	271	1748	671	415	1644	257
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	714	890	302	309	1733	376	271	1748	671	415	1644	257
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.17	0.18	0.30	0.21	0.15	0.31	0.38	0.13	0.29	0.15
Crit Moves:	****				****			****			****	
Green Time:	32.3	43.1	43.1	32.5	43.3	65.1	21.8	43.7	75.9	18.8	40.6	73.1
Volume/Cap:	1.05	0.82	0.60	0.82	1.05	0.50	1.07	1.05	0.76	1.05	1.07	0.30
Uniform Del:	58.9	49.8	46.0	55.9	53.4	30.6	64.1	53.2	29.6	65.6	54.7	23.1
IncremntDel:	49.5	4.8	2.0	12.8	37.8	0.5	74.7	37.7	3.8	60.1	42.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	108.3	54.6	48.1	68.7	91.1	31.1	138.8	90.8	33.4	125.7	97.1	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	108.3	54.6	48.1	68.7	91.1	31.1	138.8	90.8	33.4	125.7	97.1	23.3
LOS by Move:	F	D-	D	E	F	C	F	F	C-	F	F	C
HCM2kAvgQ:	25	20	13	14	29	12	15	29	25	17	33	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



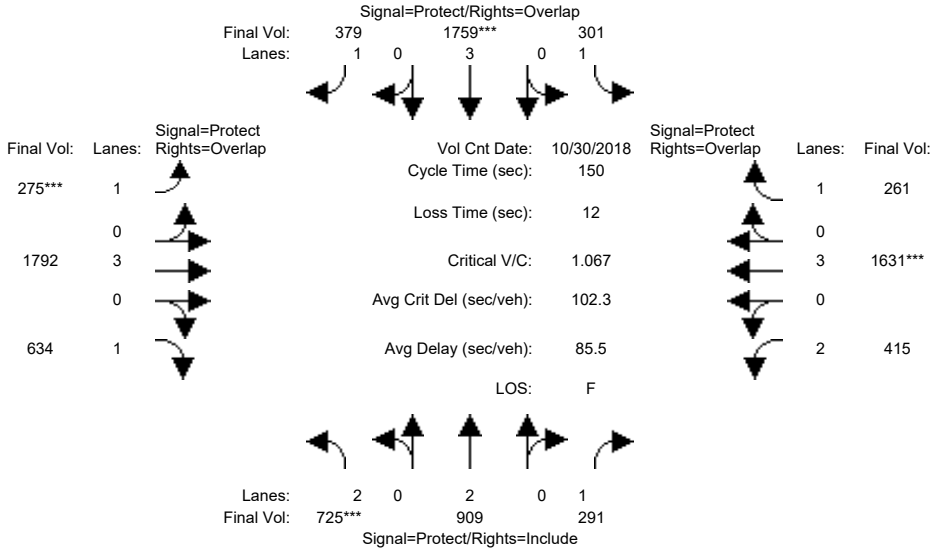
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	462	1558	65	159	992	291	143	835	553	383	1044	659
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	462	1558	65	159	992	291	143	835	553	383	1044	659
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	462	1558	65	159	992	291	143	835	553	383	1044	659
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	462	1558	65	159	992	291	143	835	553	383	1044	659
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	462	1558	65	159	992	291	143	835	553	383	1044	659
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	462	1558	65	159	992	291	143	835	553	383	1044	659
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.41	0.04	0.09	0.17	0.17	0.08	0.15	0.32	0.12	0.18	0.38
Crit Moves:		****		****			****					****
Green Time:	49.6	88.8	88.8	19.7	58.8	76.5	17.7	46.3	95.9	33.2	61.9	81.5
Volume/Cap:	0.59	0.92	0.08	0.92	0.59	0.43	0.92	0.63	0.66	0.73	0.59	0.92
Uniform Del:	66.3	52.4	32.1	89.4	60.3	45.7	90.5	69.2	39.6	79.1	58.4	56.3
IncremntDel:	1.2	9.0	0.0	46.9	0.6	0.5	50.2	1.0	1.9	5.2	0.5	17.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.5	61.4	32.2	136.4	60.9	46.2	140.7	70.2	41.5	84.4	58.9	74.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.5	61.4	32.2	136.4	60.9	46.2	140.7	70.2	41.5	84.4	58.9	74.0
LOS by Move:	E	E	C-	F	E	D	F	E	D	F	E+	E
HCM2kAvgQ:	15	47	2	12	17	14	9	14	26	14	18	44

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



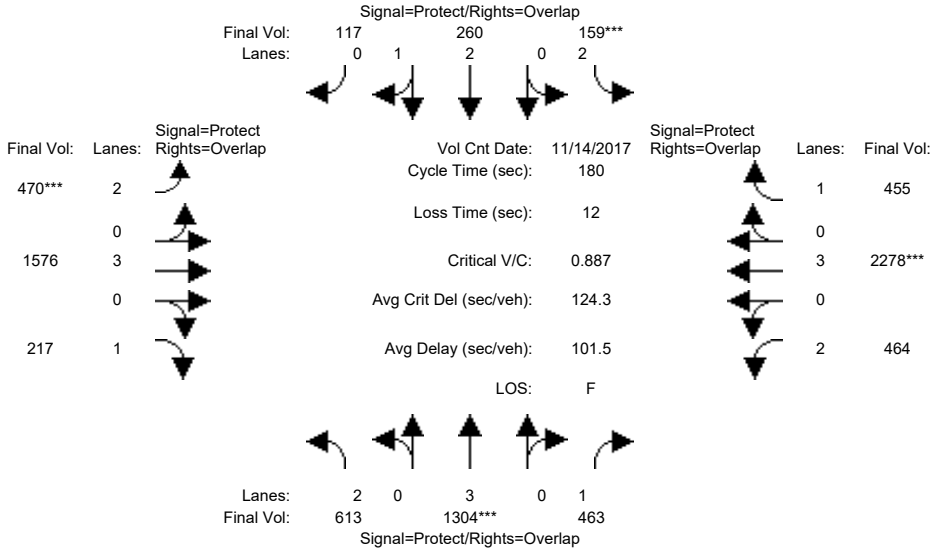
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	725	909	291	301	1759	379	275	1792	634	415	1631	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	725	909	291	301	1759	379	275	1792	634	415	1631	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	725	909	291	301	1759	379	275	1792	634	415	1631	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	725	909	291	301	1759	379	275	1792	634	415	1631	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	725	909	291	301	1759	379	275	1792	634	415	1631	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	725	909	291	301	1759	379	275	1792	634	415	1631	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.23	0.24	0.17	0.17	0.31	0.22	0.16	0.31	0.36	0.13	0.29	0.15
Crit Moves:	****				****		****				****	
Green Time:	32.3	44.0	44.0	31.7	43.4	65.4	22.1	43.9	76.2	18.4	40.2	71.9
Volume/Cap:	1.07	0.81	0.57	0.81	1.07	0.50	1.07	1.07	0.71	1.07	1.07	0.31
Uniform Del:	58.8	49.2	44.9	56.4	53.3	30.4	64.0	53.1	28.4	65.8	54.9	23.9
IncremntDel:	53.9	4.7	1.5	13.0	42.6	0.5	75.1	45.0	2.7	67.0	43.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	112.8	53.9	46.4	69.4	96.0	30.9	139.0	98.1	31.2	132.8	98.3	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	112.8	53.9	46.4	69.4	96.0	30.9	139.0	98.1	31.2	132.8	98.3	24.1
LOS by Move:	F	D-	D	E	F	C	F	F	C	F	F	C
HCM2kAvgQ:	26	20	12	13	30	12	15	31	22	17	33	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5320: CENTRAL EXPWY/MARY AVE



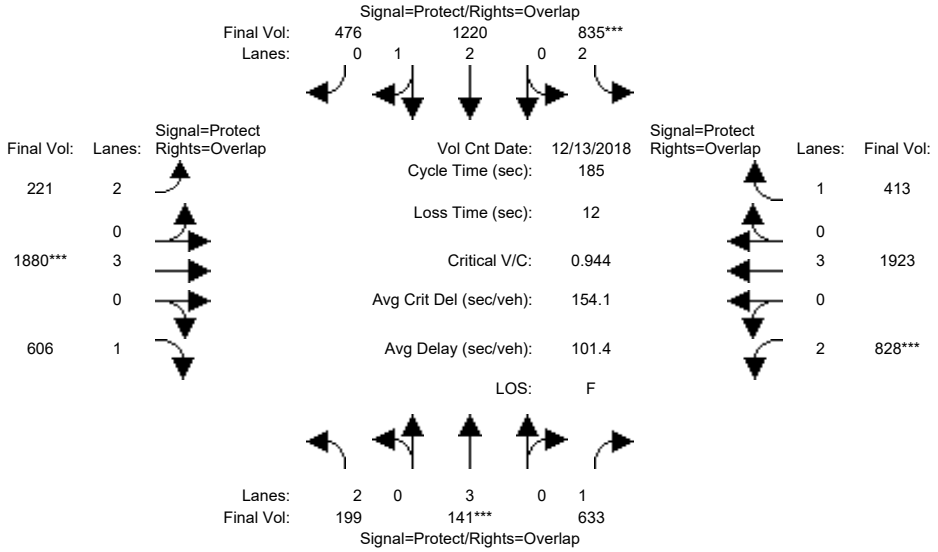
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	613	1304	463	159	260	117	470	1576	217	464	2278	455
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	1304	463	159	260	117	470	1576	217	464	2278	455
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	1304	463	159	260	117	470	1576	217	464	2278	455
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	1304	463	159	260	117	470	1576	217	464	2278	455
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	1304	463	159	260	117	470	1576	217	464	2278	455
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	1304	463	159	260	117	470	1576	217	464	2278	455
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.04	0.96	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3860	1737	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.23	0.26	0.05	0.07	0.07	0.15	0.28	0.12	0.15	0.40	0.26
Crit Moves:		****		****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.90	0.71	0.62	0.77	0.38	0.27	2.10	0.75	0.21	1.42	0.99	0.55
Uniform Del:	68.7	53.6	40.3	82.8	65.2	54.4	83.6	49.2	17.5	80.6	53.2	34.2
IncremntDel:	15.1	1.3	1.6	16.0	0.2	0.1	509.2	1.5	0.1	205.1	16.0	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.7	54.9	41.9	98.8	65.4	54.5	592.8	50.7	17.6	285.7	69.2	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	54.9	41.9	98.8	65.4	54.5	592.8	50.7	17.6	285.7	69.2	35.0
LOS by Move:	F	D-	D	F	E	D-	F	D	B	F	E	C-
HCM2kAvgQ:	19	20	20	7	6	6	34	25	6	27	47	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5320: CENTRAL EXPWY/MARY AVE



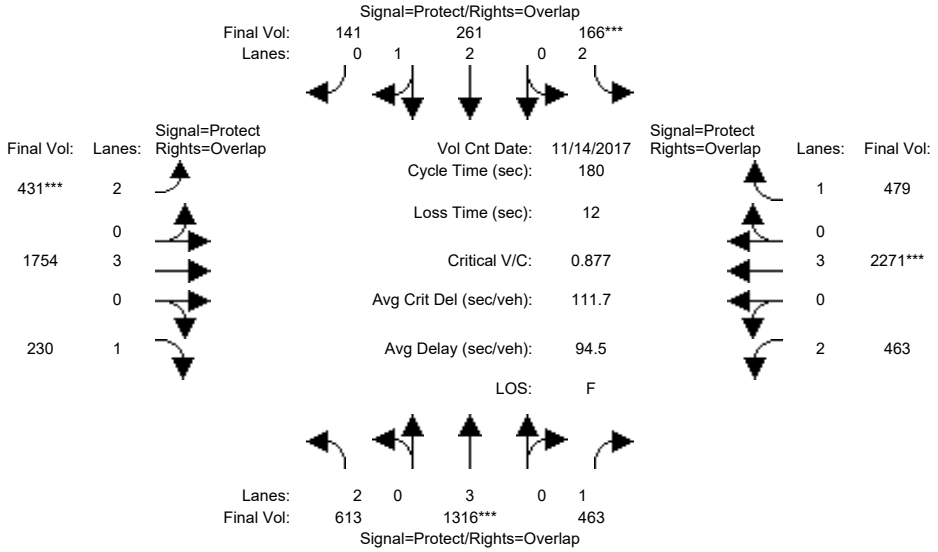
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	199	141	633	835	1220	476	221	1880	606	828	1923	413
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	141	633	835	1220	476	221	1880	606	828	1923	413
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	141	633	835	1220	476	221	1880	606	828	1923	413
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	141	633	835	1220	476	221	1880	606	828	1923	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	141	633	835	1220	476	221	1880	606	828	1923	413
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	141	633	835	1220	476	221	1880	606	828	1923	413
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.13	0.87	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4026	1571	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.36	0.27	0.30	0.30	0.07	0.33	0.35	0.26	0.34	0.24
Crit Moves:		****		****				****		****		
Green Time:	17.3	37.0	80.0	41.0	60.7	69.7	9.0	52.0	69.3	43.0	86.0	127.0
Volume/Cap:	0.67	0.12	0.84	1.20	0.92	0.80	1.44	1.17	0.92	1.13	0.73	0.34
Uniform Del:	81.1	60.7	46.7	72.0	59.9	51.6	88.0	66.5	55.3	71.0	40.0	11.9
IncremntDel:	6.1	0.0	8.1	101.9	8.4	2.4	231.8	85.0	18.9	75.5	1.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.12	1.02	1.20	1.61
Delay/Veh:	87.2	60.8	54.8	173.9	68.3	53.9	319.8	155	80.6	148.2	49.0	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.2	60.8	54.8	173.9	68.3	53.9	319.8	155	80.6	148.2	49.0	19.3
LOS by Move:	F	E	D-	F	E	D-	F	F	F	F	D	B-
HCM2kAvgQ:	7	2	35	41	35	30	14	49	39	38	32	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5320: CENTRAL EXPWY/MARY AVE



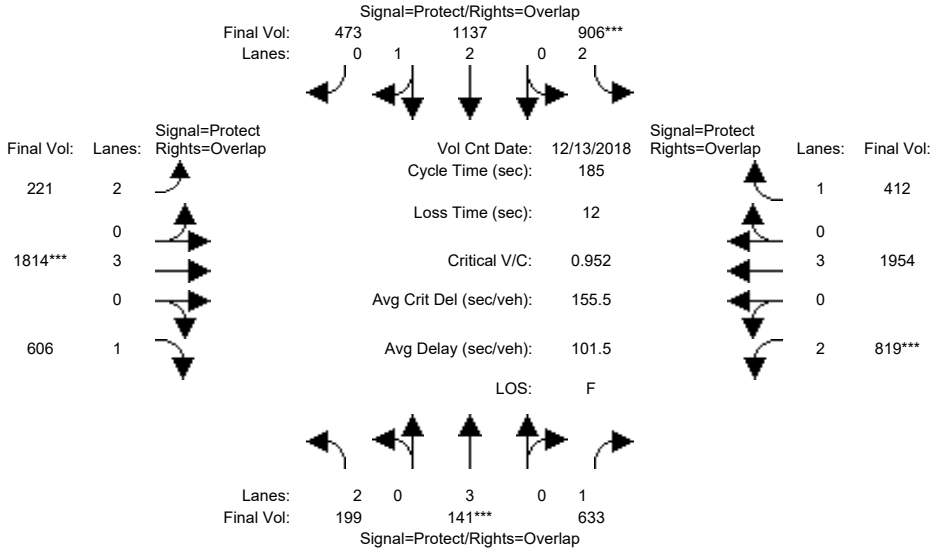
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 14 Nov 2017 << 7:45 AM - 8:45 AM												
Base Vol:	613	1316	463	166	261	141	431	1754	230	463	2271	479
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	1316	463	166	261	141	431	1754	230	463	2271	479
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	1316	463	166	261	141	431	1754	230	463	2271	479
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	1316	463	166	261	141	431	1754	230	463	2271	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	1316	463	166	261	141	431	1754	230	463	2271	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	1316	463	166	261	141	431	1754	230	463	2271	479
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.23	0.26	0.05	0.07	0.08	0.14	0.31	0.13	0.15	0.40	0.27
Crit Moves:		****		****			****				****	
Green Time:	38.9	58.0	76.7	11.8	32.1	44.9	12.8	66.8	105.7	18.7	72.8	84.6
Volume/Cap:	0.90	0.72	0.62	0.80	0.39	0.32	1.92	0.83	0.22	1.41	0.99	0.58
Uniform Del:	68.7	53.8	40.3	83.0	65.2	55.1	83.6	51.4	17.7	80.6	53.1	34.8
IncremntDel:	15.1	1.4	1.6	19.9	0.2	0.2	432.1	2.9	0.1	203.8	15.4	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.7	55.1	41.9	102.9	65.5	55.3	515.7	54.3	17.8	284.4	68.4	35.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	55.1	41.9	102.9	65.5	55.3	515.7	54.3	17.8	284.4	68.4	35.9
LOS by Move:	F	E+	D	F	E	E+	F	D-	B	F	E	D+
HCM2kAvgQ:	19	20	20	7	6	7	30	30	6	27	47	20

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5320: CENTRAL EXPWY/MARY AVE



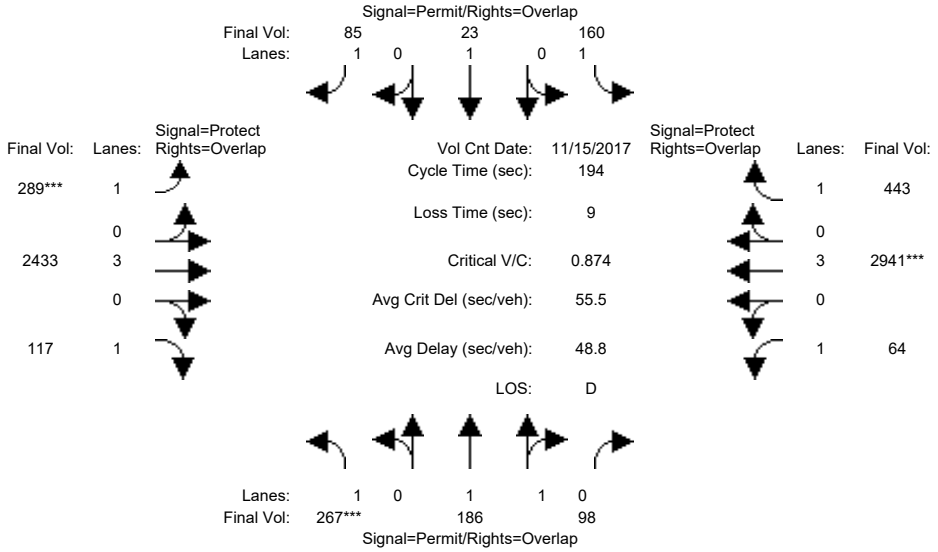
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	16	37	37	29	50	50	9	52	52	43	86	86
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 13 Dec 2018 << 4:45 - 5:45 PM												
Base Vol:	199	141	633	906	1137	473	221	1814	606	819	1954	412
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	141	633	906	1137	473	221	1814	606	819	1954	412
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	141	633	906	1137	473	221	1814	606	819	1954	412
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	141	633	906	1137	473	221	1814	606	819	1954	412
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	141	633	906	1137	473	221	1814	606	819	1954	412
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	141	633	906	1137	473	221	1814	606	819	1954	412
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.09	0.91	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3953	1644	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.36	0.29	0.29	0.29	0.07	0.32	0.35	0.26	0.34	0.24
Crit Moves:		****		****				****		****		
Green Time:	18.0	37.0	80.0	41.0	60.0	69.0	9.0	52.0	70.0	43.0	86.0	127.0
Volume/Cap:	0.65	0.12	0.84	1.30	0.89	0.77	1.44	1.13	0.91	1.12	0.74	0.34
Uniform Del:	80.4	60.7	46.7	72.0	59.3	51.1	88.0	66.5	54.6	71.0	40.3	11.9
IncremntDel:	4.8	0.0	8.1	144.4	5.8	1.8	231.8	67.9	17.3	70.8	1.1	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.12	1.02	1.20	1.61
Delay/Veh:	85.2	60.8	54.8	216.4	65.1	52.9	319.8	138	78.5	143.5	49.5	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.2	60.8	54.8	216.4	65.1	52.9	319.8	138	78.5	143.5	49.5	19.3
LOS by Move:	F	E	D-	F	E	D-	F	F	E-	F	D	B-
HCM2kAvgQ:	7	2	35	47	32	28	14	45	39	37	33	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



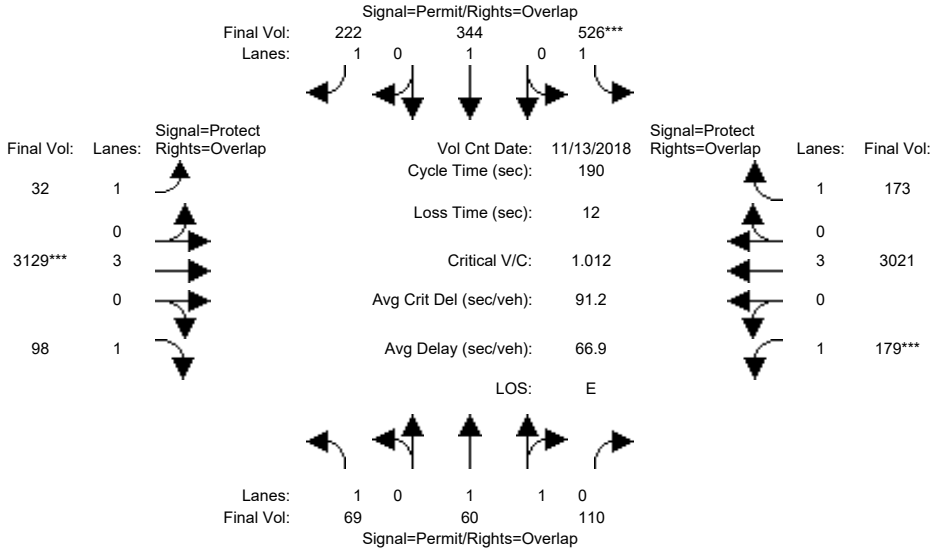
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	267	186	98	160	23	85	289	2433	117	64	2941	443
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	186	98	160	23	85	289	2433	117	64	2941	443
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	186	98	160	23	85	289	2433	117	64	2941	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	267	186	98	160	23	85	289	2433	117	64	2941	443
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	186	98	160	23	85	289	2433	117	64	2941	443
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	267	186	98	160	23	85	289	2433	117	64	2941	443
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	2422	1276	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.08	0.08	0.09	0.01	0.05	0.17	0.43	0.07	0.04	0.52	0.25
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	1.25	0.63	0.39	0.74	0.10	0.16	0.93	0.60	0.09	0.50	0.85	0.42
Uniform Del:	85.1	81.0	68.0	82.1	75.5	49.8	78.5	14.2	8.7	86.5	30.9	20.0
IncremntDel:	144.6	2.8	0.4	12.9	0.2	0.1	33.0	0.3	0.0	3.0	2.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	229.7	83.8	68.4	95.0	75.7	50.0	122.8	37.7	23.0	89.5	33.1	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	229.7	83.8	68.4	95.0	75.7	50.0	122.8	37.7	23.0	89.5	33.1	20.3
LOS by Move:	F	F	E	F	E-	D	F	D+	C	F	C-	C+
HCM2kAvgQ:	25	8	7	10	1	4	22	40	5	4	43	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



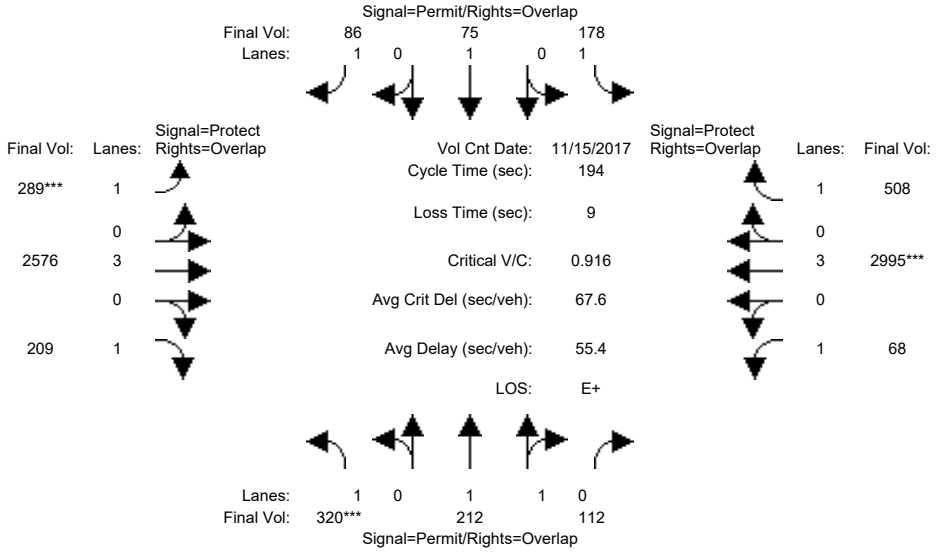
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	69	60	110	526	344	222	32	3129	98	179	3021	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	60	110	526	344	222	32	3129	98	179	3021	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	60	110	526	344	222	32	3129	98	179	3021	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	60	110	526	344	222	32	3129	98	179	3021	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	60	110	526	344	222	32	3129	98	179	3021	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	60	110	526	344	222	32	3129	98	179	3021	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.03	0.06	0.30	0.18	0.13	0.02	0.55	0.06	0.10	0.53	0.10
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.20	0.16	0.22	1.56	0.94	0.49	0.28	0.83	0.09	1.15	0.78	0.14
Uniform Del:	68.5	67.9	55.5	81.5	80.3	63.8	90.1	26.1	12.5	92.0	21.6	11.3
IncremntDel:	0.3	0.1	0.1	264.7	31.4	0.9	1.4	1.7	0.0	117.4	1.0	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	68.8	68.0	55.7	346.2	112	64.6	91.5	41.6	19.1	209.4	35.5	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	68.0	55.7	346.2	112	64.6	91.5	41.6	19.1	209.4	35.5	18.0
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	D+	B-
HCM2kAvgQ:	4	3	5	59	23	12	2	56	4	14	48	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



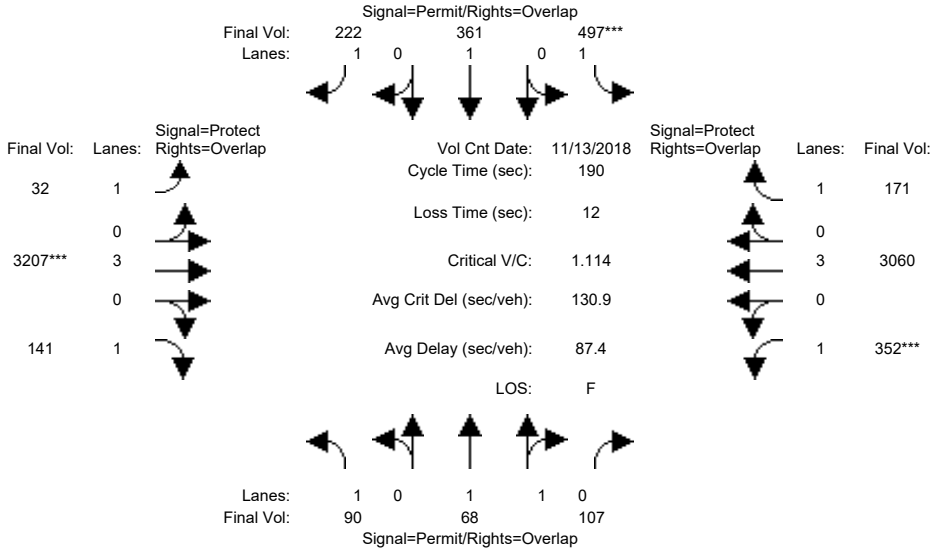
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	320	212	112	178	75	86	289	2576	209	68	2995	508
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	320	212	112	178	75	86	289	2576	209	68	2995	508
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	320	212	112	178	75	86	289	2576	209	68	2995	508
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	320	212	112	178	75	86	289	2576	209	68	2995	508
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	320	212	112	178	75	86	289	2576	209	68	2995	508
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	320	212	112	178	75	86	289	2576	209	68	2995	508
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	2420	1279	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.09	0.09	0.10	0.04	0.05	0.17	0.45	0.12	0.04	0.53	0.29
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	1.50	0.72	0.45	0.83	0.32	0.16	0.93	0.64	0.17	0.53	0.87	0.48
Uniform Del:	85.1	81.9	68.8	83.0	77.6	49.8	78.5	14.9	9.2	86.7	31.5	21.1
IncremntDel:	246.4	5.5	0.4	22.2	0.8	0.1	33.0	0.3	0.1	4.2	2.5	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	331.5	87.4	69.3	105.2	78.4	50.0	122.8	39.5	24.4	90.9	34.1	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	331.5	87.4	69.3	105.2	78.4	50.0	122.8	39.5	24.4	90.9	34.1	21.4
LOS by Move:	F	F	E	F	E-	D	F	D	C	F	C-	C+
HCM2kAvgQ:	34	10	8	12	4	4	22	43	10	4	45	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



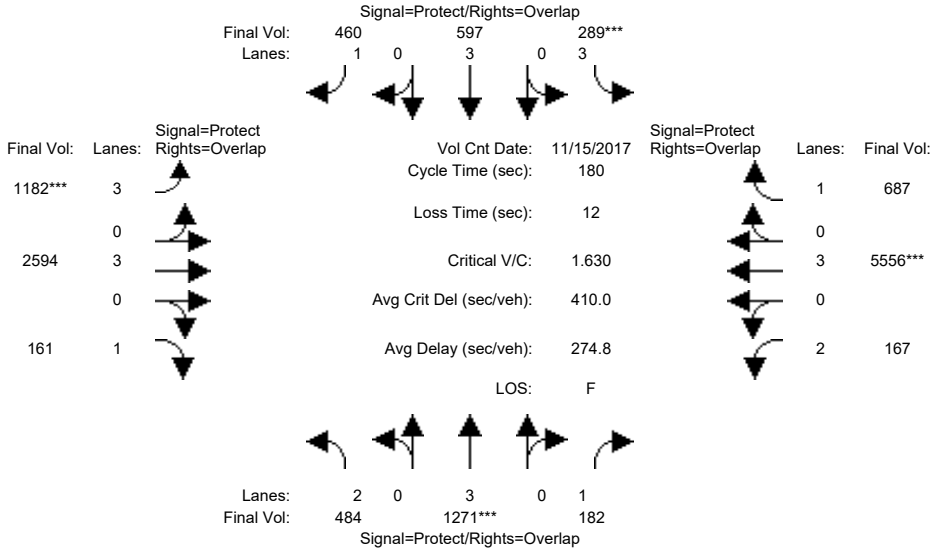
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	90	68	107	497	361	222	32	3207	141	352	3060	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	68	107	497	361	222	32	3207	141	352	3060	171
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	68	107	497	361	222	32	3207	141	352	3060	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	68	107	497	361	222	32	3207	141	352	3060	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	68	107	497	361	222	32	3207	141	352	3060	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	68	107	497	361	222	32	3207	141	352	3060	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.06	0.28	0.19	0.13	0.02	0.56	0.08	0.20	0.54	0.10
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.27	0.19	0.22	1.47	0.98	0.49	0.28	0.85	0.12	2.26	0.79	0.14
Uniform Del:	69.3	68.2	55.4	81.5	81.2	63.8	90.1	26.9	12.8	92.0	21.9	11.2
IncremntDel:	0.4	0.1	0.1	227.4	42.6	0.9	1.4	2.1	0.0	585.8	1.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	69.8	68.3	55.6	308.9	124	64.6	91.5	43.3	19.6	677.8	36.1	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	68.3	55.6	308.9	124	64.6	91.5	43.3	19.6	677.8	36.1	18.0
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	D+	B-
HCM2kAvgQ:	5	3	5	53	25	12	2	59	5	48	49	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



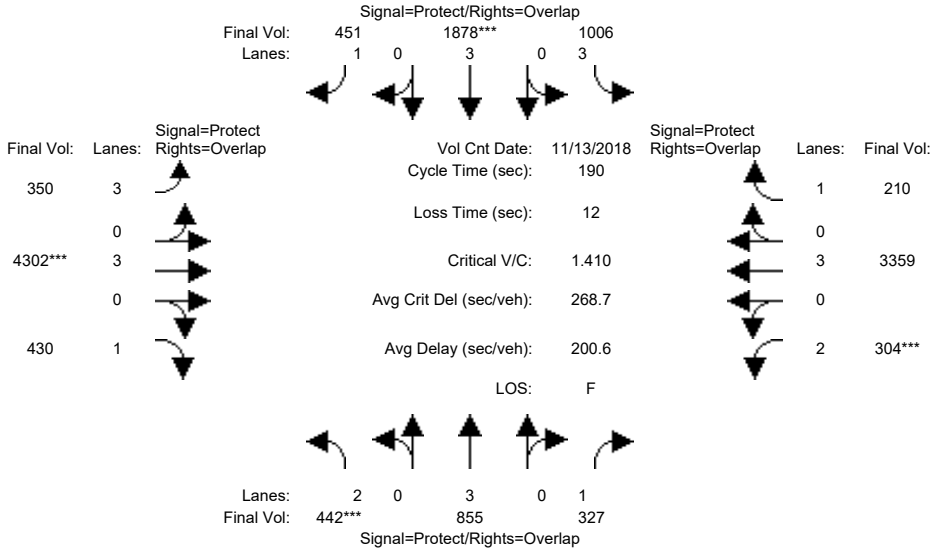
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	484	1271	182	289	597	460	1182	2594	161	167	5556	687
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.10	0.06	0.10	0.26	0.26	0.46	0.09	0.05	0.97	0.39
Crit Moves:		****		****			****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	1.40	1.00	0.33	0.82	0.54	0.78	1.81	0.84	0.14	0.58	1.98	0.69
Uniform Del:	80.2	69.9	47.2	81.8	65.6	53.9	77.1	34.8	12.1	78.5	45.8	27.6
IncremntDel:	198.6	24.9	0.4	14.4	0.6	6.8	371.7	2.2	0.1	3.0	444	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	278.8	94.7	47.6	96.2	66.2	60.7	448.8	37.0	12.2	81.5	490	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	278.8	94.7	47.6	96.2	66.2	60.7	448.8	37.0	12.2	81.5	490	29.7
LOS by Move:	F	F	D	F	E	E	F	D+	B	F	F	C
HCM2kAvgQ:	25	23	8	7	9	24	53	40	4	6	209	29

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



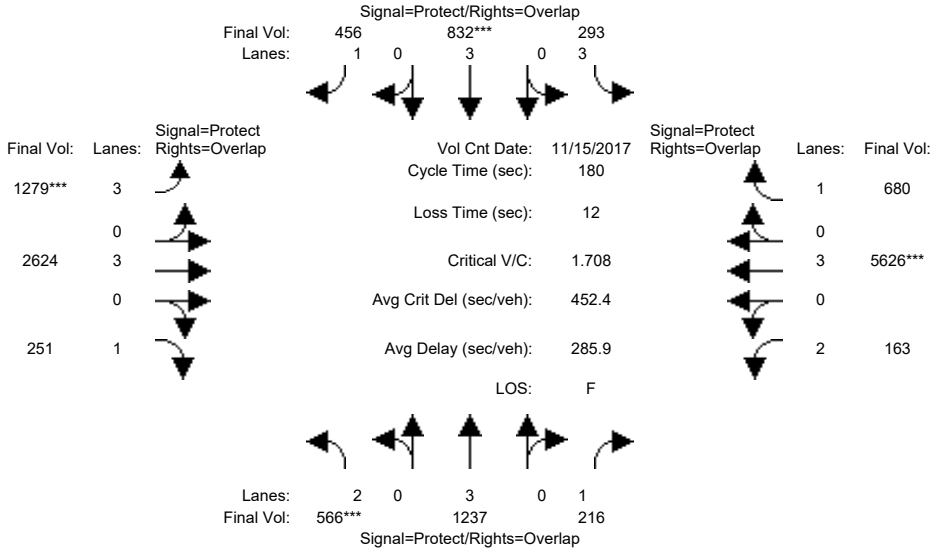
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	442	855	327	1006	1878	451	350	4302	430	304	3359	210
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.15	0.19	0.22	0.33	0.26	0.08	0.75	0.25	0.10	0.59	0.12
Crit Moves:	****				****			****			****	
Green Time:	18.8	39.0	53.0	23.9	44.1	60.1	16.0	101	119.9	14.0	99.1	123.0
Volume/Cap:	1.42	0.73	0.67	1.76	1.42	0.81	0.91	1.42	0.39	1.31	1.13	0.19
Uniform Del:	85.6	70.6	60.7	83.0	72.9	59.8	86.3	44.5	17.2	88.0	45.5	13.4
IncremntDel:	206.3	2.4	3.6	347.3	193	9.0	25.7	190	0.2	166.8	63.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.76	2.14	1.00	0.73	0.45
Delay/Veh:	291.9	73.0	64.3	430.4	266	68.8	117.3	269	36.9	254.8	96.7	6.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	291.9	73.0	64.3	430.4	266	68.8	117.3	269	36.9	254.8	96.7	6.1
LOS by Move:	F	E	E	F	F	E	F	F	D+	F	F	A
HCM2kAvgQ:	25	15	18	45	56	24	9	130	22	18	81	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



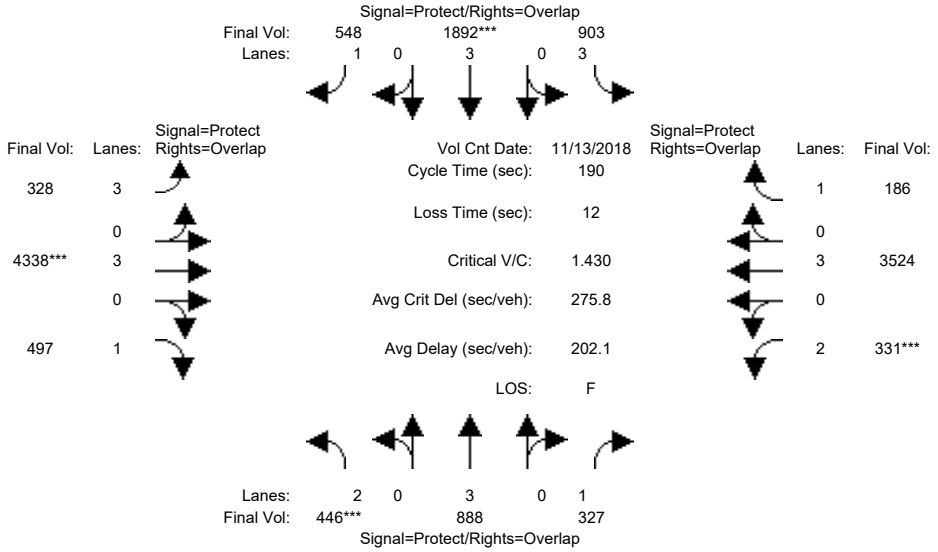
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	78	78	14	85	85
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	1237	216	293	832	456	1279	2624	251	163	5626	680
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.22	0.12	0.06	0.15	0.26	0.28	0.46	0.14	0.05	0.99	0.39
Crit Moves:	****				****		****				****	
Green Time:	19.7	40.2	56.6	13.9	34.6	60.4	25.8	97.4	117.1	16.4	88.4	102.3
Volume/Cap:	1.64	0.97	0.39	0.83	0.76	0.78	1.96	0.85	0.22	0.57	2.01	0.68
Uniform Del:	80.2	69.3	48.3	81.9	68.8	53.7	77.1	35.1	12.8	78.4	45.8	27.4
IncremntDel:	301.9	18.8	0.5	15.6	3.1	6.5	438.1	2.4	0.1	2.7	456	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	382.0	88.1	48.7	97.5	71.9	60.2	515.2	37.6	12.9	81.1	501	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	382.0	88.1	48.7	97.5	71.9	60.2	515.2	37.6	12.9	81.1	501	29.4
LOS by Move:	F	F	D	F	E	E	F	D+	B	F	F	C
HCM2kAvgQ:	34	22	9	7	14	24	60	41	6	6	214	28

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5329: CENTRAL EXPWY/BOWERS AVE



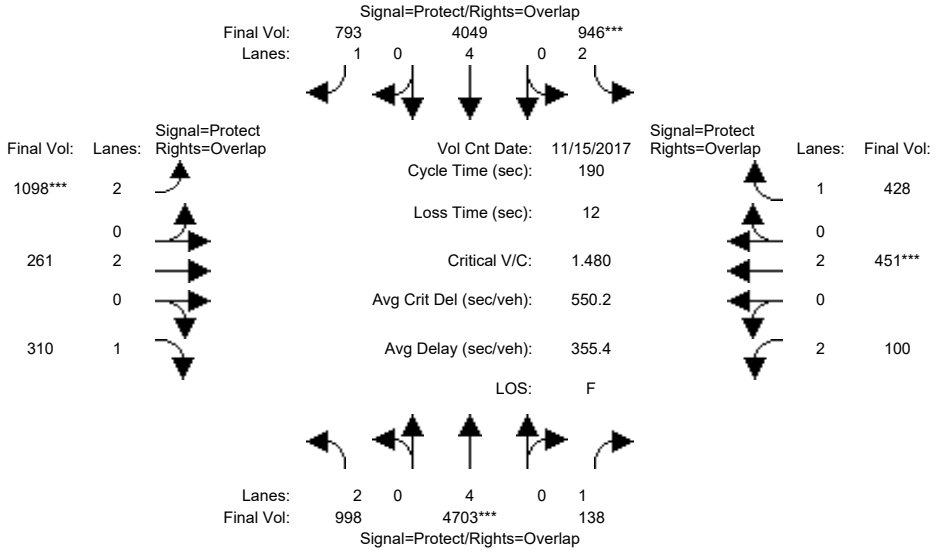
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	39	39	16	40	40	16	96	96	14	95	95
Y+R:	7.3	6.3	6.3	7.3	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	446	888	327	903	1892	548	328	4338	497	331	3524	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	446	888	327	903	1892	548	328	4338	497	331	3524	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	446	888	327	903	1892	548	328	4338	497	331	3524	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	446	888	327	903	1892	548	328	4338	497	331	3524	186
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	446	888	327	903	1892	548	328	4338	497	331	3524	186
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	446	888	327	903	1892	548	328	4338	497	331	3524	186
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.80	1.00	0.92	0.80	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	3.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	4551	5700	1750	4551	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.16	0.19	0.20	0.33	0.31	0.07	0.76	0.28	0.11	0.62	0.11
Crit Moves:	****				****			****		****		
Green Time:	18.8	39.0	53.0	23.9	44.1	60.1	16.0	101	119.9	14.0	99.1	123.0
Volume/Cap:	1.43	0.76	0.67	1.58	1.43	0.99	0.86	1.43	0.45	1.43	1.19	0.16
Uniform Del:	85.6	71.1	60.7	83.0	73.0	64.7	85.9	44.5	18.1	88.0	45.5	13.2
IncremntDel:	211.2	2.9	3.6	268.1	198	35.6	17.0	196	0.3	214.9	87.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.76	2.14	1.00	0.73	0.45
Delay/Veh:	296.8	74.0	64.3	351.1	271	100.3	108.1	274	38.9	302.9	120	6.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	296.8	74.0	64.3	351.1	271	100.3	108.1	274	38.9	302.9	120	6.0
LOS by Move:	F	E	E	F	F	F	F	F	D+	F	F	A
HCM2kAvgQ:	25	16	18	37	57	33	8	132	25	20	90	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



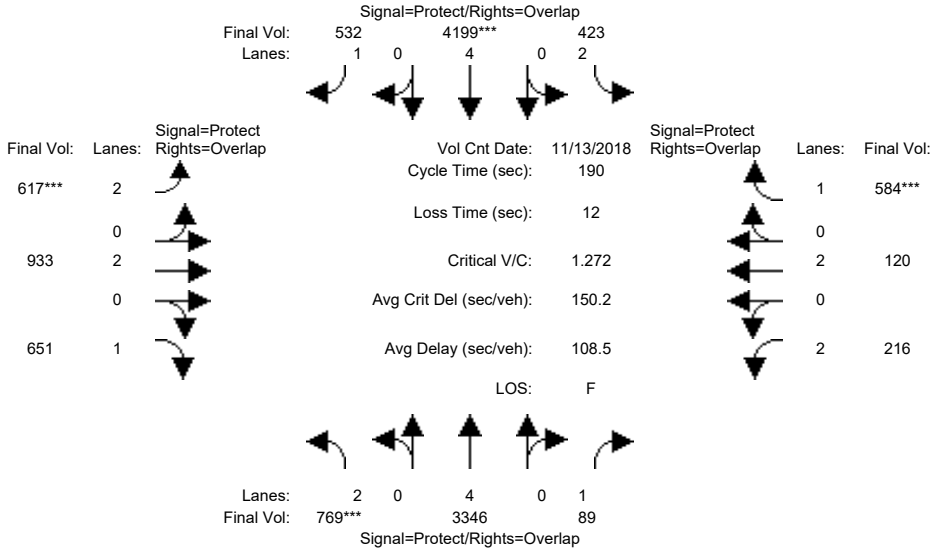
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	90	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	998	4703	138	946	4049	793	1098	261	310	100	451	428
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	998	4703	138	946	4049	793	1098	261	310	100	451	428
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	998	4703	138	946	4049	793	1098	261	310	100	451	428
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	998	4703	138	946	4049	793	1098	261	310	100	451	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	998	4703	138	946	4049	793	1098	261	310	100	451	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	998	4703	138	946	4049	793	1098	261	310	100	451	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.32	0.62	0.08	0.30	0.53	0.45	0.35	0.07	0.18	0.03	0.12	0.24
Crit Moves:		****			****			****			****	
Green Time:	23.3	110	119.3	17.1	104	115.8	11.4	35.1	58.4	9.0	32.6	49.7
Volume/Cap:	2.58	1.07	0.13	3.34	0.97	0.74	5.81	0.37	0.58	0.67	0.69	0.93
Uniform Del:	83.4	39.9	14.3	86.5	41.3	26.5	89.3	67.8	55.4	89.0	74.0	68.6
IncremntDel:	720.4	35.3	0.1	1061	8.2	2.9	2176	0.3	1.5	11.2	3.2	26.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	803.8	75.1	14.3	1147	49.4	29.4	2265	68.1	56.9	100.2	77.2	95.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	803.8	75.1	14.3	1147	49.4	29.4	2265	68.1	56.9	100.2	77.2	95.1
LOS by Move:	F	E-	B	F	D	C	F	E	E+	F	E-	F
HCM2kAvgQ:	78	73	3	81	61	35	104	6	16	5	13	30

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



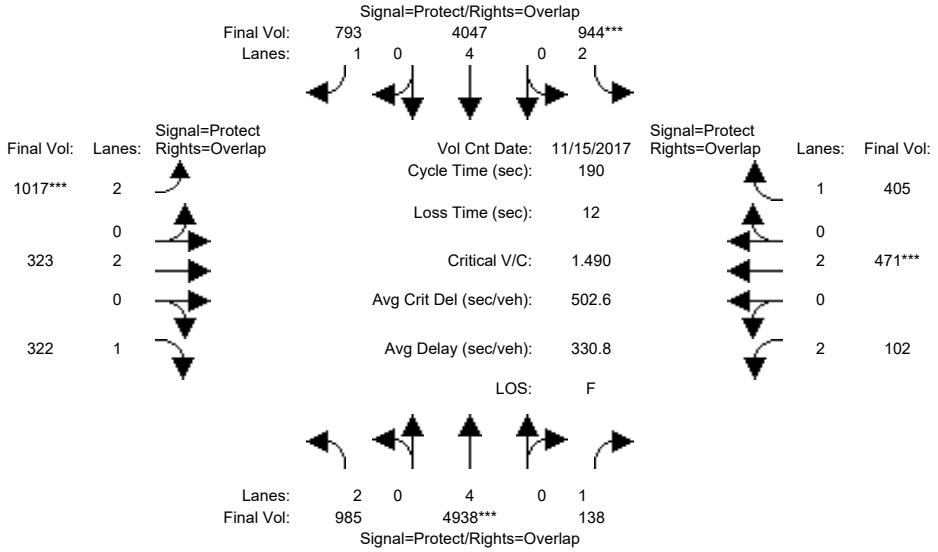
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	89	89	21	98	98	29	45	45	11	27	27
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	769	3346	89	423	4199	532	617	933	651	216	120	584
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	769	3346	89	423	4199	532	617	933	651	216	120	584
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	769	3346	89	423	4199	532	617	933	651	216	120	584
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	769	3346	89	423	4199	532	617	933	651	216	120	584
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	769	3346	89	423	4199	532	617	933	651	216	120	584
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	769	3346	89	423	4199	532	617	933	651	216	120	584
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.24	0.44	0.05	0.13	0.55	0.30	0.20	0.25	0.37	0.07	0.03	0.33
Crit Moves:	****				****		****					****
Green Time:	28.1	98.0	109.3	28.1	98.0	127.0	29.0	40.6	68.7	11.3	27.0	55.1
Volume/Cap:	1.65	0.85	0.09	0.91	1.07	0.45	1.28	1.15	1.03	1.15	0.22	1.15
Uniform Del:	81.0	39.8	18.0	79.7	46.0	15.0	80.5	74.7	60.7	89.3	72.2	67.5
IncremntDel:	303.1	2.0	0.0	21.5	37.9	0.3	142.6	81.3	43.5	111.5	0.2	88.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.74	0.63	1.00	1.26	1.55	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	384.1	31.5	11.4	101.2	95.8	23.6	223.1	156	104.2	200.9	72.4	156.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	384.1	31.5	11.4	101.2	95.8	23.6	223.1	156	104.2	200.9	72.4	156.1
LOS by Move:	F	C	B+	F	F	C	F	F	F	F	E	F
HCM2kAvgQ:	48	37	1	18	72	22	30	33	41	12	3	49

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



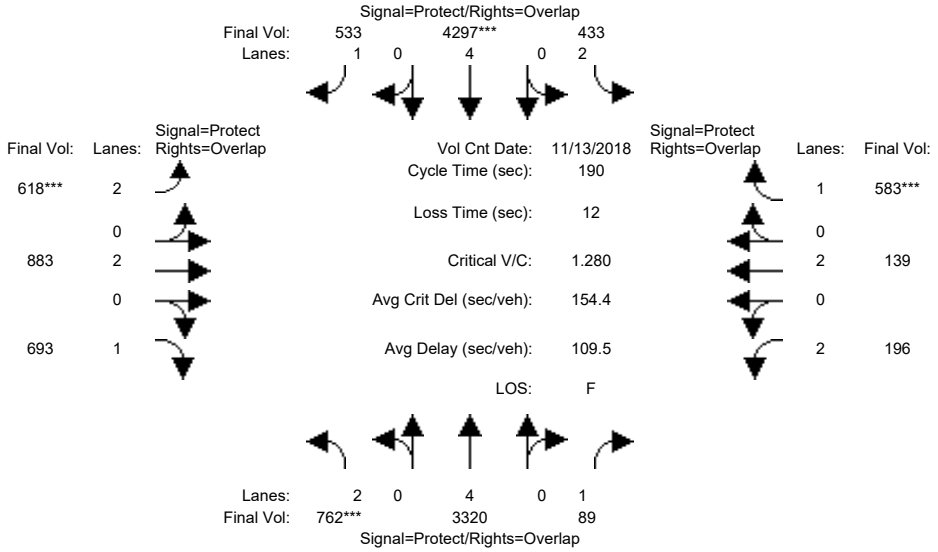
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	90	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 15 Nov 2017 << 7:30 AM - 8:30 AM												
Base Vol:	985	4938	138	944	4047	793	1017	323	322	102	471	405
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	985	4938	138	944	4047	793	1017	323	322	102	471	405
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	985	4938	138	944	4047	793	1017	323	322	102	471	405
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	985	4938	138	944	4047	793	1017	323	322	102	471	405
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	985	4938	138	944	4047	793	1017	323	322	102	471	405
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	985	4938	138	944	4047	793	1017	323	322	102	471	405
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.31	0.65	0.08	0.30	0.53	0.45	0.32	0.09	0.18	0.03	0.12	0.23
Crit Moves:		****			****			****			****	
Green Time:	23.3	110	119.3	17.1	104	115.8	11.4	35.1	58.4	9.0	32.6	49.7
Volume/Cap:	2.55	1.12	0.13	3.33	0.97	0.74	5.38	0.46	0.60	0.68	0.72	0.88
Uniform Del:	83.4	39.9	14.3	86.5	41.2	26.5	89.3	69.0	55.9	89.1	74.4	67.4
IncremntDel:	705.3	57.3	0.1	1057	8.1	2.9	1983	0.5	1.9	12.3	4.0	18.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	788.7	97.1	14.3	1144	49.4	29.4	2072	69.5	57.7	101.4	78.4	85.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	788.7	97.1	14.3	1144	49.4	29.4	2072	69.5	57.7	101.4	78.4	85.6
LOS by Move:	F	F	B	F	D	C	F	E	E+	F	E-	F
HCM2kAvgQ:	77	83	3	81	61	35	95	8	17	5	14	27

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5408: SAN TOMAS EXPWY/SCOTT BLVD



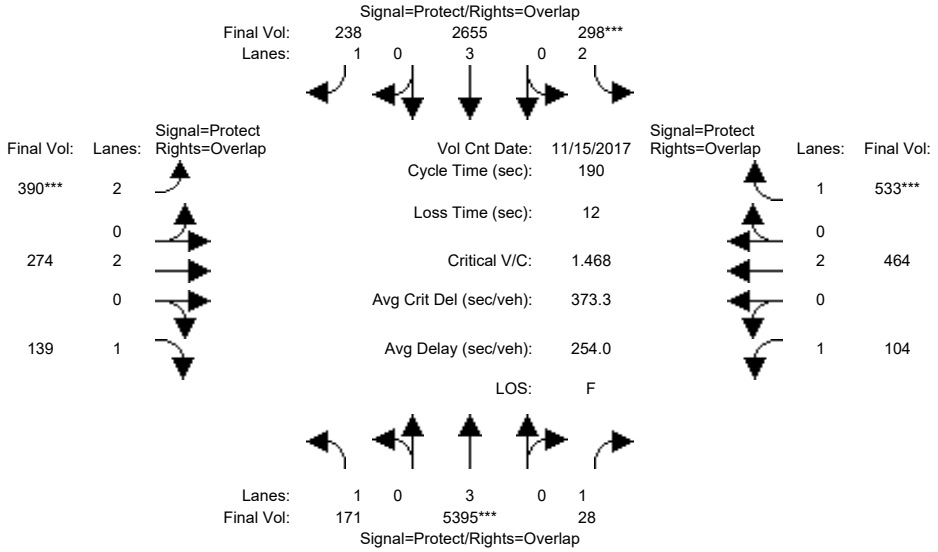
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	89	89	21	98	98	29	45	45	11	27	27
Y+R:	5.7	5.8	5.8	6.0	5.8	5.8	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	762	3320	89	433	4297	533	618	883	693	196	139	583
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	762	3320	89	433	4297	533	618	883	693	196	139	583
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	762	3320	89	433	4297	533	618	883	693	196	139	583
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	3320	89	433	4297	533	618	883	693	196	139	583
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	762	3320	89	433	4297	533	618	883	693	196	139	583
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	762	3320	89	433	4297	533	618	883	693	196	139	583
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.24	0.44	0.05	0.14	0.57	0.30	0.20	0.23	0.40	0.06	0.04	0.33
Crit Moves:	****				****		****					****
Green Time:	28.2	97.6	108.3	28.6	98.0	127.0	29.0	41.0	69.2	10.8	27.0	55.6
Volume/Cap:	1.63	0.85	0.09	0.91	1.10	0.46	1.29	1.08	1.09	1.10	0.26	1.14
Uniform Del:	80.9	39.9	18.5	79.4	46.0	15.0	80.5	74.5	60.4	89.6	72.6	67.2
IncremntDel:	293.2	1.9	0.0	21.8	48.0	0.3	143.5	53.9	61.6	95.6	0.3	83.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.75	0.64	1.00	1.26	1.55	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	374.1	31.7	11.9	101.3	106	23.6	224.0	128	121.9	185.2	72.8	150.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	374.1	31.7	11.9	101.3	106	23.6	224.0	128	121.9	185.2	72.8	150.7
LOS by Move:	F	C	B+	F	F	C	F	F	F	F	E	F
HCM2kAvgQ:	47	37	1	18	76	22	30	28	48	11	4	48

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



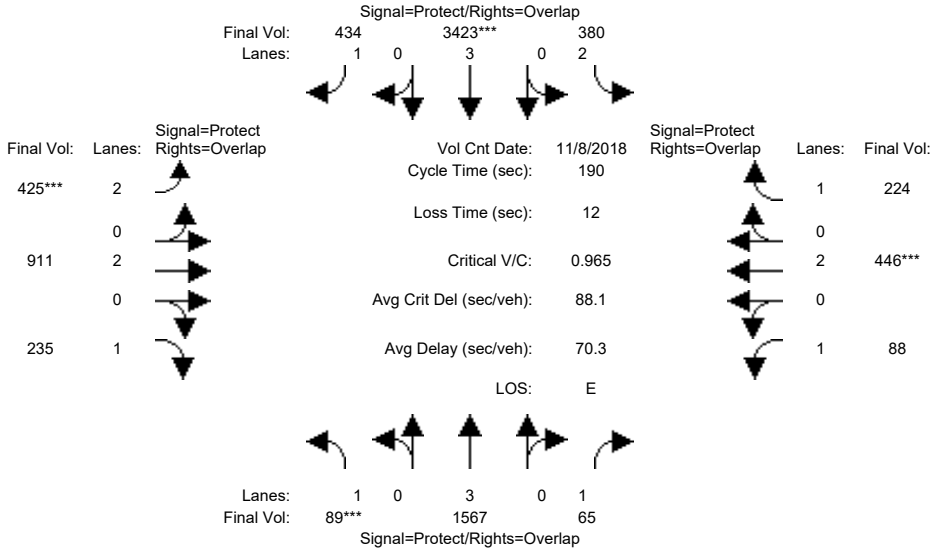
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	80	10	14	10	10	14	10	10
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	171	6347	28	298	3124	238	390	274	139	104	464	533
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	6347	28	298	3124	238	390	274	139	104	464	533
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	171	6347	28	298	3124	238	390	274	139	104	464	533
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	171	5395	28	298	2655	238	390	274	139	104	464	533
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	5395	28	298	2655	238	390	274	139	104	464	533
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	171	5395	28	298	2655	238	390	274	139	104	464	533
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.95	0.02	0.09	0.47	0.14	0.12	0.07	0.08	0.06	0.12	0.30
Crit Moves:		****			****			****				****
Green Time:	13.8	101	114.9	10.1	97.9	115.4	17.5	42.0	55.8	13.7	38.2	48.3
Volume/Cap:	1.35	1.78	0.03	1.78	0.90	0.22	1.34	0.33	0.27	0.82	0.61	1.20
Uniform Del:	88.1	44.4	15.1	89.9	41.8	16.9	86.3	62.1	51.5	87.0	69.1	70.8
IncremntDel:	198.8	351	0.0	373.2	4.4	0.1	176.2	0.2	0.3	33.7	1.4	109.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	286.9	395	15.1	463.2	46.2	17.1	262.5	62.3	51.8	120.7	70.5	179.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	286.9	395	15.1	463.2	46.2	17.1	262.5	62.3	51.8	120.7	70.5	179.8
LOS by Move:	F	F	B	F	D	B	F	E	D-	F	E	F
HCM2kAvgQ:	16	193	1	20	46	6	21	7	8	8	13	47

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



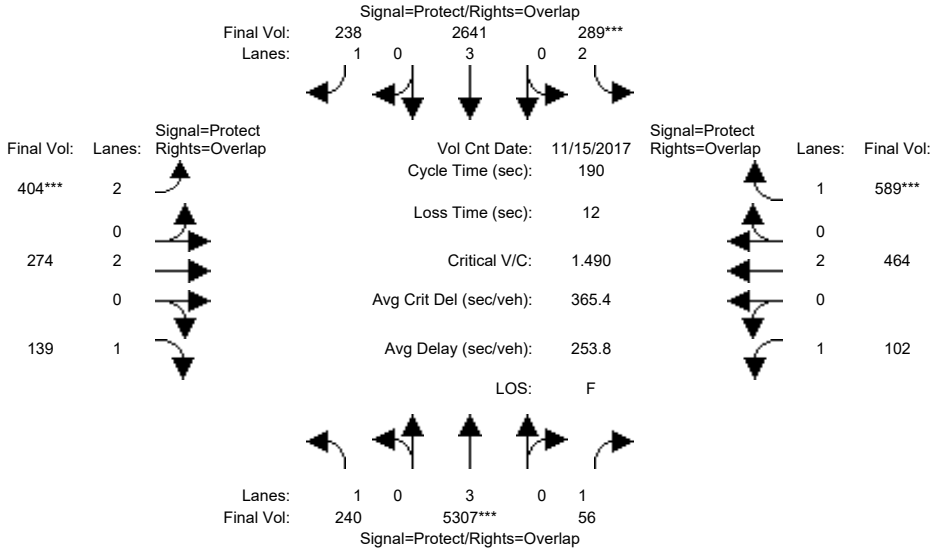
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	11	78	78	34	102	102	14	42	42	12	40	40
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	89	2177	65	380	4689	434	425	911	235	88	446	224
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	2177	65	380	4689	434	425	911	235	88	446	224
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	2177	65	380	4689	434	425	911	235	88	446	224
User Adj:	1.00	0.72	1.00	1.00	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	1567	65	380	3423	434	425	911	235	88	446	224
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	1567	65	380	3423	434	425	911	235	88	446	224
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	1567	65	380	3423	434	425	911	235	88	446	224
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.27	0.04	0.12	0.60	0.25	0.13	0.24	0.13	0.05	0.12	0.13
Crit Moves:	****				****		****				****	
Green Time:	11.0	79.9	93.1	34.8	104	127.0	23.3	50.1	61.1	13.2	40.0	74.8
Volume/Cap:	0.88	0.65	0.08	0.66	1.10	0.37	1.10	0.91	0.42	0.72	0.56	0.33
Uniform Del:	88.8	44.0	25.7	72.1	43.1	13.9	83.4	67.7	50.5	86.6	67.1	40.0
IncremntDel:	52.7	0.7	0.0	2.8	50.8	0.2	75.6	11.9	0.5	19.3	0.9	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.87	0.78	1.00	0.69	0.38	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	141.5	39.0	20.1	74.9	80.5	5.4	159.0	79.6	51.0	105.9	68.0	40.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	141.5	39.0	20.1	74.9	80.5	5.4	159.0	79.6	51.0	105.9	68.0	40.3
LOS by Move:	F	D	C+	E	F	A	F	E-	D-	F	E	D
HCM2kAvgQ:	6	20	1	11	74	4	17	24	11	7	12	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



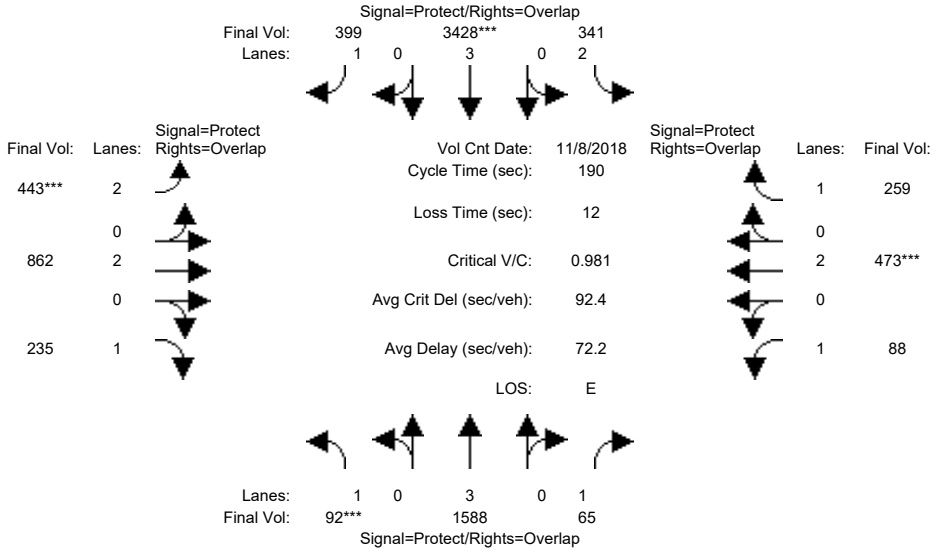
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	100	10	14	80	10	14	10	10	14	10	10
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	240	6244	56	289	3107	238	404	274	139	102	464	589
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	240	6244	56	289	3107	238	404	274	139	102	464	589
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	240	6244	56	289	3107	238	404	274	139	102	464	589
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	240	5307	56	289	2641	238	404	274	139	102	464	589
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	5307	56	289	2641	238	404	274	139	102	464	589
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	5307	56	289	2641	238	404	274	139	102	464	589
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.93	0.03	0.09	0.46	0.14	0.13	0.07	0.08	0.06	0.12	0.34
Crit Moves:		****		****			****					****
Green Time:	13.8	101	114.9	10.1	97.9	115.4	17.5	42.0	55.8	13.7	38.2	48.3
Volume/Cap:	1.89	1.75	0.05	1.72	0.90	0.22	1.39	0.33	0.27	0.81	0.61	1.32
Uniform Del:	88.1	44.4	15.3	89.9	41.6	16.9	86.3	62.1	51.5	86.9	69.1	70.8
IncremntDel:	428.2	338	0.0	349.9	4.2	0.1	196.4	0.2	0.3	30.8	1.4	160.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	516.3	382	15.4	439.8	45.8	17.1	282.7	62.3	51.8	117.6	70.5	231.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	516.3	382	15.4	439.8	45.8	17.1	282.7	62.3	51.8	117.6	70.5	231.4
LOS by Move:	F	F	B	F	D	B	F	E	D-	F	E	F
HCM2kAvgQ:	29	188	1	19	45	6	22	7	8	8	13	57

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5414: SAN TOMAS EXPWY/MONROE ST



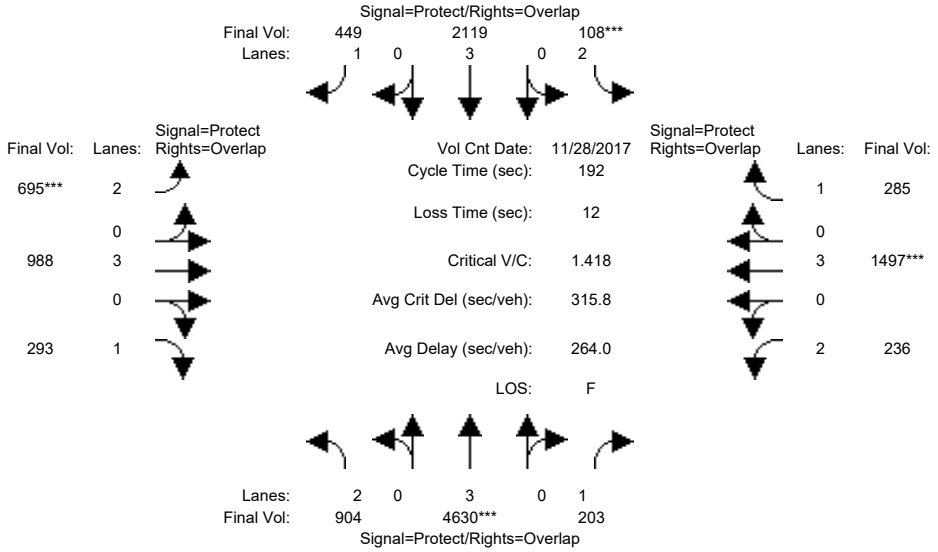
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	11	78	78	34	102	102	14	42	42	12	40	40
Y+R:	5.3	5.8	5.8	5.6	5.8	5.8	6.0	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	92	2206	65	341	4696	399	443	862	235	88	473	259
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	2206	65	341	4696	399	443	862	235	88	473	259
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	2206	65	341	4696	399	443	862	235	88	473	259
User Adj:	1.00	0.72	1.00	1.00	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	1588	65	341	3428	399	443	862	235	88	473	259
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	1588	65	341	3428	399	443	862	235	88	473	259
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	1588	65	341	3428	399	443	862	235	88	473	259
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.04	0.11	0.60	0.23	0.14	0.23	0.13	0.05	0.12	0.15
Crit Moves:	****				****		****				****	
Green Time:	11.0	79.3	93.3	34.6	103	127.0	24.1	50.1	61.1	14.0	40.0	74.6
Volume/Cap:	0.91	0.67	0.08	0.59	1.11	0.34	1.11	0.86	0.42	0.68	0.59	0.38
Uniform Del:	89.0	44.7	25.6	71.3	43.5	13.5	83.0	66.6	50.5	85.9	67.6	41.1
IncremntDel:	60.7	0.7	0.0	1.7	54.9	0.2	78.3	7.6	0.5	14.3	1.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.88	0.78	1.00	0.70	0.38	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	149.7	39.8	20.0	73.0	85.2	5.3	161.3	74.2	51.0	100.1	68.8	41.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	149.7	39.8	20.0	73.0	85.2	5.3	161.3	74.2	51.0	100.1	68.8	41.5
LOS by Move:	F	D	B-	E	F	A	F	E	D	F	E	D
HCM2kAvgQ:	6	21	1	10	75	4	18	22	11	7	13	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



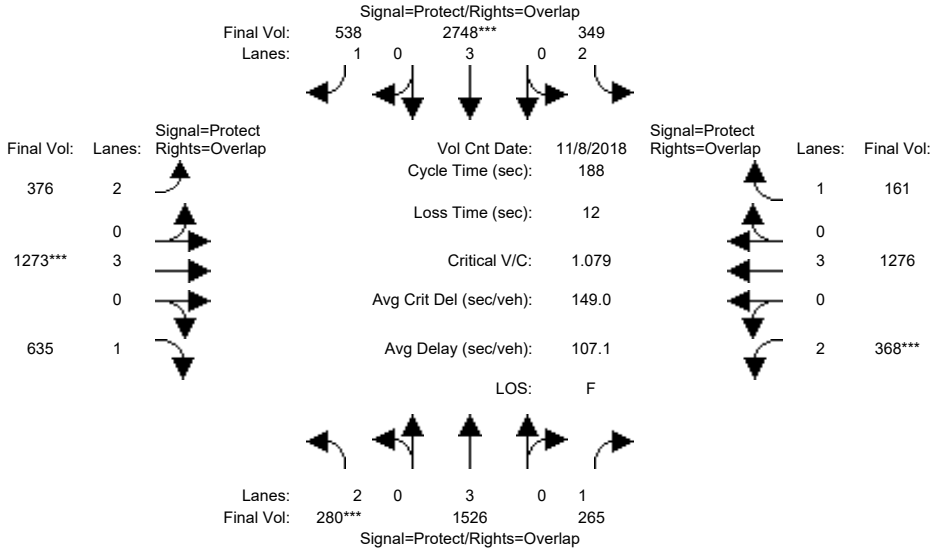
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 28 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	904	5447	203	108	2493	449	695	988	293	236	1497	285
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	904	5447	203	108	2493	449	695	988	293	236	1497	285
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	904	5447	203	108	2493	449	695	988	293	236	1497	285
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	904	4630	203	108	2119	449	695	988	293	236	1497	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	904	4630	203	108	2119	449	695	988	293	236	1497	285
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	904	4630	203	108	2119	449	695	988	293	236	1497	285
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.29	0.81	0.12	0.03	0.37	0.26	0.22	0.17	0.17	0.07	0.26	0.16
Crit Moves:		****			****			****			****	
Green Time:	19.3	97.2	111.1	12.3	90.2	116.6	26.4	47.1	66.4	13.9	34.5	46.8
Volume/Cap:	2.86	1.60	0.20	0.53	0.79	0.42	1.61	0.71	0.48	1.03	1.46	0.67
Uniform Del:	86.4	47.4	19.3	87.1	42.9	19.9	82.8	66.1	49.3	89.0	78.8	65.6
IncremntDel:	843.7	274	0.1	2.8	1.7	0.3	283.2	1.7	0.6	68.1	214	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	930.0	321	19.4	89.8	44.6	20.2	366.0	67.8	50.0	157.1	293	69.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	930.0	321	19.4	89.8	44.6	20.2	366.0	67.8	50.0	157.1	293	69.6
LOS by Move:	F	F	B-	F	D	C+	F	E	D	F	F	E
HCM2kAvgQ:	75	158	6	3	33	14	43	17	14	12	49	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



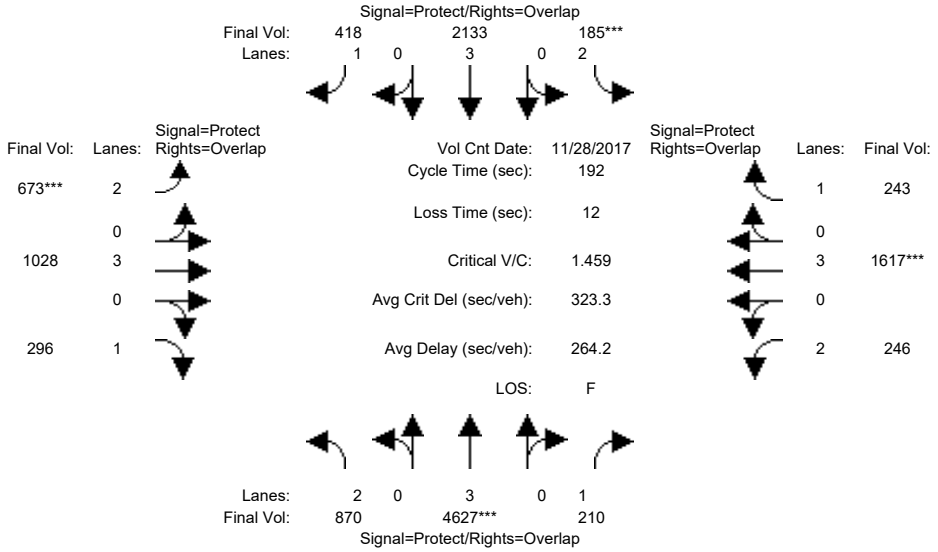
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	13	75	75	20	82	82	23	53	53	16	46	46
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	280	1817	265	349	3351	538	376	1273	635	368	1276	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	1817	265	349	3351	538	376	1273	635	368	1276	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	280	1817	265	349	3351	538	376	1273	635	368	1276	161
User Adj:	1.00	0.84	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	1526	265	349	2748	538	376	1273	635	368	1276	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	1526	265	349	2748	538	376	1273	635	368	1276	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	280	1526	265	349	2748	538	376	1273	635	368	1276	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.83	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4731	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.15	0.11	0.58	0.31	0.12	0.22	0.36	0.12	0.22	0.09
Crit Moves:	****				****			****			****	
Green Time:	13.9	82.0	100.2	22.8	90.8	114.6	23.8	53.0	66.9	18.3	47.5	70.3
Volume/Cap:	1.20	0.61	0.28	0.92	1.20	0.50	0.94	0.79	1.02	1.20	0.89	0.25
Uniform Del:	87.0	40.8	24.1	81.7	48.6	20.7	81.5	62.4	60.5	84.9	67.6	40.6
IncremntDel:	124.5	0.5	0.2	26.1	95.4	0.4	31.2	2.8	41.1	117.9	7.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.17	1.28	1.09	1.62	2.04	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	211.6	48.2	31.2	115.3	174	42.6	112.7	65.2	101.7	202.8	74.6	40.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	211.6	48.2	31.2	115.3	174	42.6	112.7	65.2	101.7	202.8	74.6	40.8
LOS by Move:	F	D	C	F	F	D	F	E	F	F	E	D
HCM2kAvgQ:	16	24	11	11	68	27	12	21	40	20	26	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



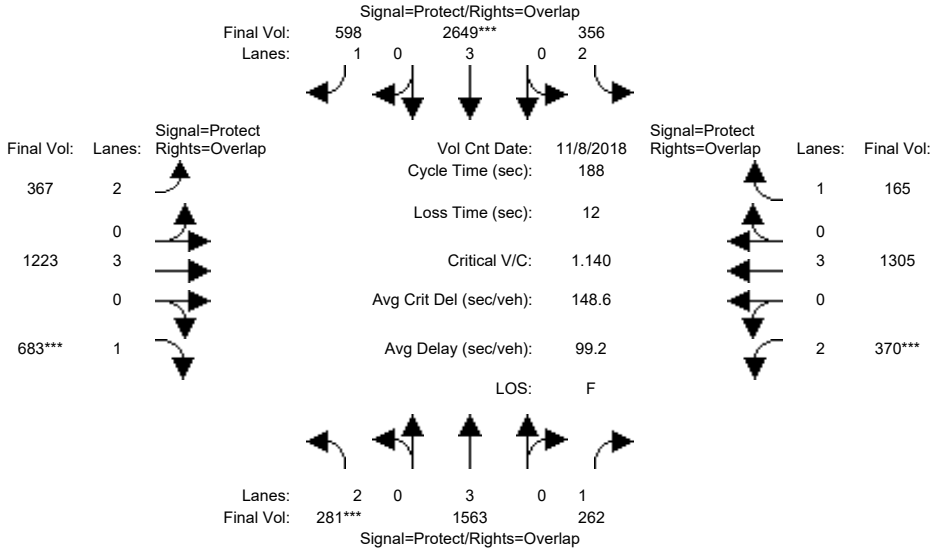
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 28 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	870	5444	210	185	2509	418	673	1028	296	246	1617	243
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	870	5444	210	185	2509	418	673	1028	296	246	1617	243
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	870	5444	210	185	2509	418	673	1028	296	246	1617	243
User Adj:	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	870	4627	210	185	2133	418	673	1028	296	246	1617	243
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	870	4627	210	185	2133	418	673	1028	296	246	1617	243
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	870	4627	210	185	2133	418	673	1028	296	246	1617	243
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.81	0.12	0.06	0.37	0.24	0.21	0.18	0.17	0.08	0.28	0.14
Crit Moves:		****			****			****			****	
Green Time:	19.3	97.2	111.1	12.3	90.2	116.6	26.4	47.1	66.4	13.9	34.5	46.8
Volume/Cap:	2.75	1.60	0.21	0.91	0.80	0.39	1.55	0.74	0.49	1.08	1.58	0.57
Uniform Del:	86.4	47.4	19.3	89.3	43.1	19.4	82.8	66.7	49.4	89.0	78.8	63.8
IncremntDel:	795.5	273	0.1	40.3	1.7	0.2	260.9	2.1	0.6	81.1	266	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	881.9	321	19.4	129.6	44.8	19.7	343.7	68.8	50.1	170.1	345	65.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	881.9	321	19.4	129.6	44.8	19.7	343.7	68.8	50.1	170.1	345	65.6
LOS by Move:	F	F	B-	F	D	B-	F	E	D	F	F	E
HCM2kAvgQ:	71	157	6	7	33	13	41	18	14	13	56	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5416: SAN TOMAS EXPWY/EL CAMINO REAL



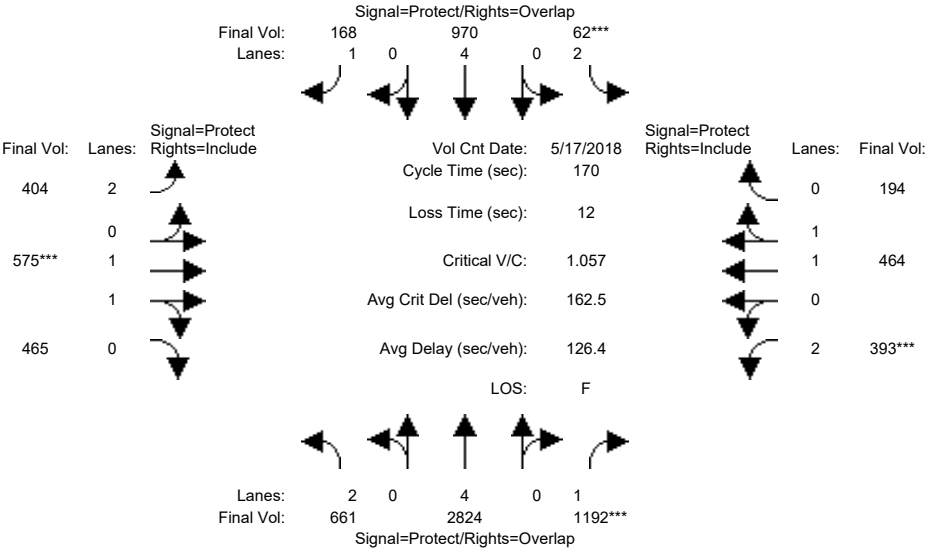
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	13	75	75	20	82	82	23	53	53	16	46	46
Y+R:	5.7	5.8	5.8	5.7	5.8	5.8	5.9	5.6	5.6	6.0	5.6	5.6
Volume Module: >> Count Date: 8 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	281	1861	262	356	3230	598	367	1223	683	370	1305	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	281	1861	262	356	3230	598	367	1223	683	370	1305	165
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	281	1861	262	356	3230	598	367	1223	683	370	1305	165
User Adj:	1.00	0.84	1.00	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	281	1563	262	356	2649	598	367	1223	683	370	1305	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	281	1563	262	356	2649	598	367	1223	683	370	1305	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	281	1563	262	356	2649	598	367	1223	683	370	1305	165
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.83	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	4731	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.15	0.11	0.56	0.34	0.12	0.21	0.39	0.12	0.23	0.09
Crit Moves:	****				****				****	****		
Green Time:	14.7	83.4	102.7	23.6	92.3	115.3	23.0	53.0	67.7	19.4	46.0	69.6
Volume/Cap:	1.14	0.62	0.27	0.90	1.14	0.56	0.95	0.76	1.08	1.14	0.94	0.25
Uniform Del:	86.6	40.1	22.7	81.0	47.9	21.4	82.0	61.7	60.1	84.3	69.6	41.2
IncremntDel:	100.5	0.5	0.2	22.7	68.9	0.7	33.6	2.2	60.6	93.6	11.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.18	1.30	1.10	1.64	2.06	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	187.1	47.7	29.8	111.5	148	44.6	115.5	63.9	120.8	177.9	81.5	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	187.1	47.7	29.8	111.5	148	44.6	115.5	63.9	120.8	177.9	81.5	41.4
LOS by Move:	F	D	C	F	F	D	F	E	F	F	F	D
HCM2kAvgQ:	15	25	11	11	60	31	12	20	47	19	28	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



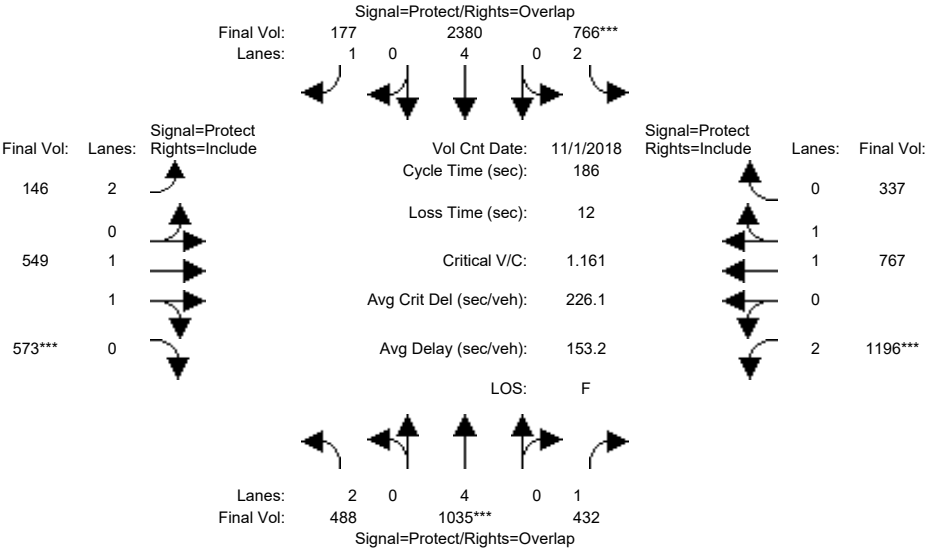
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	71	71	16	69	69	23	38	38	23	38	38
Y+R:	5.5	6.2	6.2	5.7	6.2	6.2	5.0	5.8	5.8	5.6	5.3	5.3
Volume Module: >> Count Date: 17 May 2018 << 7:55 AM - 8:55 AM												
Base Vol:	661	2824	1192	62	970	168	404	575	465	393	464	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	661	2824	1192	62	970	168	404	575	465	393	464	194
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	661	2824	1192	62	970	168	404	575	465	393	464	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	661	2824	1192	62	970	168	404	575	465	393	464	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	661	2824	1192	62	970	168	404	575	465	393	464	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	661	2824	1192	62	970	168	404	575	465	393	464	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95	0.83	0.98	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.08	0.92	2.00	1.39	0.61
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	2044	1653	3150	2608	1091
Capacity Analysis Module:												
Vol/Sat:	0.21	0.37	0.68	0.02	0.13	0.10	0.13	0.28	0.28	0.12	0.18	0.18
Crit Moves:			****	****				****		****		
Green Time:	17.7	70.9	93.6	15.5	68.9	92.1	23.2	37.4	37.4	22.7	38.0	38.0
Volume/Cap:	2.02	0.89	1.24	0.22	0.31	0.18	0.94	1.28	1.28	0.93	0.80	0.80
Uniform Del:	76.2	46.0	38.2	71.6	34.5	19.7	72.7	66.3	66.3	72.9	62.3	62.3
IncremntDel:	467.7	3.6	115.7	0.4	0.1	0.1	28.6	135	134.7	28.0	5.4	5.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	543.9	49.5	153.9	72.0	34.5	19.8	101.3	201	201.0	101.0	67.7	67.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	543.9	49.5	153.9	72.0	34.5	19.8	101.3	201	201.0	101.0	67.7	67.7
LOS by Move:	F	D	F	E	C-	B-	F	F	F	F	E	E
HCM2kAvgQ:	44	33	93	2	10	6	14	42	42	12	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



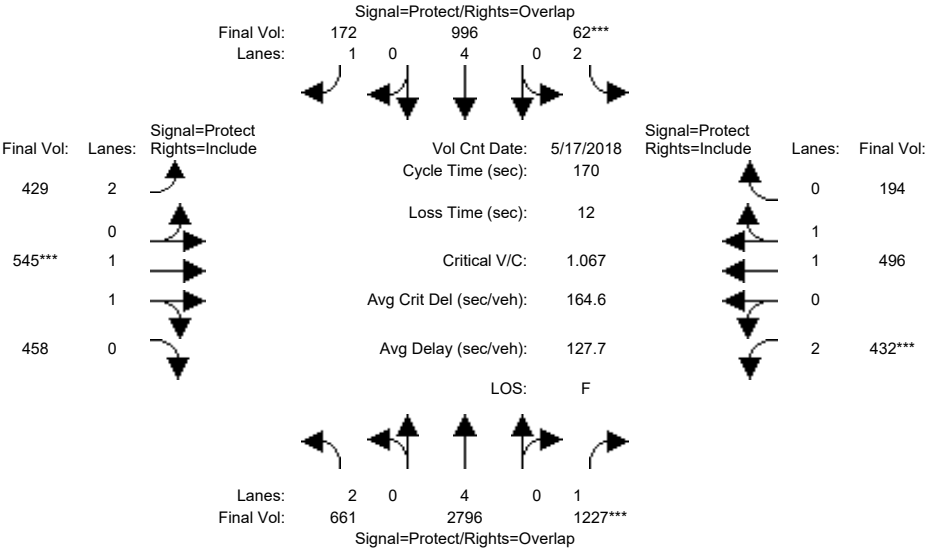
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	52	52	25	58	58	39	46	46	37	44	44
Y+R:	7.1	6.2	6.2	7.1	6.2	6.2	7.0	6.1	6.1	7.1	6.2	6.2
Volume Module: >> Count Date: 1 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	488	1035	432	766	2380	177	146	549	573	1196	767	337
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	488	1035	432	766	2380	177	146	549	573	1196	767	337
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	488	1035	432	766	2380	177	146	549	573	1196	767	337
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	488	1035	432	766	2380	177	146	549	573	1196	767	337
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	488	1035	432	766	2380	177	146	549	573	1196	767	337
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	488	1035	432	766	2380	177	146	549	573	1196	767	337
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.00	1.00	2.00	1.37	0.63
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	1900	1750	3150	2570	1129
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.25	0.24	0.31	0.10	0.05	0.29	0.33	0.38	0.30	0.30
Crit Moves:		****		****					****	****		
Green Time:	27.0	52.0	98.3	29.7	54.6	93.6	39.0	46.0	46.0	46.3	53.3	53.3
Volume/Cap:	1.07	0.49	0.47	1.52	1.07	0.20	0.22	1.17	1.32	1.52	1.04	1.04
Uniform Del:	79.5	55.9	27.4	78.2	65.7	25.5	60.9	70.0	70.0	69.8	66.3	66.3
IncremntDel:	60.8	0.2	0.4	246.0	39.5	0.1	0.2	87.1	154.0	242.5	38.9	38.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	140.2	56.1	27.8	324.1	105	25.6	61.1	157	224.0	312.3	105	105.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	140.2	56.1	27.8	324.1	105	25.6	61.1	157	224.0	312.3	105	105.2
LOS by Move:	F	E+	C	F	F	C	E	F	F	F	F	F
HCM2kAvgQ:	20	13	20	46	42	7	4	40	52	68	33	33

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



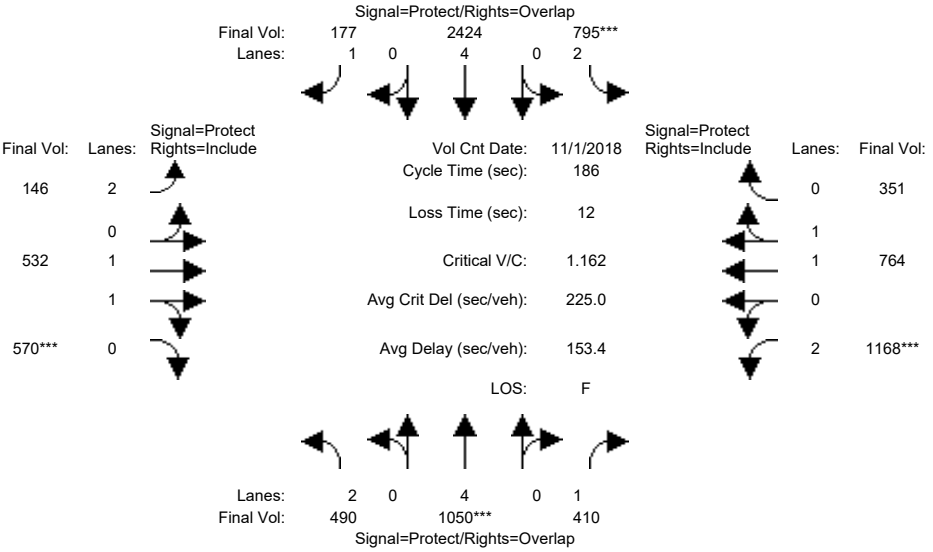
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	71	71	16	69	69	23	38	38	23	38	38
Y+R:	5.5	6.2	6.2	5.7	6.2	6.2	5.0	5.8	5.8	5.6	5.3	5.3
Volume Module: >> Count Date: 17 May 2018 << 7:55 AM - 8:55 AM												
Base Vol:	661	2796	1227	62	996	172	429	545	458	432	496	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	661	2796	1227	62	996	172	429	545	458	432	496	194
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	661	2796	1227	62	996	172	429	545	458	432	496	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	661	2796	1227	62	996	172	429	545	458	432	496	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	661	2796	1227	62	996	172	429	545	458	432	496	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	661	2796	1227	62	996	172	429	545	458	432	496	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.95	0.83	0.98	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.06	0.94	2.00	1.42	0.58
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	2009	1688	3150	2659	1040
Capacity Analysis Module:												
Vol/Sat:	0.21	0.37	0.70	0.02	0.13	0.10	0.14	0.27	0.27	0.14	0.19	0.19
Crit Moves:			****	****				****		****		
Green Time:	17.7	70.9	93.6	15.5	68.9	92.1	23.2	37.4	37.4	22.7	38.0	38.0
Volume/Cap:	2.02	0.88	1.27	0.22	0.32	0.18	1.00	1.23	1.23	1.03	0.83	0.83
Uniform Del:	76.2	45.7	38.2	71.6	34.6	19.8	73.4	66.3	66.3	73.7	63.0	63.0
IncremntDel:	467.7	3.2	131.2	0.4	0.1	0.1	42.8	115	115.5	51.0	7.4	7.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	543.9	48.9	169.4	72.0	34.7	19.9	116.1	182	181.8	124.7	70.4	70.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	543.9	48.9	169.4	72.0	34.7	19.9	116.1	182	181.8	124.7	70.4	70.4
LOS by Move:	F	D	F	E	C-	B-	F	F	F	F	E	E
HCM2kAvgQ:	44	32	99	2	10	6	16	39	39	14	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5603: LAWRENCE EXPWY/TASMAN DR



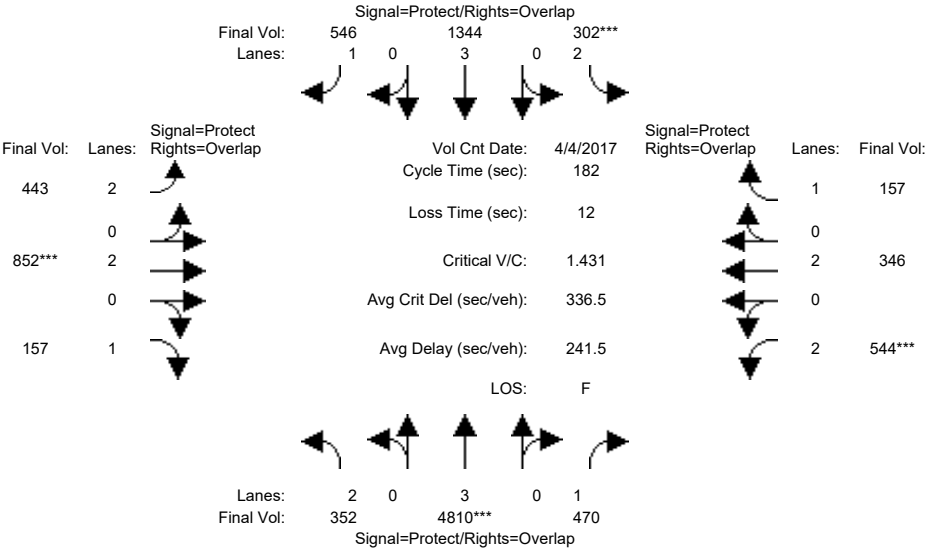
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	52	52	25	58	58	39	46	46	37	44	44
Y+R:	7.1	6.2	6.2	7.1	6.2	6.2	7.0	6.1	6.1	7.1	6.2	6.2
Volume Module: >> Count Date: 1 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	490	1050	410	795	2424	177	146	532	570	1168	764	351
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	490	1050	410	795	2424	177	146	532	570	1168	764	351
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	490	1050	410	795	2424	177	146	532	570	1168	764	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	490	1050	410	795	2424	177	146	532	570	1168	764	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	490	1050	410	795	2424	177	146	532	570	1168	764	351
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	490	1050	410	795	2424	177	146	532	570	1168	764	351
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	1.00	1.00	2.00	1.35	0.65
Final Sat.:	3150	7600	1750	3150	7600	1750	3150	1900	1750	3150	2534	1164
Capacity Analysis Module:												
Vol/Sat:	0.16	0.14	0.23	0.25	0.32	0.10	0.05	0.28	0.33	0.37	0.30	0.30
Crit Moves:		****		****					****	****		
Green Time:	27.1	52.0	97.2	30.8	55.6	94.6	39.0	46.0	46.0	45.2	52.2	52.2
Volume/Cap:	1.07	0.49	0.45	1.53	1.07	0.20	0.22	1.13	1.32	1.53	1.07	1.07
Uniform Del:	79.4	56.0	27.7	77.6	65.2	25.0	60.9	70.0	70.0	70.4	66.9	66.9
IncremntDel:	60.7	0.2	0.4	245.9	39.4	0.1	0.2	72.5	151.1	243.0	49.9	49.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	140.2	56.2	28.0	323.6	105	25.1	61.1	142	221.1	313.3	117	116.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	140.2	56.2	28.0	323.6	105	25.1	61.1	142	221.1	313.3	117	116.8
LOS by Move:	F	E+	C	F	F	C	E	F	F	F	F	F
HCM2kAvgQ:	20	13	18	48	43	7	4	37	51	67	35	35

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



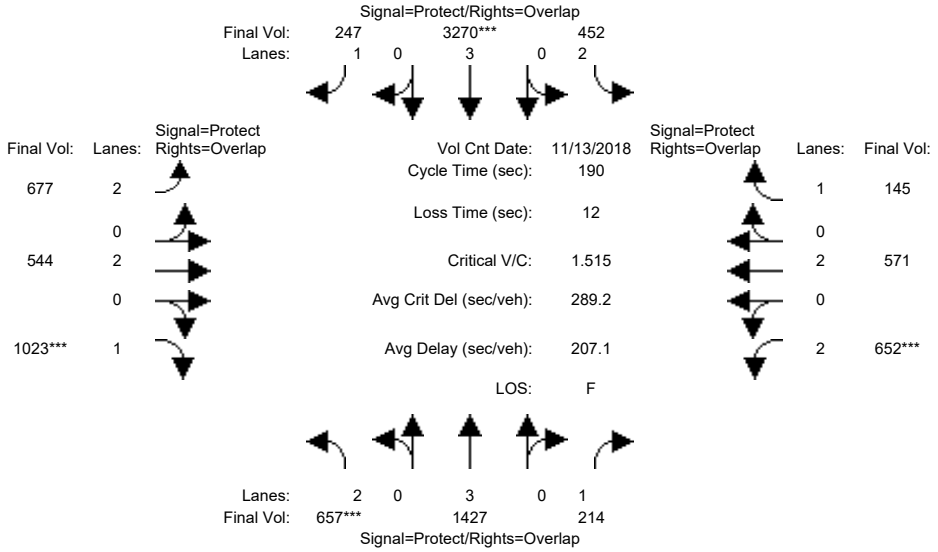
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	352	5529	470	302	1545	546	443	852	157	544	346	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	352	5529	470	302	1545	546	443	852	157	544	346	157
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	352	5529	470	302	1545	546	443	852	157	544	346	157
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	352	4810	470	302	1344	546	443	852	157	544	346	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	352	4810	470	302	1344	546	443	852	157	544	346	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	352	4810	470	302	1344	546	443	852	157	544	346	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.84	0.27	0.10	0.24	0.31	0.14	0.22	0.10	0.17	0.09	0.09
Crit Moves:		****		****				****		****		
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.87	1.63	0.45	1.02	0.49	0.55	1.64	1.28	0.32	2.10	0.53	0.34
Uniform Del:	77.8	44.0	20.0	82.4	32.2	24.9	83.2	75.0	48.9	83.5	68.6	53.9
IncremntDel:	17.9	287	0.3	57.5	0.1	0.7	304.6	137	0.4	506.1	0.8	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	95.7	342	28.2	139.9	25.7	16.9	387.8	212	49.3	589.6	69.5	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	95.7	342	28.2	139.9	25.7	16.9	387.8	212	49.3	589.6	69.5	54.3
LOS by Move:	F	F	C	F	C	B	F	F	D	F	E	D-
HCM2kAvgQ:	14	161	20	12	13	14	27	34	7	39	8	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



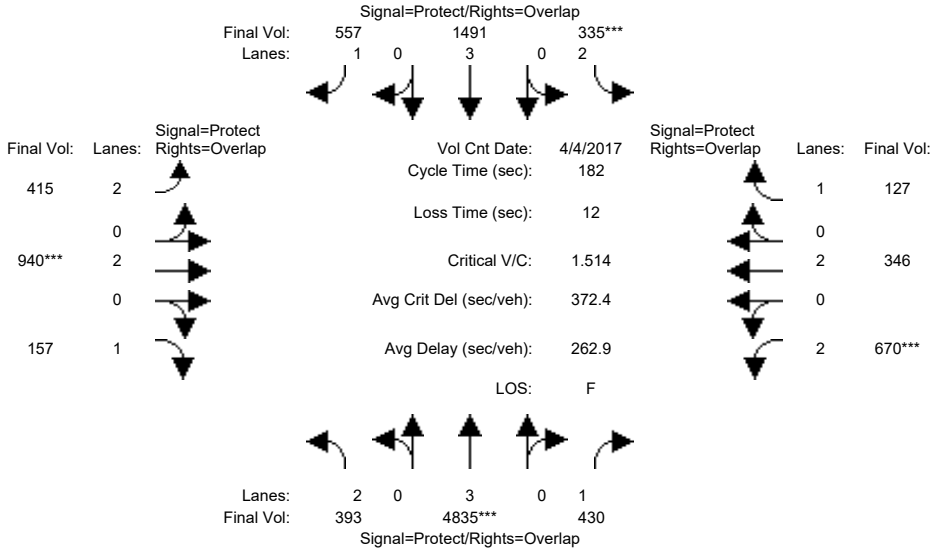
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	657	2130	214	452	4087	247	677	544	1023	652	571	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	657	2130	214	452	4087	247	677	544	1023	652	571	145
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	657	2130	214	452	4087	247	677	544	1023	652	571	145
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	657	1427	214	452	3270	247	677	544	1023	652	571	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	657	1427	214	452	3270	247	677	544	1023	652	571	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	657	1427	214	452	3270	247	677	544	1023	652	571	145
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.25	0.12	0.14	0.57	0.14	0.21	0.14	0.64	0.21	0.15	0.08
Crit Moves:	****				****				****	****		
Green Time:	24.4	86.0	110.2	17.4	79.0	112.6	33.6	50.4	74.8	24.2	41.0	58.4
Volume/Cap:	1.62	0.55	0.21	1.57	1.38	0.24	1.22	0.54	1.62	1.62	0.70	0.27
Uniform Del:	82.8	38.0	19.1	86.3	55.5	18.4	78.2	59.9	57.6	82.9	68.8	49.7
IncremntDel:	291.7	0.3	0.1	270.9	174	0.1	112.8	0.6	287.8	291.7	2.6	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.38	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	374.4	31.9	11.9	357.1	237	25.5	191.0	60.5	345.4	374.6	71.4	50.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	374.4	31.9	11.9	357.1	237	25.5	191.0	60.5	345.4	374.6	71.4	50.0
LOS by Move:	F	C	B+	F	F	C	F	E	F	F	E	D
HCM2kAvgQ:	42	16	4	27	95	9	33	13	114	41	15	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



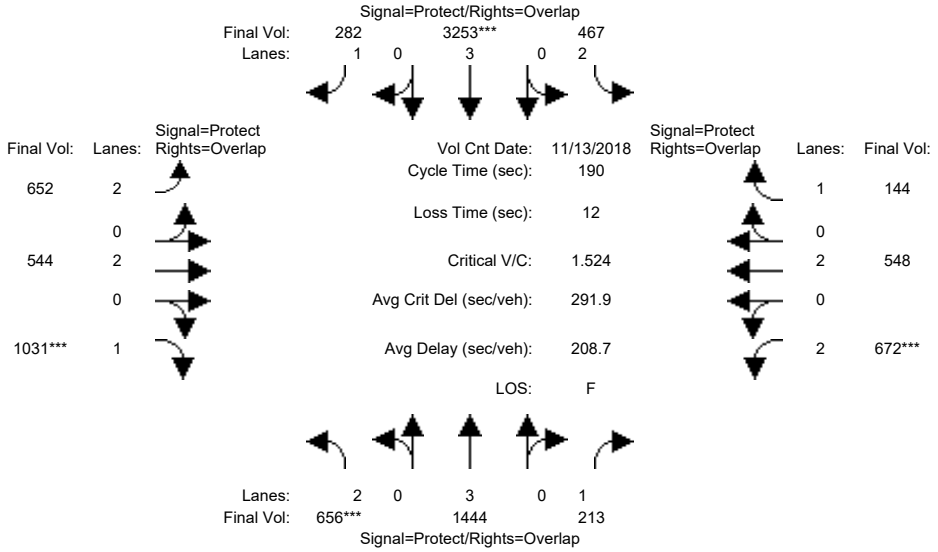
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	94	94	17	88	88	16	32	32	15	31	31
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 4 Apr 2017 << 7:45 AM - 8:45 AM												
Base Vol:	393	5557	430	335	1714	557	415	940	157	670	346	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	393	5557	430	335	1714	557	415	940	157	670	346	127
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	393	5557	430	335	1714	557	415	940	157	670	346	127
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	393	4835	430	335	1491	557	415	940	157	670	346	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	393	4835	430	335	1491	557	415	940	157	670	346	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	393	4835	430	335	1491	557	415	940	157	670	346	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.85	0.25	0.11	0.26	0.32	0.13	0.25	0.10	0.21	0.09	0.07
Crit Moves:		****		****				****		****		
Green Time:	23.4	94.0	109.0	17.1	87.4	103.0	15.6	31.9	55.3	15.0	31.3	48.4
Volume/Cap:	0.97	1.64	0.41	1.13	0.54	0.56	1.54	1.41	0.32	2.58	0.53	0.27
Uniform Del:	78.9	44.0	19.4	82.4	33.3	25.2	83.2	75.0	48.9	83.5	68.6	52.9
IncremntDel:	36.8	291	0.3	92.6	0.2	0.7	259.6	194	0.4	722.7	0.8	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.26	1.39	1.00	0.80	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	115.7	346	27.3	175.0	26.7	17.1	342.8	269	49.3	806.2	69.5	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.7	346	27.3	175.0	26.7	17.1	342.8	269	49.3	806.2	69.5	53.2
LOS by Move:	F	F	C	F	C	B	F	F	D	F	E	D-
HCM2kAvgQ:	17	163	18	15	15	14	24	42	7	52	8	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5611: LAWRENCE EXPWY/ARQUES AVE



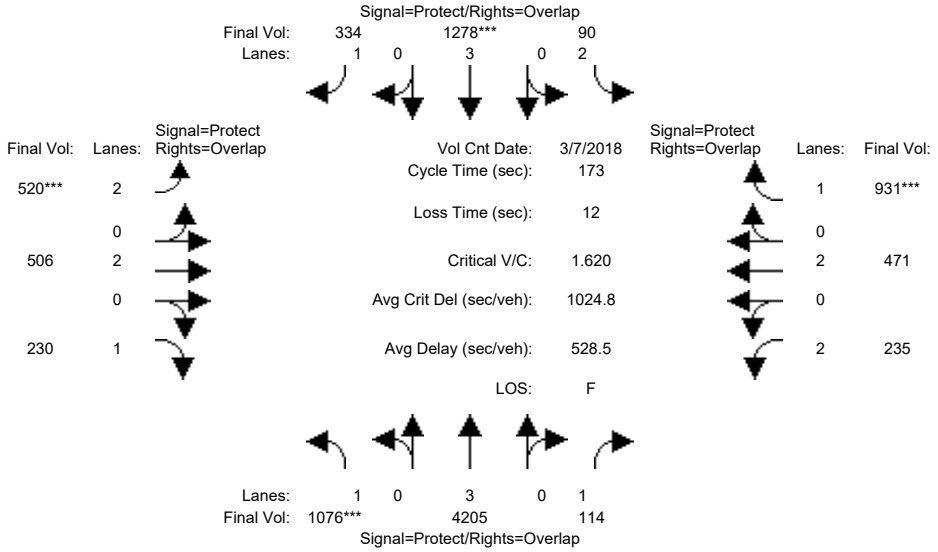
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	86	86	15	79	79	24	41	41	24	41	41
Y+R:	6.3	6.2	6.2	6.1	6.2	6.2	5.9	5.7	5.7	5.9	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:30 - 5:30 PM												
Base Vol:	656	2155	213	467	4066	282	652	544	1031	672	548	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	656	2155	213	467	4066	282	652	544	1031	672	548	144
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	656	2155	213	467	4066	282	652	544	1031	672	548	144
User Adj:	1.00	0.67	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	656	1444	213	467	3253	282	652	544	1031	672	548	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	656	1444	213	467	3253	282	652	544	1031	672	548	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	656	1444	213	467	3253	282	652	544	1031	672	548	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.84	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1601	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.25	0.12	0.15	0.57	0.16	0.21	0.14	0.64	0.21	0.14	0.08
Crit Moves:	****				****				****	****		
Green Time:	24.1	86.0	110.6	17.1	79.0	112.9	33.9	50.3	74.4	24.6	41.0	58.1
Volume/Cap:	1.65	0.56	0.21	1.65	1.37	0.27	1.16	0.54	1.65	1.65	0.67	0.27
Uniform Del:	83.0	38.1	18.9	86.5	55.5	18.6	78.0	59.9	57.8	82.7	68.3	49.9
IncremntDel:	301.4	0.3	0.1	308.7	170	0.1	89.9	0.6	297.5	301.1	2.1	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.83	0.62	1.00	1.15	1.38	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	384.4	32.0	11.7	395.2	234	25.9	167.9	60.5	355.3	383.8	70.4	50.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	384.4	32.0	11.7	395.2	234	25.9	167.9	60.5	355.3	383.8	70.4	50.2
LOS by Move:	F	C-	B+	F	F	C	F	E	F	F	E	D
HCM2kAvgQ:	43	16	4	29	94	11	30	13	116	42	14	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5613: LAWRENCE EXPWY/REED AVE



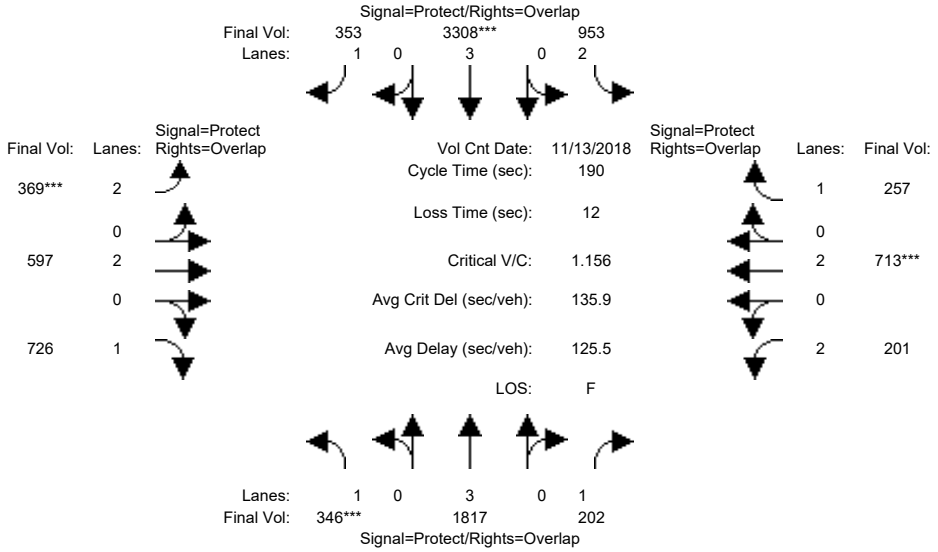
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	1076	4833	114	90	1469	334	520	506	230	235	471	931
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1076	4833	114	90	1469	334	520	506	230	235	471	931
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1076	4833	114	90	1469	334	520	506	230	235	471	931
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1076	4205	114	90	1278	334	520	506	230	235	471	931
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1076	4205	114	90	1278	334	520	506	230	235	471	931
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1076	4205	114	90	1278	334	520	506	230	235	471	931
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.61	0.74	0.07	0.03	0.22	0.19	0.17	0.13	0.13	0.07	0.12	0.53
Crit Moves:	****				****		****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	7.54	1.59	0.12	0.37	0.49	0.32	1.24	0.60	0.43	0.75	0.66	2.01
Uniform Del:	79.5	46.3	17.5	76.0	32.4	17.6	75.0	60.3	48.2	75.7	65.1	63.6
IncremntDel:	2959	265	0.1	1.0	0.1	0.2	125.4	1.2	0.6	9.4	2.3	463.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	3039	303	11.4	77.0	26.8	10.5	200.4	61.5	48.8	85.1	67.4	527.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	3039	303	11.4	77.0	26.8	10.5	200.4	61.5	48.8	85.1	67.4	527.4
LOS by Move:	F	F	B+	E-	C	B+	F	E	D	F	E	F
HCM2kAvgQ:	183	132	2	3	12	5	24	12	10	7	11	113

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5613: LAWRENCE EXPWY/REED AVE



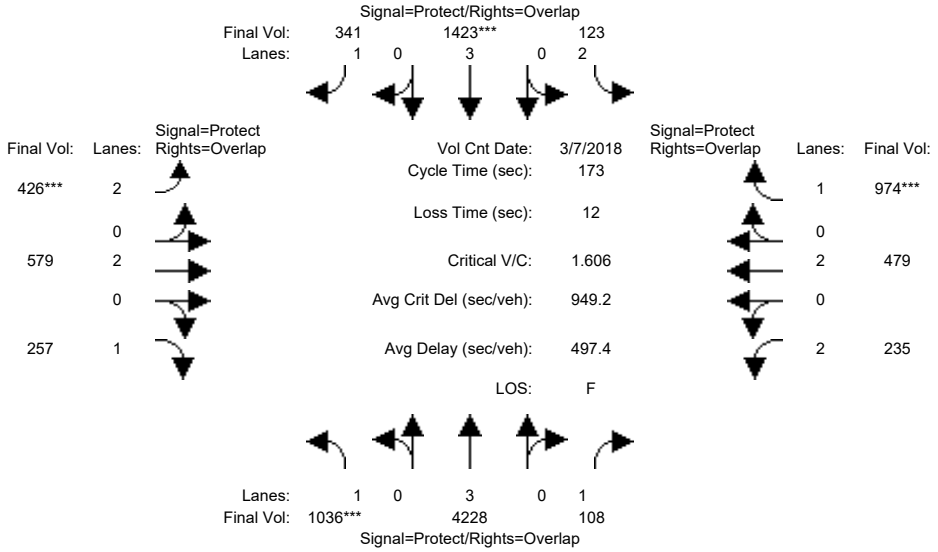
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	346	2243	202	953	4595	353	369	597	726	201	713	257
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	346	2243	202	953	4595	353	369	597	726	201	713	257
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	346	2243	202	953	4595	353	369	597	726	201	713	257
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	346	1817	202	953	3308	353	369	597	726	201	713	257
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	346	1817	202	953	3308	353	369	597	726	201	713	257
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	346	1817	202	953	3308	353	369	597	726	201	713	257
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.32	0.12	0.30	0.58	0.20	0.12	0.16	0.41	0.06	0.19	0.15
Crit Moves:	****				****		****				****	
Green Time:	27.6	90.0	104.0	37.6	100	116.4	16.4	36.4	64.0	14.0	34.0	71.6
Volume/Cap:	1.36	0.67	0.21	1.53	1.10	0.33	1.36	0.82	1.23	0.87	1.05	0.39
Uniform Del:	81.2	38.6	22.0	76.2	45.0	17.9	86.8	73.7	63.0	87.1	78.0	43.2
IncremntDel:	185.2	0.7	0.1	245.5	52.0	0.2	183.9	7.4	118.5	27.1	47.9	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.01	1.27	1.42	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	266.4	31.8	15.2	322.2	109	25.6	270.7	81.1	181.5	114.2	126	43.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	266.4	31.8	15.2	322.2	109	25.6	270.7	81.1	181.5	114.2	126	43.6
LOS by Move:	F	C	B	F	F	C	F	F	F	F	F	D
HCM2kAvgQ:	33	22	4	55	72	14	20	17	63	8	25	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5613: LAWRENCE EXPWY/REED AVE



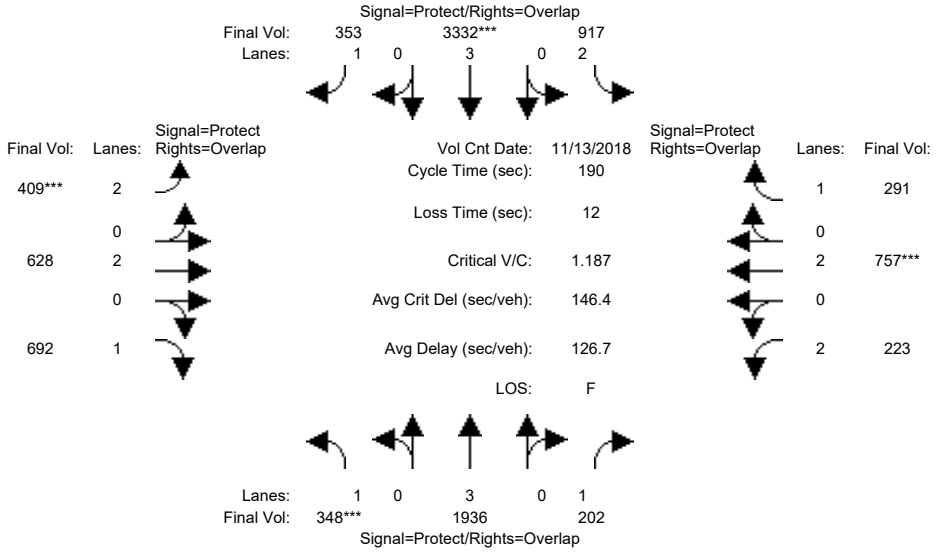
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	81	81	13	80	80	23	39	39	17	33	33
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 7 Mar 2018 << 8:00 AM - 9:00 AM												
Base Vol:	1036	4860	108	123	1636	341	426	579	257	235	479	974
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1036	4860	108	123	1636	341	426	579	257	235	479	974
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1036	4860	108	123	1636	341	426	579	257	235	479	974
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1036	4228	108	123	1423	341	426	579	257	235	479	974
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1036	4228	108	123	1423	341	426	579	257	235	479	974
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1036	4228	108	123	1423	341	426	579	257	235	479	974
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.59	0.74	0.06	0.04	0.25	0.19	0.14	0.15	0.15	0.07	0.13	0.56
Crit Moves:	****				****		****					****
Green Time:	14.1	80.5	97.8	13.2	79.7	102.8	23.1	38.5	52.6	17.3	32.5	45.7
Volume/Cap:	7.26	1.59	0.11	0.51	0.54	0.33	1.01	0.68	0.48	0.75	0.67	2.11
Uniform Del:	79.5	46.3	17.4	76.8	33.5	17.7	75.0	61.7	49.1	75.7	65.3	63.6
IncremntDel:	2833	269	0.0	1.9	0.2	0.2	47.2	2.3	0.7	9.4	2.5	505.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.82	0.65	1.00	0.82	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	2913	307	11.4	78.7	27.8	10.6	122.2	64.0	49.8	85.1	67.8	568.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	2913	307	11.4	78.7	27.8	10.6	122.2	64.0	49.8	85.1	67.8	568.9
LOS by Move:	F	F	B+	E-	C	B+	F	E	D	F	E	F
HCM2kAvgQ:	175	134	2	4	14	6	16	14	12	7	11	121

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5613: LAWRENCE EXPWY/REED AVE



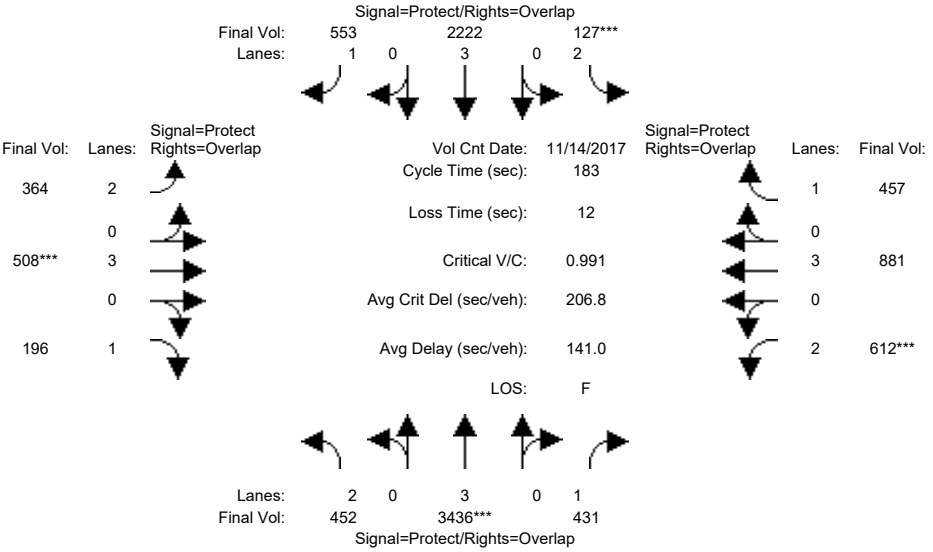
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	90	90	27	100	100	15	35	35	14	34	34
Y+R:	6.0	6.2	6.2	6.1	6.2	6.2	5.7	5.6	5.6	5.6	5.7	5.7
Volume Module: >> Count Date: 13 Nov 2018 << 4:45 - 5:45 PM												
Base Vol:	348	2390	202	917	4628	353	409	628	692	223	757	291
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	348	2390	202	917	4628	353	409	628	692	223	757	291
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	348	2390	202	917	4628	353	409	628	692	223	757	291
User Adj:	1.00	0.81	1.00	1.00	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	348	1936	202	917	3332	353	409	628	692	223	757	291
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	348	1936	202	917	3332	353	409	628	692	223	757	291
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	348	1936	202	917	3332	353	409	628	692	223	757	291
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.34	0.12	0.29	0.58	0.20	0.13	0.17	0.40	0.07	0.20	0.17
Crit Moves:	****				****		****				****	
Green Time:	26.6	90.0	104.0	36.6	100	117.4	17.4	37.4	64.0	14.0	34.0	70.6
Volume/Cap:	1.42	0.72	0.21	1.51	1.11	0.33	1.42	0.84	1.17	0.96	1.11	0.45
Uniform Del:	81.7	39.9	22.0	76.7	45.0	17.4	86.3	73.4	63.0	87.7	78.0	45.0
IncremntDel:	210.9	0.9	0.1	238.2	55.3	0.2	207.9	8.4	95.3	47.7	69.9	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.69	1.00	1.27	1.43	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	292.6	33.0	15.2	315.2	113	25.1	294.2	81.9	158.3	135.5	148	45.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	292.6	33.0	15.2	315.2	113	25.1	294.2	81.9	158.3	135.5	148	45.5
LOS by Move:	F	C-	B	F	F	C	F	F	F	F	F	D
HCM2kAvgQ:	35	24	4	53	73	14	23	18	57	9	28	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



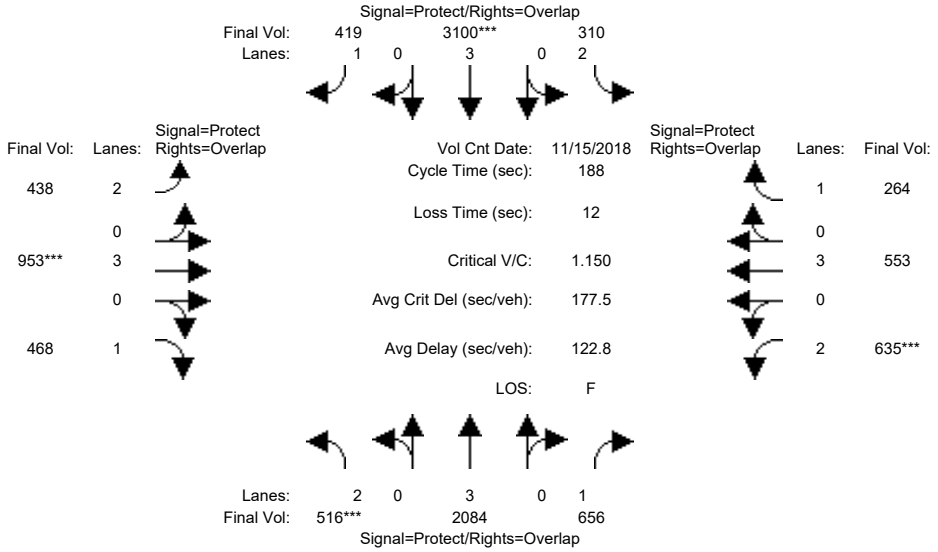
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	85	85	13	80	80	15	40	40	21	46	46
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	452	3949	431	127	2554	553	364	508	196	612	881	457
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	452	3949	431	127	2554	553	364	508	196	612	881	457
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	452	3949	431	127	2554	553	364	508	196	612	881	457
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	452	3436	431	127	2222	553	364	508	196	612	881	457
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	452	3436	431	127	2222	553	364	508	196	612	881	457
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	452	3436	431	127	2222	553	364	508	196	612	881	457
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.60	0.25	0.04	0.39	0.32	0.12	0.09	0.11	0.19	0.15	0.26
Crit Moves:		****		****				****		****		
Green Time:	17.6	85.1	105.7	12.5	79.5	94.3	14.8	40.4	58.0	20.6	46.1	58.6
Volume/Cap:	1.49	1.30	0.43	0.59	0.90	0.61	1.43	0.40	0.35	1.73	0.61	0.82
Uniform Del:	82.7	49.0	21.7	82.8	48.0	31.4	84.1	61.0	48.1	81.2	60.6	57.2
IncremntDel:	238.0	136	0.3	4.3	4.8	1.3	214.0	0.2	0.4	338.1	0.8	9.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.20	1.35	1.00	0.86	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	320.7	195	29.6	87.1	45.9	24.6	298.1	61.2	48.5	419.3	61.4	66.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	320.7	195	29.6	87.1	45.9	24.6	298.1	61.2	48.5	419.3	61.4	66.3
LOS by Move:	F	F	C	F	D	C	F	E	D	F	E	E
HCM2kAvgQ:	25	91	18	4	35	17	20	8	9	40	15	27

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



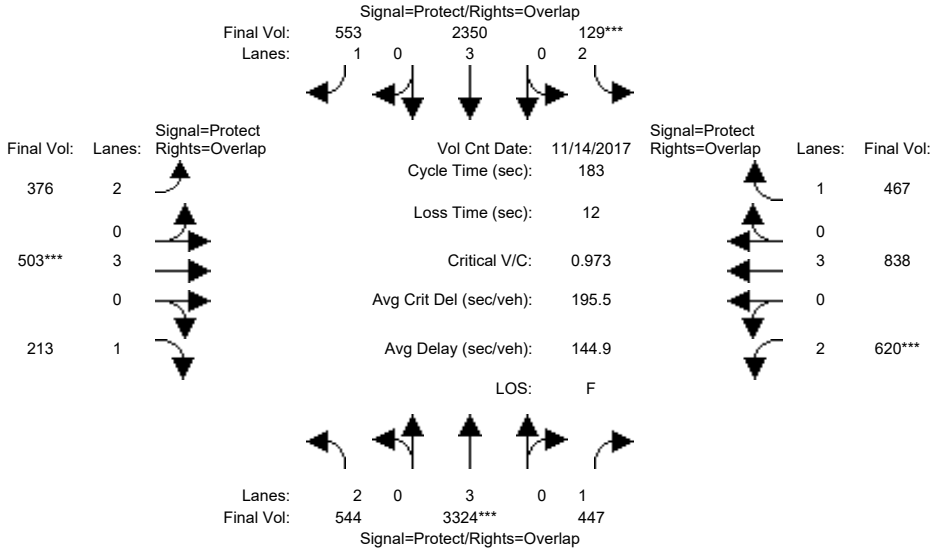
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	85	85	20	91	91	22	42	42	17	37	37
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	516	2707	656	310	3974	419	438	953	468	635	553	264
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	516	2707	656	310	3974	419	438	953	468	635	553	264
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	516	2707	656	310	3974	419	438	953	468	635	553	264
User Adj:	1.00	0.77	1.00	1.00	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	516	2084	656	310	3100	419	438	953	468	635	553	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	516	2084	656	310	3100	419	438	953	468	635	553	264
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	516	2084	656	310	3100	419	438	953	468	635	553	264
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.37	0.37	0.10	0.54	0.24	0.14	0.17	0.27	0.20	0.10	0.15
Crit Moves:	****				****			****		****		
Green Time:	19.3	89.3	113.0	21.0	91.0	118.2	27.2	42.0	61.3	23.7	38.5	59.5
Volume/Cap:	1.60	0.77	0.62	0.88	1.12	0.38	0.96	0.75	0.82	1.60	0.47	0.48
Uniform Del:	84.4	40.9	23.9	82.3	48.5	17.0	79.9	68.1	58.3	82.1	65.8	51.7
IncremntDel:	283.1	1.4	1.2	21.8	61.0	0.2	32.1	2.5	9.2	280.5	0.3	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.08	1.60	2.00	1.08	1.63	2.13	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	373.8	66.9	49.1	110.9	140	36.5	112.0	70.6	67.5	362.6	66.1	52.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	373.8	66.9	49.1	110.9	140	36.5	112.0	70.6	67.5	362.6	66.1	52.4
LOS by Move:	F	E	D	F	F	D+	F	E	E	F	E	D-
HCM2kAvgQ:	31	36	35	10	69	20	16	17	26	40	9	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



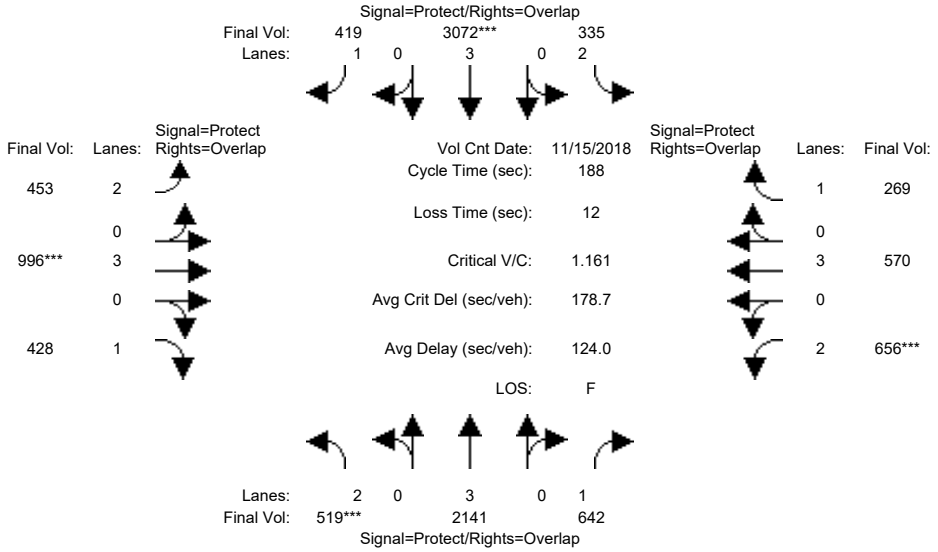
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	85	85	13	80	80	15	40	40	21	46	46
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	544	3821	447	129	2701	553	376	503	213	620	838	467
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	544	3821	447	129	2701	553	376	503	213	620	838	467
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	544	3821	447	129	2701	553	376	503	213	620	838	467
User Adj:	1.00	0.87	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	544	3324	447	129	2350	553	376	503	213	620	838	467
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	544	3324	447	129	2350	553	376	503	213	620	838	467
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	544	3324	447	129	2350	553	376	503	213	620	838	467
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.17	0.58	0.26	0.04	0.41	0.32	0.12	0.09	0.12	0.20	0.15	0.27
Crit Moves:		****		****				****		****		
Green Time:	17.6	85.1	105.7	12.5	79.5	94.3	14.8	40.4	58.0	20.6	46.1	58.6
Volume/Cap:	1.80	1.25	0.44	0.60	0.95	0.61	1.48	0.40	0.38	1.75	0.58	0.83
Uniform Del:	82.7	49.0	21.9	82.8	49.8	31.4	84.1	60.9	48.6	81.2	60.0	57.7
IncremntDel:	370.8	118	0.3	4.6	8.9	1.3	234.0	0.2	0.4	348.1	0.6	10.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.20	1.35	1.00	0.86	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	453.5	176	30.0	87.5	51.6	24.6	318.1	61.1	49.0	429.3	60.7	68.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	453.5	176	30.0	87.5	51.6	24.6	318.1	61.1	49.0	429.3	60.7	68.0
LOS by Move:	F	F	C	F	D-	C	F	E	D	F	E	E
HCM2kAvgQ:	35	85	18	4	40	17	22	8	10	41	14	28

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5625: LAWRENCE EXPWY/HOMESTEAD RD



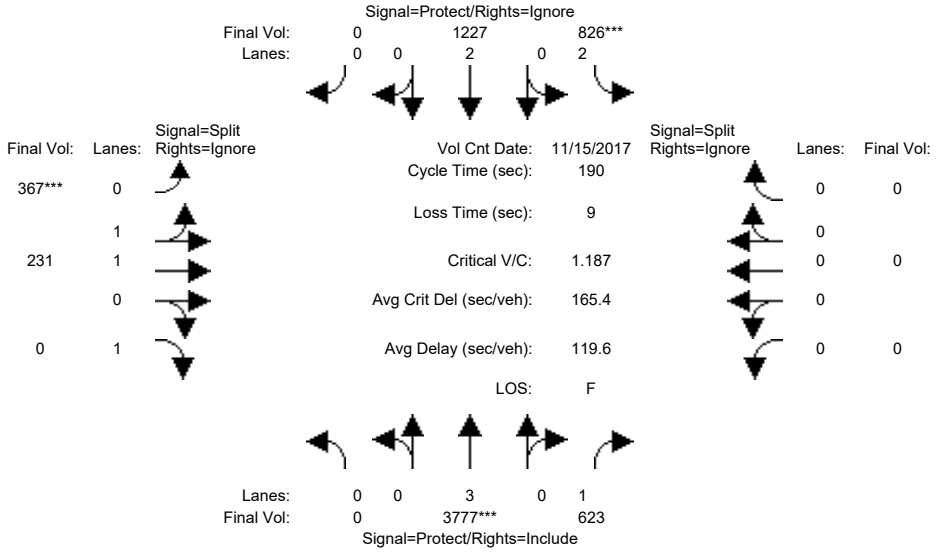
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	85	85	20	91	91	22	42	42	17	37	37
Y+R:	6.4	6.2	6.2	5.9	6.2	6.2	6.1	6.0	6.0	5.8	5.9	5.9
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	519	2780	642	335	3938	419	453	996	428	656	570	269
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	519	2780	642	335	3938	419	453	996	428	656	570	269
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	519	2780	642	335	3938	419	453	996	428	656	570	269
User Adj:	1.00	0.77	1.00	1.00	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	519	2141	642	335	3072	419	453	996	428	656	570	269
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	519	2141	642	335	3072	419	453	996	428	656	570	269
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	519	2141	642	335	3072	419	453	996	428	656	570	269
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.38	0.37	0.11	0.54	0.24	0.14	0.17	0.24	0.21	0.10	0.15
Crit Moves:	****				****			****		****		
Green Time:	19.0	89.0	113.0	21.0	91.0	118.9	27.9	42.0	61.0	24.0	38.1	59.1
Volume/Cap:	1.63	0.79	0.61	0.95	1.11	0.38	0.97	0.78	0.75	1.63	0.49	0.49
Uniform Del:	84.5	41.7	23.6	83.0	48.5	16.7	79.7	68.7	56.8	82.0	66.4	52.2
IncremntDel:	297.8	1.7	1.1	36.1	56.7	0.2	33.9	3.2	5.7	295.0	0.3	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.60	2.01	1.08	1.63	2.15	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	388.7	68.4	48.4	126.0	136	36.1	113.5	71.9	62.5	377.0	66.7	52.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	388.7	68.4	48.4	126.0	136	36.1	113.5	71.9	62.5	377.0	66.7	52.9
LOS by Move:	F	E	D	F	F	D+	F	E	E	F	E	D-
HCM2kAvgQ:	32	37	34	11	67	20	17	18	23	42	10	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



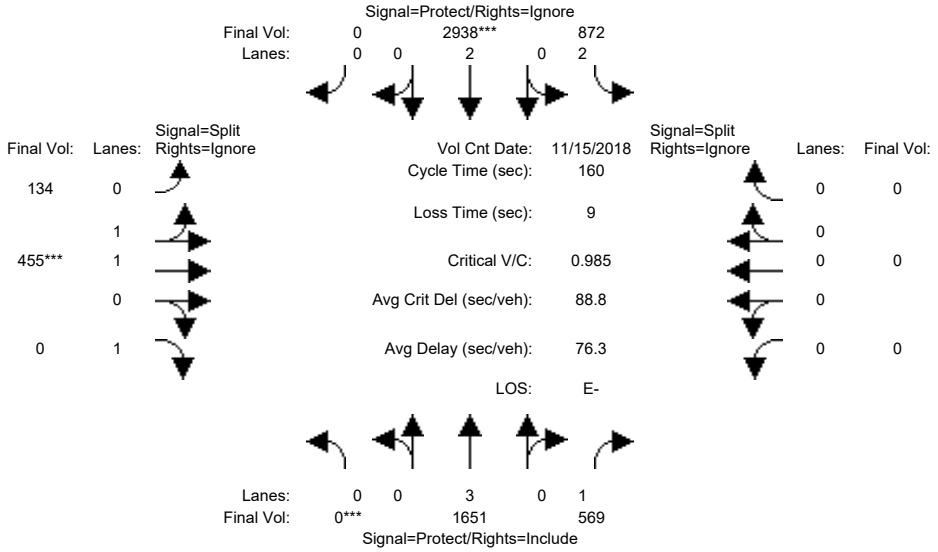
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	114	114	29	148	0	29	29	29	0	0	0
Y+R:	0.0	6.2	6.2	5.5	6.2	6.2	5.7	5.7	5.7	0.0	0.0	0.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	3777	623	826	1227	0	367	231	320	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3777	623	826	1227	0	367	231	320	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3777	623	826	1227	0	367	231	320	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	3777	623	826	1227	0	367	231	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3777	623	826	1227	0	367	231	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	3777	623	826	1227	0	367	231	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.94	1.02	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	1782	1933	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.66	0.36	0.26	0.32	0.00	0.21	0.12	0.00	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green Time:	0.0	115	114.8	29.5	149	0.0	29.3	29.3	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	1.10	0.59	1.69	0.41	0.00	1.34	0.77	0.00	0.00	0.00	0.00
Uniform Del:	0.0	37.6	23.1	80.2	6.6	0.0	80.4	77.2	0.0	0.0	0.0	0.0
IncremntDel:	0.0	48.8	0.9	318.6	0.1	0.0	165.7	4.9	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.40	1.40	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	102	33.3	398.8	0.1	0.0	246.1	82.1	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	102	33.3	398.8	0.1	0.0	246.1	82.1	0.0	0.0	0.0	0.0
LOS by Move:	A	F	C-	F	A	A	F	F	A	A	A	A
HCM2kAvgQ:	0	88	29	54	1	0	35	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



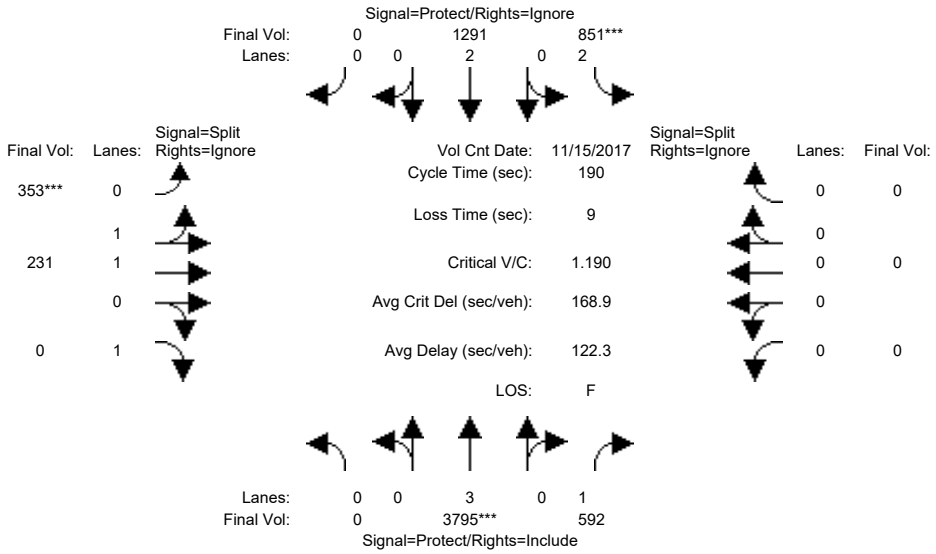
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	67	67	44	110	0	49	49	49	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	1651	569	872	2938	0	134	455	1596	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1651	569	872	2938	0	134	455	1596	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1651	569	872	2938	0	134	455	1596	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1651	569	872	2938	0	134	455	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1651	569	872	2938	0	134	455	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1651	569	872	2938	0	134	455	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.95	0.98	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	0.47	1.53	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	842	2858	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.33	0.28	0.77	0.00	0.16	0.16	0.00	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	0.0	63.4	63.4	41.7	105	0.0	46.4	46.4	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.73	0.82	1.06	1.18	0.00	0.55	0.55	0.00	0.00	0.00	0.00
Uniform Del:	0.0	43.3	45.6	62.5	29.0	0.0	50.7	50.7	0.0	0.0	0.0	0.0
IncremntDel:	0.0	1.2	7.7	49.6	84.3	0.0	0.6	0.6	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.90	0.90	1.00	0.42	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.2	48.7	112.1	96.3	0.0	51.3	51.3	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.2	48.7	112.1	96.3	0.0	51.3	51.3	0.0	0.0	0.0	0.0
LOS by Move:	A	D	D	F	F	A	D-	D-	A	A	A	A
HCM2kAvgQ:	0	22	28	35	102	0	13	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



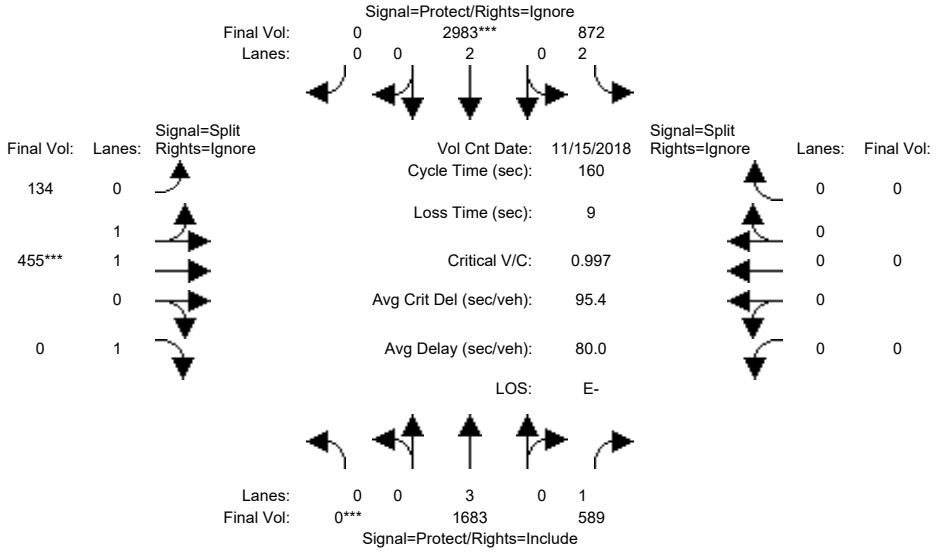
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	114	114	29	148	0	29	29	29	0	0	0
Y+R:	0.0	6.2	6.2	5.5	6.2	6.2	5.7	5.7	5.7	0.0	0.0	0.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	0	3795	592	851	1291	0	353	231	302	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3795	592	851	1291	0	353	231	302	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3795	592	851	1291	0	353	231	302	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	3795	592	851	1291	0	353	231	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3795	592	851	1291	0	353	231	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	3795	592	851	1291	0	353	231	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.94	1.02	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	1782	1933	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.67	0.34	0.27	0.34	0.00	0.20	0.12	0.00	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green Time:	0.0	115	114.8	29.5	149	0.0	29.3	29.3	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	1.10	0.56	1.74	0.43	0.00	1.28	0.77	0.00	0.00	0.00	0.00
Uniform Del:	0.0	37.6	22.5	80.2	6.8	0.0	80.4	77.2	0.0	0.0	0.0	0.0
IncremntDel:	0.0	51.0	0.7	341.3	0.1	0.0	144.1	5.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.40	1.40	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	104	32.2	421.5	0.1	0.0	224.4	82.2	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	104	32.2	421.5	0.1	0.0	224.4	82.2	0.0	0.0	0.0	0.0
LOS by Move:	A	F	C-	F	A	A	F	F	A	A	A	A
HCM2kAvgQ:	0	89	27	57	1	0	33	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #5636: LAWRENCE EXPWY/CALVERT DR (280 ON RAMP)



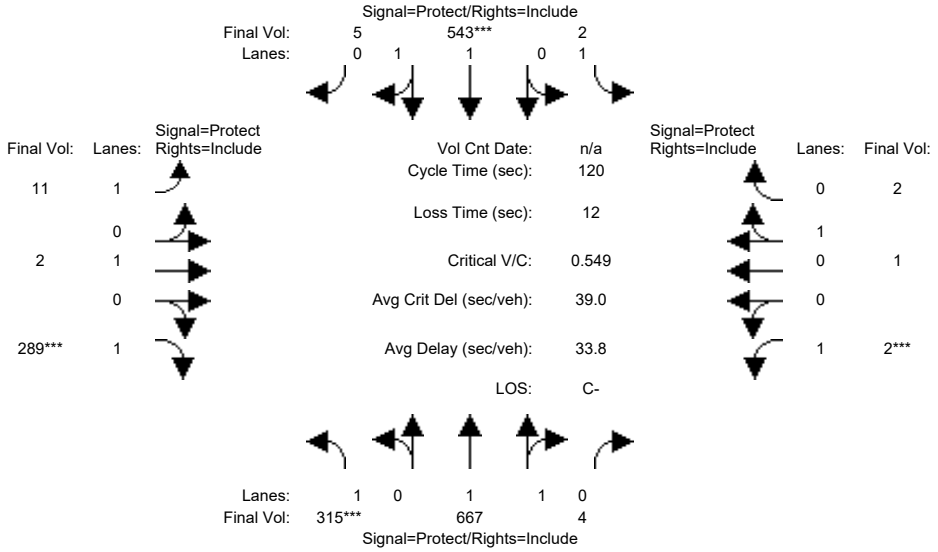
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	67	67	44	110	0	49	49	49	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	0	1683	589	872	2983	0	134	455	1578	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1683	589	872	2983	0	134	455	1578	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1683	589	872	2983	0	134	455	1578	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	1683	589	872	2983	0	134	455	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1683	589	872	2983	0	134	455	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	1683	589	872	2983	0	134	455	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.95	0.98	0.92	0.92	1.00	0.92
Lanes:	0.00	3.00	1.00	2.00	2.00	0.00	0.47	1.53	1.00	0.00	0.00	0.00
Final Sat.:	0	5700	1750	3150	3800	0	842	2858	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.34	0.28	0.79	0.00	0.16	0.16	0.00	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	0.0	63.4	63.4	41.7	105	0.0	46.4	46.4	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.74	0.85	1.06	1.20	0.00	0.55	0.55	0.00	0.00	0.00	0.00
Uniform Del:	0.0	43.7	46.4	62.5	29.0	0.0	50.7	50.7	0.0	0.0	0.0	0.0
IncremntDel:	0.0	1.4	9.7	49.6	92.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.90	0.90	1.00	0.42	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.6	51.4	112.1	104	0.0	51.3	51.3	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.6	51.4	112.1	104	0.0	51.3	51.3	0.0	0.0	0.0	0.0
LOS by Move:	A	D	D-	F	F	A	D-	D-	A	A	A	A
HCM2kAvgQ:	0	23	30	35	106	0	13	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



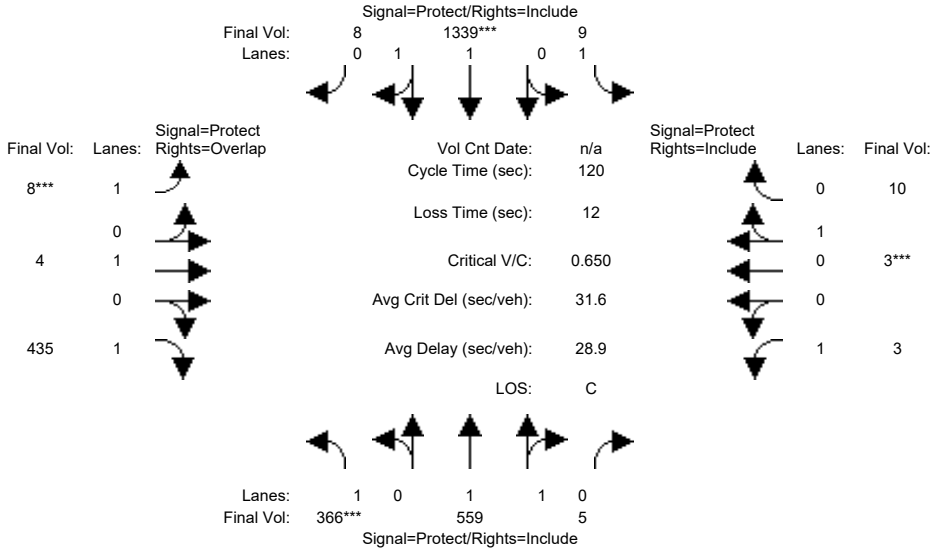
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	315	667	4	2	543	5	11	2	289	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	315	667	4	2	543	5	11	2	289	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	315	667	4	2	543	5	11	2	289	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	315	667	4	2	543	5	11	2	289	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	667	4	2	543	5	11	2	289	2	1	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	315	667	4	2	543	5	11	2	289	2	1	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.99	0.01	1.00	1.98	0.02	1.00	1.00	1.00	1.00	0.33	0.67
Final Sat.:	1750	3678	22	1750	3666	34	1750	1900	1750	1750	600	1200
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.00	0.15	0.15	0.01	0.00	0.17	0.00	0.00	0.00
Crit Moves:	****				****				****	****		
Green Time:	36.9	50.8	50.8	16.4	30.3	30.3	16.8	33.8	33.8	7.0	24.0	24.0
Volume/Cap:	0.59	0.43	0.43	0.01	0.59	0.59	0.04	0.00	0.59	0.02	0.01	0.01
Uniform Del:	35.1	24.3	24.3	44.8	39.3	39.3	44.7	31.0	37.1	53.3	38.5	38.5
IncremntDel:	1.7	0.2	0.2	0.0	1.0	1.0	0.1	0.0	1.8	0.1	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.8	24.5	24.5	44.8	40.3	40.3	44.7	31.0	38.9	53.3	38.5	38.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.8	24.5	24.5	44.8	40.3	40.3	44.7	31.0	38.9	53.3	38.5	38.5
LOS by Move:	D+	C	C	D	D	D	D	C	D+	D-	D+	D+
HCM2kAvgQ:	11	9	9	0	10	10	0	0	10	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



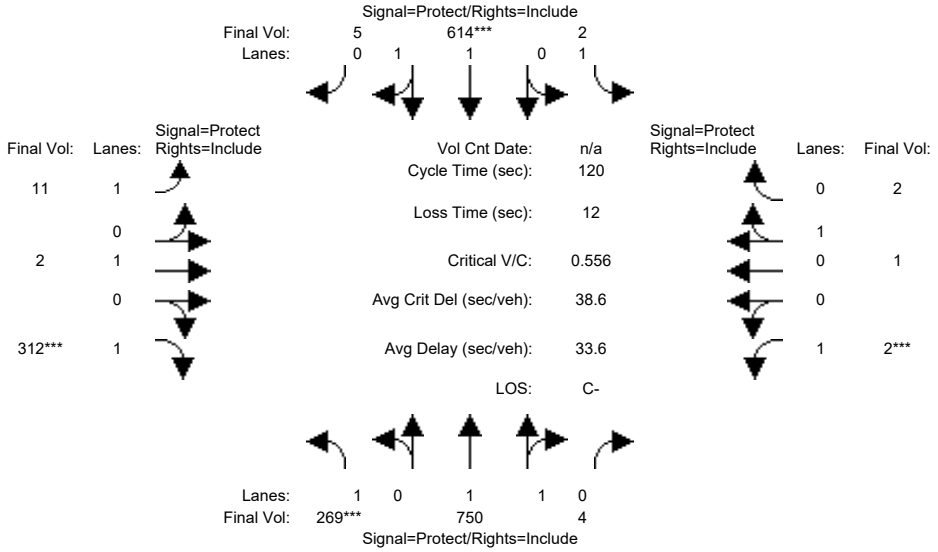
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	366	559	5	9	1339	8	8	4	435	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	366	559	5	9	1339	8	8	4	435	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	366	559	5	9	1339	8	8	4	435	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	366	559	5	9	1339	8	8	4	435	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	366	559	5	9	1339	8	8	4	435	3	3	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	366	559	5	9	1339	8	8	4	435	3	3	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.98	0.02	1.00	1.99	0.01	1.00	1.00	1.00	1.00	0.23	0.77
Final Sat.:	1750	3667	33	1750	3678	22	1750	1900	1750	1750	415	1385
Capacity Analysis Module:												
Vol/Sat:	0.21	0.15	0.15	0.01	0.36	0.36	0.00	0.00	0.25	0.00	0.01	0.01
Crit Moves:	****				****		****				****	
Green Time:	33.2	65.8	65.8	25.2	57.8	57.8	7.0	10.0	43.2	7.0	10.0	10.0
Volume/Cap:	0.76	0.28	0.28	0.02	0.76	0.76	0.08	0.03	0.69	0.03	0.09	0.09
Uniform Del:	39.7	14.4	14.4	37.7	25.4	25.4	53.4	50.5	32.7	53.3	50.8	50.8
IncremntDel:	6.7	0.1	0.1	0.0	1.9	1.9	0.3	0.1	3.3	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.4	14.5	14.5	37.7	27.3	27.3	53.8	50.6	36.0	53.4	51.0	51.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.4	14.5	14.5	37.7	27.3	27.3	53.8	50.6	36.0	53.4	51.0	51.0
LOS by Move:	D	B	B	D+	C	C	D-	D	D+	D-	D-	D-
HCM2kAvgQ:	15	6	6	0	22	22	0	0	15	0	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



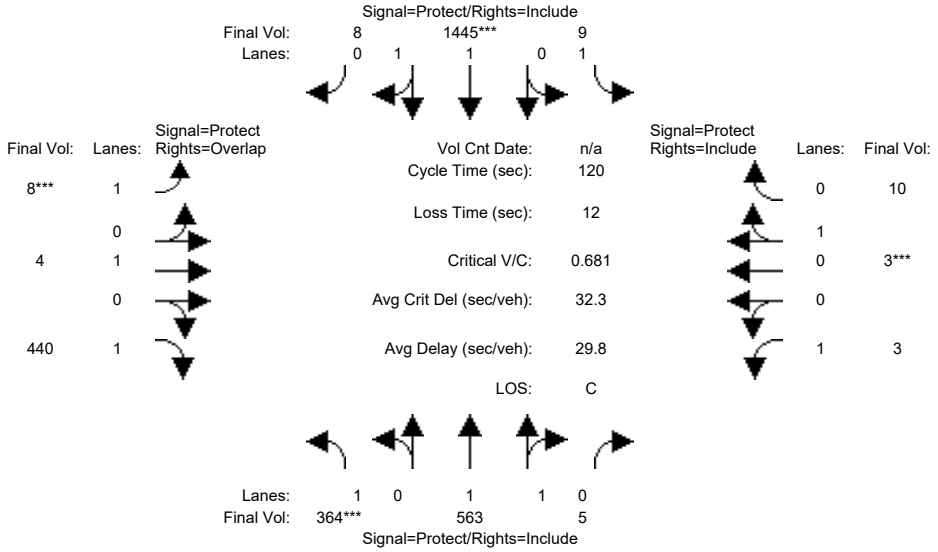
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	269	750	4	2	614	5	11	2	312	2	1	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	269	750	4	2	614	5	11	2	312	2	1	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	269	750	4	2	614	5	11	2	312	2	1	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	269	750	4	2	614	5	11	2	312	2	1	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	750	4	2	614	5	11	2	312	2	1	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	269	750	4	2	614	5	11	2	312	2	1	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.99	0.01	1.00	1.98	0.02	1.00	1.00	1.00	1.00	0.33	0.67
Final Sat.:	1750	3680	20	1750	3670	30	1750	1900	1750	1750	600	1200
Capacity Analysis Module:												
Vol/Sat:	0.15	0.20	0.20	0.00	0.17	0.17	0.01	0.00	0.18	0.00	0.00	0.00
Crit Moves:	****				****				****	****		
Green Time:	31.1	50.5	50.5	14.5	33.8	33.8	17.7	36.1	36.1	7.0	25.3	25.3
Volume/Cap:	0.59	0.48	0.48	0.01	0.59	0.59	0.04	0.00	0.59	0.02	0.01	0.01
Uniform Del:	38.9	25.3	25.3	46.5	37.1	37.1	43.9	29.4	35.7	53.3	37.4	37.4
IncremntDel:	2.1	0.2	0.2	0.0	0.9	0.9	0.1	0.0	1.8	0.1	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.0	25.5	25.5	46.5	38.1	38.1	43.9	29.4	37.5	53.3	37.4	37.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.0	25.5	25.5	46.5	38.1	38.1	43.9	29.4	37.5	53.3	37.4	37.4
LOS by Move:	D	C	C	D	D+	D+	D	C	D+	D-	D+	D+
HCM2kAvgQ:	10	10	10	0	11	11	0	0	11	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #9300: Wolfe Rd & Maude Ave (Signalized)



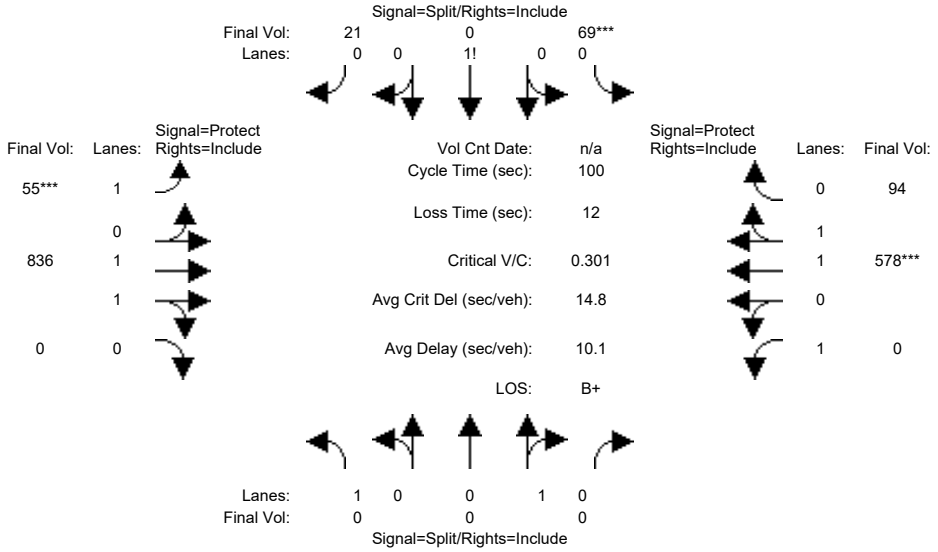
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	364	563	5	9	1445	8	8	4	440	3	3	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	364	563	5	9	1445	8	8	4	440	3	3	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	364	563	5	9	1445	8	8	4	440	3	3	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	364	563	5	9	1445	8	8	4	440	3	3	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	364	563	5	9	1445	8	8	4	440	3	3	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	364	563	5	9	1445	8	8	4	440	3	3	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	1.00	0.92	0.92	0.95	0.95
Lanes:	1.00	1.98	0.02	1.00	1.99	0.01	1.00	1.00	1.00	1.00	0.23	0.77
Final Sat.:	1750	3667	33	1750	3680	20	1750	1900	1750	1750	415	1385
Capacity Analysis Module:												
Vol/Sat:	0.21	0.15	0.15	0.01	0.39	0.39	0.00	0.00	0.25	0.00	0.01	0.01
Crit Moves:	****				****		****				****	
Green Time:	31.5	65.9	65.9	25.1	59.5	59.5	7.0	10.0	41.5	7.0	10.0	10.0
Volume/Cap:	0.79	0.28	0.28	0.02	0.79	0.79	0.08	0.03	0.73	0.03	0.09	0.09
Uniform Del:	41.2	14.4	14.4	37.8	25.1	25.1	53.4	50.5	34.3	53.3	50.8	50.8
IncremntDel:	9.1	0.1	0.1	0.0	2.4	2.4	0.3	0.1	4.4	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.3	14.5	14.5	37.8	27.6	27.6	53.8	50.6	38.7	53.4	51.0	51.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.3	14.5	14.5	37.8	27.6	27.6	53.8	50.6	38.7	53.4	51.0	51.0
LOS by Move:	D	B	B	D+	C	C	D-	D	D+	D-	D-	D-
HCM2kAvgQ:	15	6	6	0	24	24	0	0	16	0	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP AM

Intersection #9800: Commercial St & Kifer Rd (Signalized)



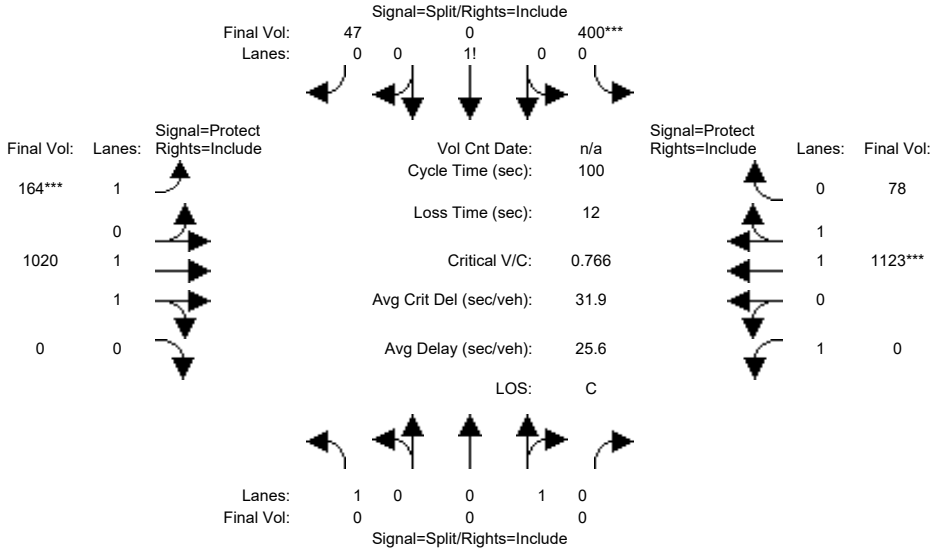
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	69	0	21	55	836	0	0	578	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	69	0	21	55	836	0	0	578	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	69	0	21	55	836	0	0	578	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	69	0	21	55	836	0	0	578	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	69	0	21	55	836	0	0	578	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	69	0	21	55	836	0	0	578	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	1.00	1.00	0.00	0.77	0.00	0.23	1.00	2.00	0.00	1.00	1.71	0.29
Final Sat.:	1750	1900	0	1342	0	408	1750	3700	0	1750	3182	517
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.05	0.03	0.23	0.00	0.00	0.18	0.18
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	17.1	0.0	17.1	10.5	70.9	0.0	0.0	60.4	60.4
Volume/Cap:	0.00	0.00	0.00	0.30	0.00	0.30	0.30	0.32	0.00	0.00	0.30	0.30
Uniform Del:	0.0	0.0	0.0	36.2	0.0	36.2	41.4	5.5	0.0	0.0	9.6	9.6
IncremntDel:	0.0	0.0	0.0	0.6	0.0	0.6	0.9	0.1	0.0	0.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	36.8	0.0	36.8	42.3	5.5	0.0	0.0	9.6	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.8	0.0	36.8	42.3	5.5	0.0	0.0	9.6	9.6
LOS by Move:	A	A	A	D+	A	D+	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	3	0	3	2	5	0	0	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative no LSAP PM

Intersection #9800: Commercial St & Kifer Rd (Signalized)



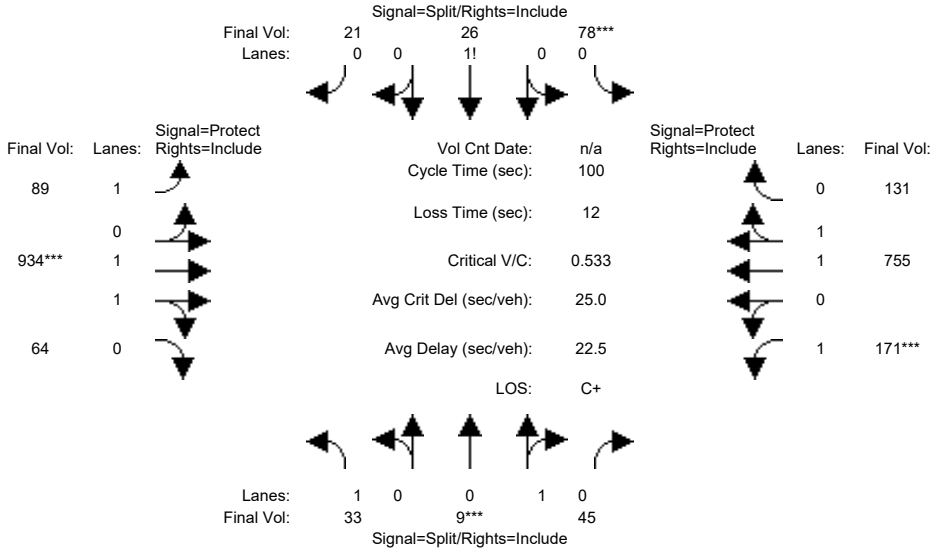
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	400	0	47	164	1020	0	0	1123	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	400	0	47	164	1020	0	0	1123	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	400	0	47	164	1020	0	0	1123	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	400	0	47	164	1020	0	0	1123	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	400	0	47	164	1020	0	0	1123	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	400	0	47	164	1020	0	0	1123	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.97	0.92	0.92	0.98	0.95
Lanes:	1.00	1.00	0.00	0.89	0.00	0.11	1.00	2.00	0.00	1.00	1.87	0.13
Final Sat.:	1750	1900	0	1566	0	184	1750	3700	0	1750	3460	240
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.26	0.09	0.28	0.00	0.00	0.32	0.32
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	33.4	0.0	33.4	12.2	54.6	0.0	0.0	42.4	42.4
Volume/Cap:	0.00	0.00	0.00	0.77	0.00	0.77	0.77	0.50	0.00	0.00	0.77	0.77
Uniform Del:	0.0	0.0	0.0	29.8	0.0	29.8	42.5	14.2	0.0	0.0	24.6	24.6
IncremntDel:	0.0	0.0	0.0	6.0	0.0	6.0	15.2	0.2	0.0	0.0	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	35.8	0.0	35.8	57.7	14.4	0.0	0.0	26.9	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.8	0.0	35.8	57.7	14.4	0.0	0.0	26.9	26.9
LOS by Move:	A	A	A	D+	A	D+	E+	B	A	A	C	C
HCM2kAvgQ:	0	0	0	15	0	15	7	10	0	0	18	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative AM

Intersection #9800: Commercial St & Kifer Rd (Signalized)



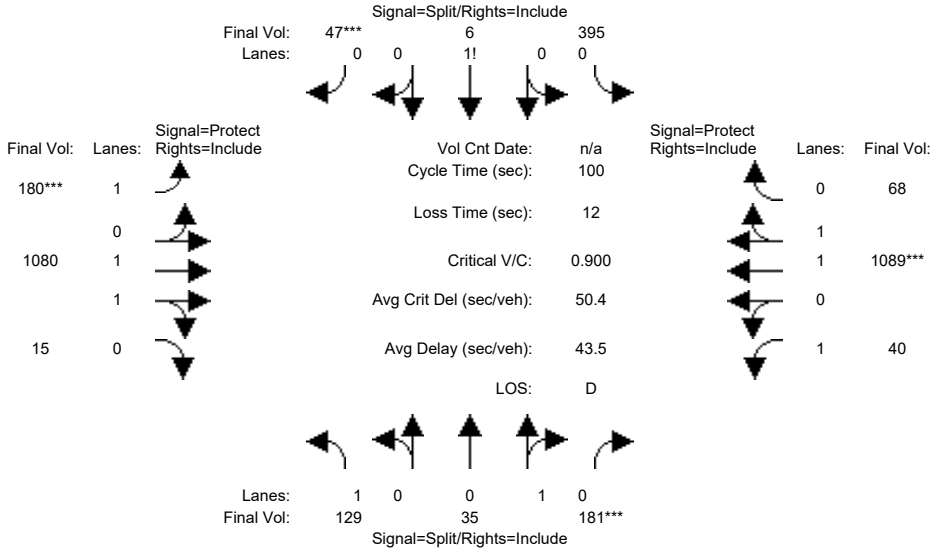
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	9	45	78	26	21	89	934	64	171	755	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	9	45	78	26	21	89	934	64	171	755	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	9	45	78	26	21	89	934	64	171	755	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	9	45	78	26	21	89	934	64	171	755	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	9	45	78	26	21	89	934	64	171	755	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	9	45	78	26	21	89	934	64	171	755	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.17	0.83	0.62	0.21	0.17	1.00	1.87	0.13	1.00	1.70	0.30
Final Sat.:	1750	300	1500	1092	364	294	1750	3463	237	1750	3153	547
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.07	0.07	0.07	0.05	0.27	0.27	0.10	0.24	0.24
Crit Moves:		****		****				****		****		
Green Time:	10.0	10.0	10.0	12.7	12.7	12.7	14.8	47.9	47.9	17.4	50.5	50.5
Volume/Cap:	0.19	0.30	0.30	0.56	0.56	0.56	0.34	0.56	0.56	0.56	0.47	0.47
Uniform Del:	41.3	41.8	41.8	41.0	41.0	41.0	38.3	18.6	18.6	37.8	16.1	16.1
IncremntDel:	0.5	0.9	0.9	3.3	3.3	3.3	0.8	0.4	0.4	2.4	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.8	42.7	42.7	44.3	44.3	44.3	39.1	19.0	19.0	40.3	16.3	16.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	42.7	42.7	44.3	44.3	44.3	39.1	19.0	19.0	40.3	16.3	16.3
LOS by Move:	D	D	D	D	D	D	D	B-	B-	D	B	B
HCM2kAvgQ:	1	2	2	5	5	5	3	11	11	6	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative PM

Intersection #9800: Commercial St & Kifer Rd (Signalized)



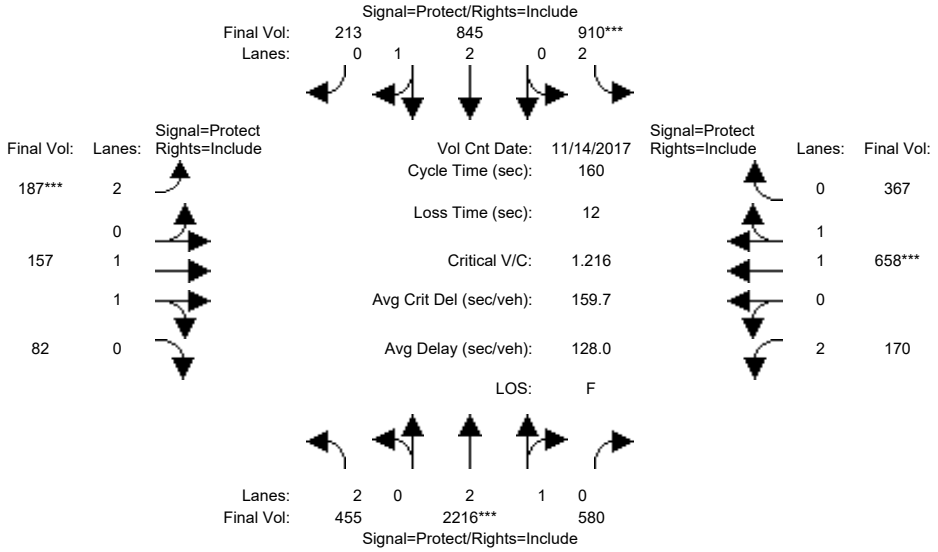
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	129	35	181	395	6	47	180	1080	15	40	1089	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	35	181	395	6	47	180	1080	15	40	1089	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	35	181	395	6	47	180	1080	15	40	1089	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	35	181	395	6	47	180	1080	15	40	1089	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	35	181	395	6	47	180	1080	15	40	1089	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	35	181	395	6	47	180	1080	15	40	1089	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	0.92	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	1.00	0.16	0.84	0.89	0.01	0.10	1.00	1.97	0.03	1.00	1.88	0.12
Final Sat.:	1750	292	1508	1543	23	184	1750	3649	51	1750	3482	217
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.12	0.26	0.26	0.26	0.10	0.30	0.30	0.02	0.31	0.31
Crit Moves:			****			****	****				****	
Green Time:	13.3	13.3	13.3	28.5	28.5	28.5	11.4	37.4	37.4	8.8	34.8	34.8
Volume/Cap:	0.55	0.90	0.90	0.90	0.90	0.90	0.90	0.79	0.79	0.26	0.90	0.90
Uniform Del:	40.5	42.7	42.7	34.4	34.4	34.4	43.7	27.9	27.9	42.5	31.0	31.0
IncremntDel:	2.9	32.7	32.7	19.1	19.1	19.1	37.1	3.2	3.2	0.9	8.8	8.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.4	75.4	75.4	53.5	53.5	53.5	80.8	31.1	31.1	43.4	39.8	39.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	75.4	75.4	53.5	53.5	53.5	80.8	31.1	31.1	43.4	39.8	39.8
LOS by Move:	D	E-	E-	D-	D-	D-	F	C	C	D	D	D
HCM2kAvgQ:	5	10	10	18	18	18	9	17	17	1	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #44: Wolfe Rd & Kifer Rd



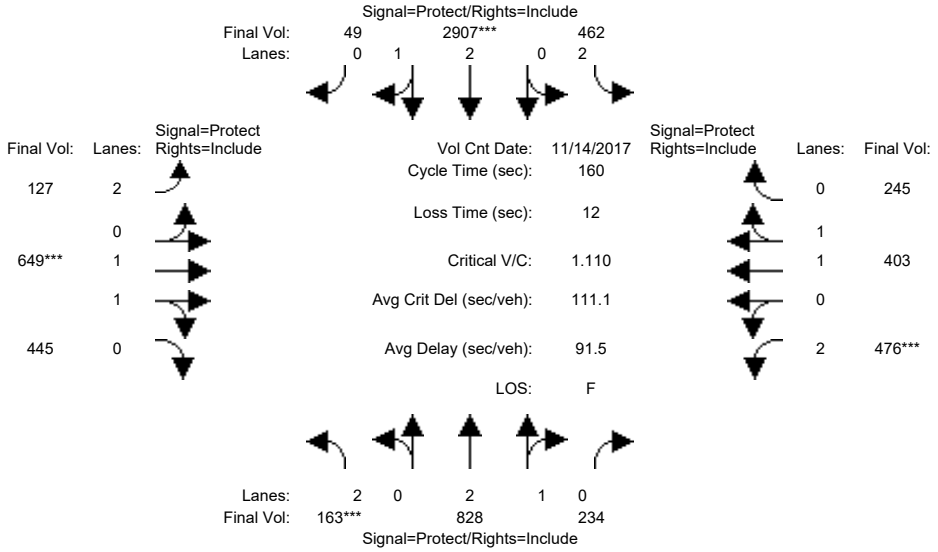
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00AM												
Base Vol:	455	2216	580	910	845	213	187	157	82	170	658	367
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	455	2216	580	910	845	213	187	157	82	170	658	367
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	455	2216	580	910	845	213	187	157	82	170	658	367
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	455	2216	580	910	845	213	187	157	82	170	658	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	455	2216	580	910	845	213	187	157	82	170	658	367
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	455	2216	580	910	845	213	187	157	82	170	658	367
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.83	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	2.35	0.65	2.00	2.37	0.63	2.00	1.30	0.70	2.00	1.26	0.74
Final Sat.:	3150	4437	1161	3150	4471	1127	3150	2430	1269	3150	2374	1324
Capacity Analysis Module:												
Vol/Sat:	0.14	0.50	0.50	0.29	0.19	0.19	0.06	0.06	0.06	0.05	0.28	0.28
Crit Moves:		****		****			****				****	
Green Time:	44.9	65.7	65.7	38.0	58.8	58.8	7.8	24.1	24.1	20.1	36.5	36.5
Volume/Cap:	0.51	1.22	1.22	1.22	0.51	0.51	1.22	0.43	0.43	0.43	1.22	1.22
Uniform Del:	48.4	47.1	47.1	61.0	39.5	39.5	76.1	61.7	61.7	64.6	61.8	61.8
IncremntDel:	0.5	101	101.4	109.3	0.2	0.2	142.3	0.5	0.5	0.7	108	108.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.9	149	148.6	170.3	39.7	39.7	218.3	62.2	62.2	65.4	170	169.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	149	148.6	170.3	39.7	39.7	218.3	62.2	62.2	65.4	170	169.8
LOS by Move:	D	F	F	F	D	D	F	E	E	E	F	F
HCM2kAvgQ:	10	64	64	39	13	13	8	5	5	4	37	37

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #44: Wolfe Rd & Kifer Rd



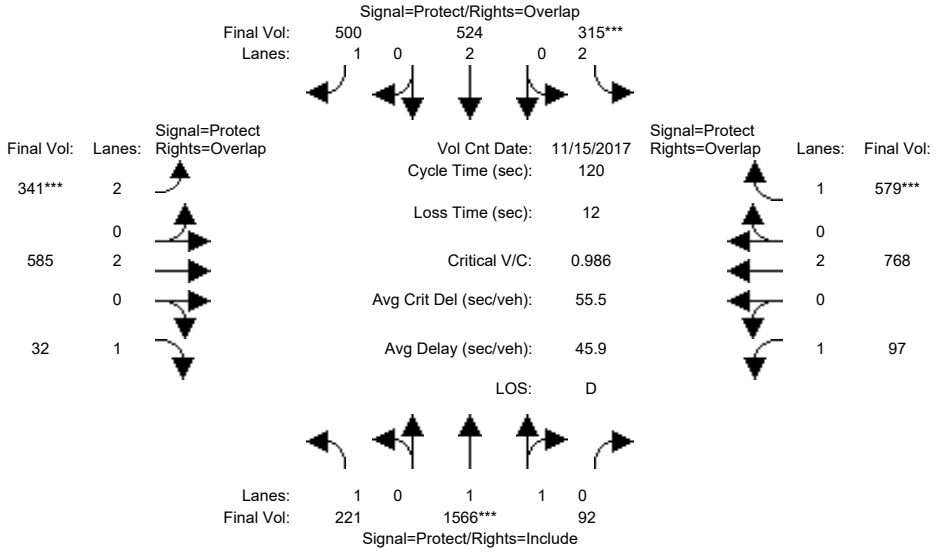
Street Name:	Wolfe Rd						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	163	828	234	462	2907	49	127	649	445	476	403	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	828	234	462	2907	49	127	649	445	476	403	245
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	828	234	462	2907	49	127	649	445	476	403	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	828	234	462	2907	49	127	649	445	476	403	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	828	234	462	2907	49	127	649	445	476	403	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	828	234	462	2907	49	127	649	445	476	403	245
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.98	0.95	0.83	0.99	0.95	0.83	0.99	0.95
Lanes:	2.00	2.31	0.69	2.00	2.95	0.05	2.00	1.16	0.84	2.00	1.22	0.78
Final Sat.:	3150	4364	1233	3150	5507	93	3150	2194	1504	3150	2300	1398
Capacity Analysis Module:												
Vol/Sat:	0.05	0.19	0.19	0.15	0.53	0.53	0.04	0.30	0.30	0.15	0.18	0.18
Crit Moves:	****				****			****			****	
Green Time:	7.5	47.1	47.1	36.4	76.1	76.1	12.9	42.6	42.6	21.8	51.6	51.6
Volume/Cap:	1.11	0.64	0.64	0.64	1.11	1.11	0.50	1.11	1.11	1.11	0.54	0.54
Uniform Del:	76.3	49.1	49.1	55.9	41.9	41.9	70.5	58.7	58.7	69.1	44.6	44.6
IncremntDel:	106.7	0.9	0.9	2.0	55.5	55.5	1.6	63.7	63.7	76.7	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	183.0	50.0	50.0	57.9	97.4	97.4	72.1	122	122.4	145.8	45.1	45.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	183.0	50.0	50.0	57.9	97.4	97.4	72.1	122	122.4	145.8	45.1	45.1
LOS by Move:	F	D	D	E+	F	F	E	F	F	F	D	D
HCM2kAvgQ:	7	15	15	12	60	60	4	36	36	18	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #84: Bowers Ave & Kifer Rd



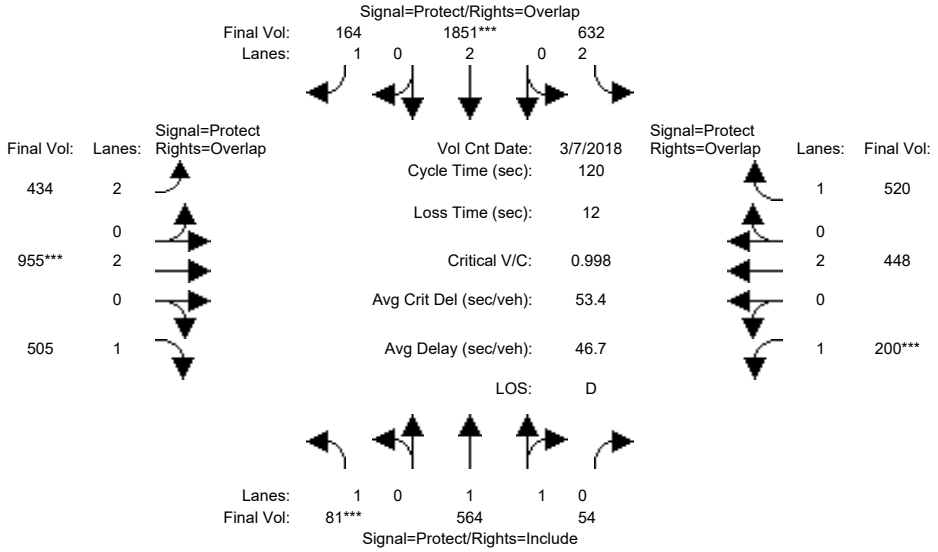
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	201	1425	84	287	477	455	310	532	29	88	699	527
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1425	84	287	477	455	310	532	29	88	699	527
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	1425	84	287	477	455	310	532	29	88	699	527
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	221	1566	92	315	524	500	341	585	32	97	768	579
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1566	92	315	524	500	341	585	32	97	768	579
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1566	92	315	524	500	341	585	32	97	768	579
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.89	0.11	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3494	206	3150	3800	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.45	0.45	0.10	0.14	0.29	0.11	0.15	0.02	0.06	0.20	0.33
Crit Moves:		****		****			****					****
Green Time:	27.7	54.6	54.6	12.2	39.0	52.2	13.2	30.4	58.1	10.9	28.1	40.3
Volume/Cap:	0.55	0.99	0.99	0.99	0.42	0.66	0.99	0.61	0.04	0.61	0.86	0.99
Uniform Del:	40.6	32.3	32.3	53.8	31.7	26.8	53.3	39.6	16.3	52.5	44.1	39.6
IncremntDel:	1.6	18.6	18.6	46.3	0.2	2.1	44.4	1.1	0.0	6.7	8.7	33.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.80	0.44	0.44	0.92	0.68	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.0	33.0	33.0	96.1	21.8	15.2	97.8	40.7	16.3	59.1	52.9	73.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	33.0	33.0	96.1	21.8	15.2	97.8	40.7	16.3	59.1	52.9	73.0
LOS by Move:	C-	C-	C-	F	C+	B	F	D	B	E+	D-	E
HCM2kAvgQ:	7	33	33	8	5	10	9	9	1	4	14	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #84: Bowers Ave & Kifer Rd



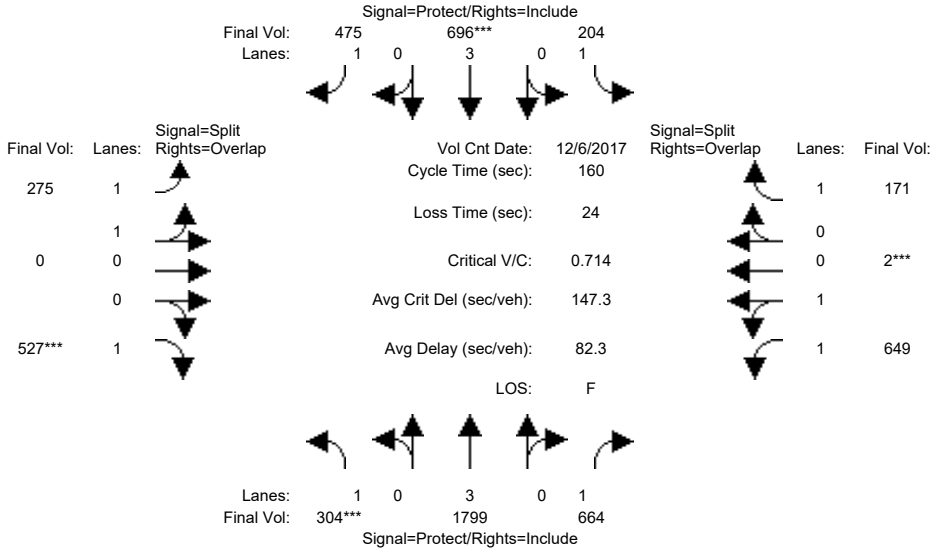
Street Name:	Bowers Ave						Kifer Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	5	10	10	8	10	10	5	5	5	5	5	5
Y+R:	4.1	5.0	5.0	4.0	5.0	5.0	4.1	4.6	4.6	4.0	5.0	5.0
Volume Module: >> Count Date: 7 Mar 2018 << 5:00 PM - 6:00 PM												
Base Vol:	80	558	53	626	1832	162	430	945	500	198	444	515
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	558	53	626	1832	162	430	945	500	198	444	515
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	558	53	626	1832	162	430	945	500	198	444	515
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	81	564	54	632	1851	164	434	955	505	200	448	520
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	564	54	632	1851	164	434	955	505	200	448	520
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	564	54	632	1851	164	434	955	505	200	448	520
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.82	0.18	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	3379	321	3150	3800	1750	3150	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.20	0.49	0.09	0.14	0.25	0.29	0.11	0.12	0.30
Crit Moves:	****				****			****			****	
Green Time:	5.5	29.1	29.1	35.0	58.5	82.2	23.7	30.2	35.7	13.7	20.3	55.3
Volume/Cap:	1.00	0.69	0.69	0.69	1.00	0.14	0.70	1.00	0.97	1.00	0.70	0.65
Uniform Del:	57.2	41.3	41.3	37.7	30.7	6.6	44.9	44.9	41.6	53.1	47.0	24.9
IncremntDel:	99.5	2.3	2.3	2.2	20.5	0.1	3.5	28.7	31.5	63.1	3.4	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.97	0.79	0.79	0.73	0.37	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	154.9	34.8	34.8	29.6	31.7	0.1	48.4	73.6	73.1	116.2	50.4	26.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	154.9	34.8	34.8	29.6	31.7	0.1	48.4	73.6	73.1	116.2	50.4	26.7
LOS by Move:	F	C-	C-	C	C	A	D	E	E	F	D	C
HCM2kAvgQ:	4	9	9	10	33	0	9	21	23	10	8	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #97: Wolfe Rd & Central Expwy Ramps



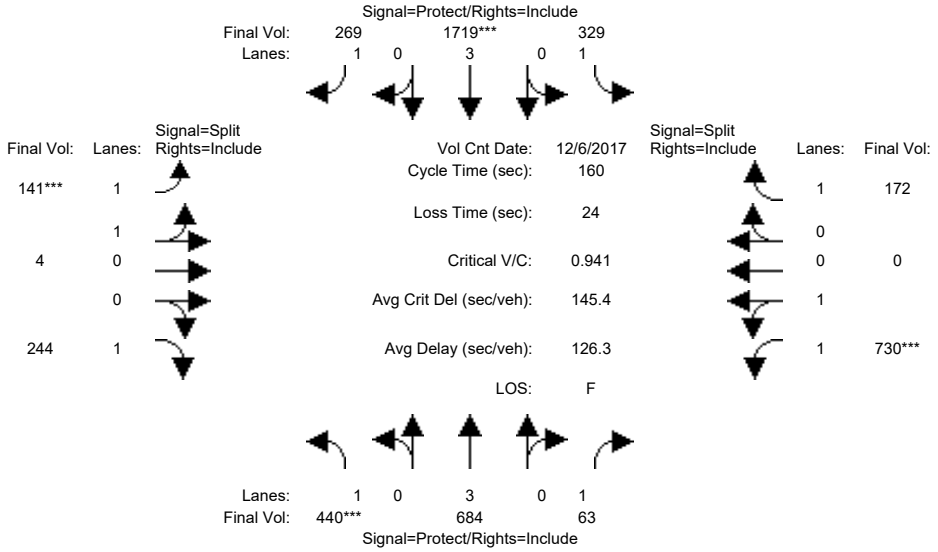
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	75	10	7	75	10	10	25	10	10	25	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2017 << 8:00 AM - 9:00 AM												
Base Vol:	304	1799	664	204	696	475	275	0	527	649	2	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	304	1799	664	204	696	475	275	0	527	649	2	171
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	304	1799	664	204	696	475	275	0	527	649	2	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	304	1799	664	204	696	475	275	0	527	649	2	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	304	1799	664	204	696	475	275	0	527	649	2	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	304	1799	664	204	696	475	275	0	527	649	2	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.93	1.00	0.92	0.93	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.99	0.01	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3550	0	1750	3539	11	1750
Capacity Analysis Module:												
Vol/Sat:	0.17	0.32	0.38	0.12	0.12	0.27	0.08	0.00	0.30	0.18	0.18	0.10
Crit Moves:	****				****				****		****	
Green Time:	20.8	76.7	76.7	19.1	75.0	75.0	15.2	0.0	36.0	25.0	25.0	44.1
Volume/Cap:	1.34	0.66	0.79	0.98	0.26	0.58	0.81	0.00	1.34	1.17	1.17	0.35
Uniform Del:	69.6	31.7	34.9	70.3	25.7	31.0	71.0	0.0	62.0	67.5	67.5	46.5
IncremntDel:	179.0	0.6	5.2	55.8	0.1	1.0	14.0	0.0	168.6	96.0	96.0	0.5
InitQueuDel:	0.0	4.0	0.0	41.8	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.80	0.80	1.00	0.81	0.81	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	248.6	29.8	33.0	167.8	25.0	26.2	85.0	0.0	230.6	163.5	163	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	248.6	29.8	33.0	167.8	25.0	26.2	85.0	0.0	230.6	163.5	163	47.0
LOS by Move:	F	C	C-	F	C	C	F	A	F	F	F	D
HCM2kAvgQ:	28	18	27	15	5	15	9	0	47	26	26	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #97: Wolfe Rd & Central Expwy Ramps



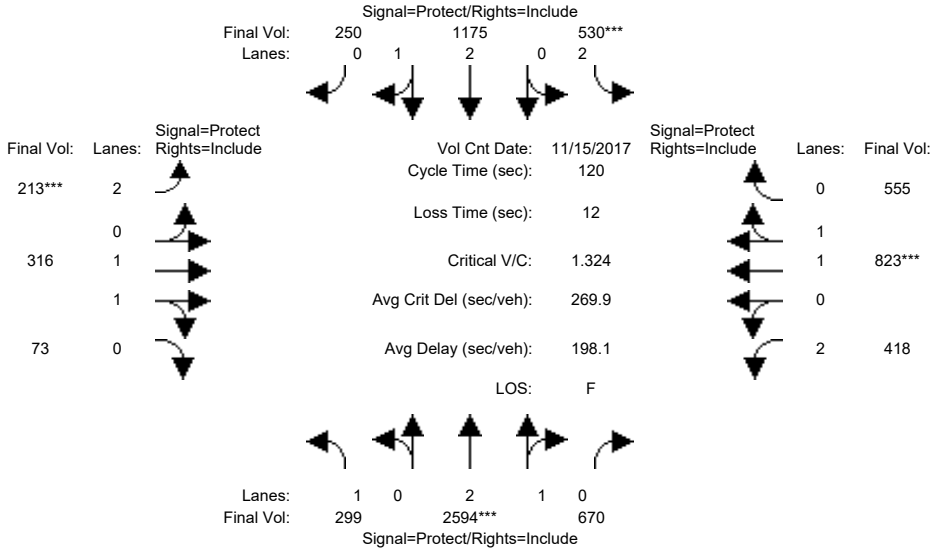
Street Name:	Wolfe Rd						Central Expwy Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	60	60	10	60	60	30	30	30	25	25	25
Y+R:	6.1	6.1	6.1	5.0	6.1	6.1	6.1	6.1	6.1	5.9	5.9	5.9
Volume Module: >> Count Date: 6 Dec 2017 << 5:00 PM - 6:00 PM												
Base Vol:	440	684	63	329	1719	269	141	4	942	730	0	172
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	440	684	63	329	1719	269	141	4	942	730	0	172
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	440	684	63	329	1719	269	141	4	942	730	0	172
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	440	684	63	329	1719	269	141	4	942	730	0	172
Reduct Vol:	0	0	0	0	0	0	0	0	698	0	0	0
Reduced Vol:	440	684	63	329	1719	269	141	4	244	730	0	172
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	440	684	63	329	1719	269	141	4	244	730	0	172
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.92	0.93	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.95	0.05	1.00	2.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3452	98	1750	3550	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.25	0.12	0.04	0.19	0.30	0.15	0.04	0.04	0.14	0.21	0.00	0.10
Crit Moves:	****				****		****			****		
Green Time:	21.0	60.0	60.0	21.0	60.0	60.0	30.0	30.0	30.0	25.0	0.0	25.0
Volume/Cap:	1.92	0.32	0.10	1.43	0.80	0.41	0.22	0.22	0.74	1.32	0.00	0.63
Uniform Del:	69.5	35.5	32.4	69.5	44.7	36.9	55.1	55.1	61.4	67.5	0.0	63.2
IncremntDel:	427.8	0.1	0.1	217.8	2.3	0.4	0.2	0.2	8.9	154.7	0.0	4.6
InitQueuDel:	0.0	1.7	0.0	62.7	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.90	0.60	0.60	0.90	0.60	0.60	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	490.3	23.1	19.5	343.0	32.1	22.6	55.2	55.2	70.2	222.2	0.0	67.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	490.3	23.1	19.5	343.0	32.1	22.6	55.2	55.2	70.2	222.2	0.0	67.8
LOS by Move:	F	C	B-	F	C-	C+	E+	E+	E	F	A	E
HCM2kAvgQ:	52	5	1	32	23	7	3	3	14	32	0	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #1200: BOWERS/SCOTT



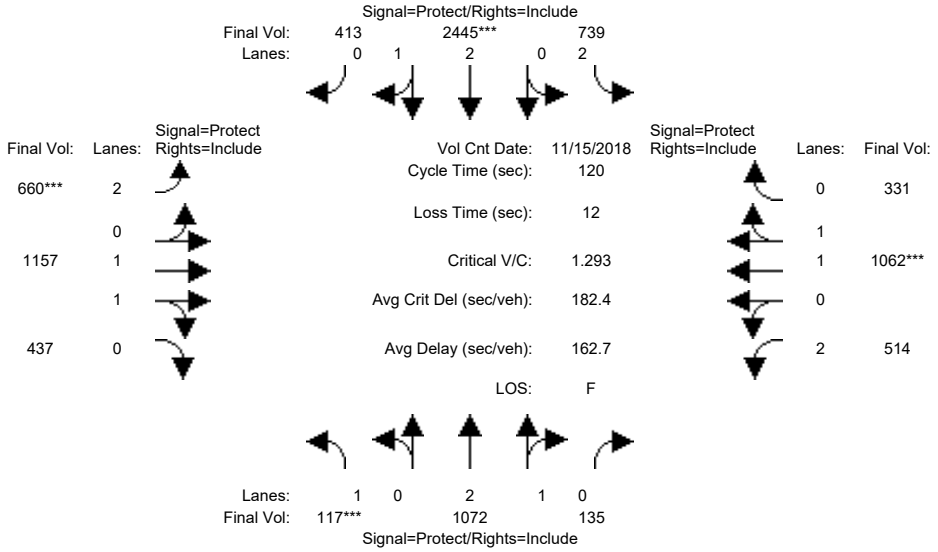
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	30	30	20	30	30	15	20	20	15	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	299	2594	670	530	1175	250	213	316	73	418	823	555
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	2594	670	530	1175	250	213	316	73	418	823	555
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	2594	670	530	1175	250	213	316	73	418	823	555
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	2594	670	530	1175	250	213	316	73	418	823	555
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	2594	670	530	1175	250	213	316	73	418	823	555
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	2594	670	530	1175	250	213	316	73	418	823	555
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.99	0.95	0.83	0.98	0.95	0.83	0.99	0.95
Lanes:	1.00	2.36	0.64	2.00	2.45	0.55	2.00	1.61	0.39	2.00	1.17	0.83
Final Sat.:	1750	4449	1149	3150	4616	982	3150	3005	694	3150	2209	1489
Capacity Analysis Module:												
Vol/Sat:	0.17	0.58	0.58	0.17	0.25	0.25	0.07	0.11	0.11	0.13	0.37	0.37
Crit Moves:		****		****			****				****	
Green Time:	25.9	44.5	44.5	20.0	38.6	38.6	15.0	24.2	24.2	19.3	28.5	28.5
Volume/Cap:	0.79	1.57	1.57	1.01	0.79	0.79	0.54	0.52	0.52	0.83	1.57	1.57
Uniform Del:	44.5	37.7	37.7	50.0	37.0	37.0	49.3	42.7	42.7	48.7	45.8	45.8
IncremntDel:	10.8	259	259.3	41.7	2.5	2.5	1.5	0.7	0.7	10.8	262	262.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.3	297	297.0	91.7	39.5	39.5	50.8	43.4	43.4	59.5	308	308.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.3	297	297.0	91.7	39.5	39.5	50.8	43.4	43.4	59.5	308	308.2
LOS by Move:	E+	F	F	F	D	D	D	D	D	E+	F	F
HCM2kAvgQ:	11	88	88	13	15	15	4	6	6	9	57	57

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #1200: BOWERS/SCOTT



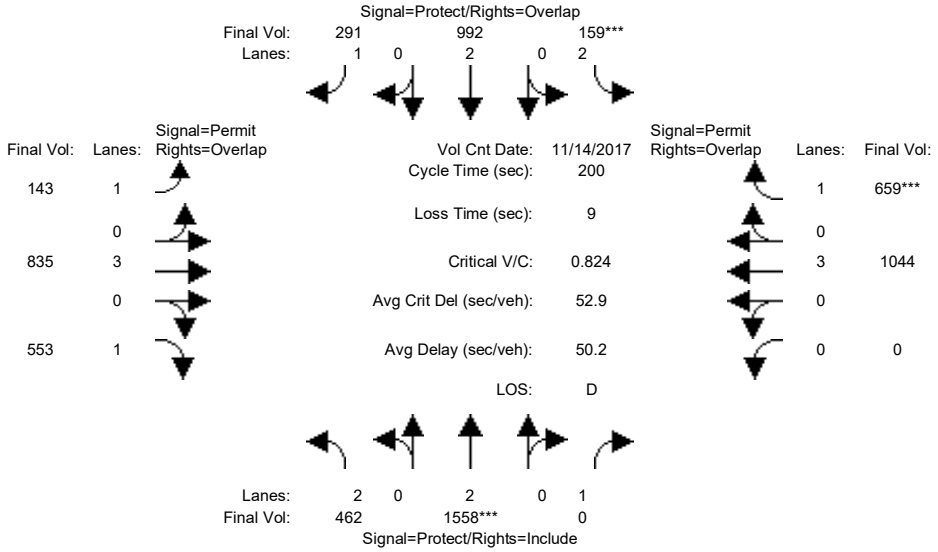
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 Nov 2018 << 5:00 - 6:00 PM												
Base Vol:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	1072	135	739	2445	413	660	1157	437	514	1062	331
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	0.99	0.95	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	1.00	2.65	0.35	2.00	2.55	0.45	2.00	1.44	0.56	2.00	1.51	0.49
Final Sat.:	1750	4973	626	3150	4790	809	3150	2685	1014	3150	2820	879
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.22	0.23	0.51	0.51	0.21	0.43	0.43	0.16	0.38	0.38
Crit Moves:	****				****		****				****	
Green Time:	7.0	25.9	25.9	28.2	47.0	47.0	19.3	39.2	39.2	14.8	34.7	34.7
Volume/Cap:	1.15	1.00	1.00	1.00	1.30	1.30	1.30	1.32	1.32	1.32	1.30	1.30
Uniform Del:	56.5	47.1	47.1	45.9	36.5	36.5	50.4	40.4	40.4	52.6	42.7	42.7
IncremntDel:	133.7	25.9	25.9	33.1	140	139.7	150.2	150	150.2	161.3	143	143.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	190.2	73.0	73.0	79.1	176	176.2	200.5	191	190.6	213.9	186	185.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	190.2	73.0	73.0	79.1	176	176.2	200.5	191	190.6	213.9	186	185.8
LOS by Move:	F	E	E	E-	F	F	F	F	F	F	F	F
HCM2kAvgQ:	7	17	17	19	62	62	26	54	54	21	47	47

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



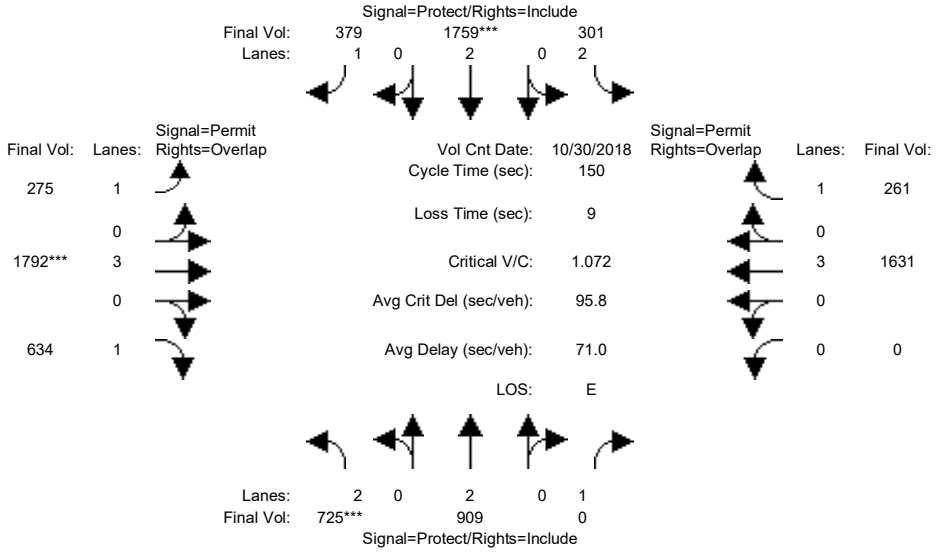
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	0	10	10	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	462	1558	0	159	992	291	0	835	553	0	1044	659
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	462	1558	0	159	992	291	0	835	553	0	1044	659
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Vol Adj:	0	0	0	0	0	0	143	0	0	0	0	0
Initial Fut:	462	1558	0	159	992	291	143	835	553	0	1044	659
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	462	1558	0	159	992	291	143	835	553	0	1044	659
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	462	1558	0	159	992	291	143	835	553	0	1044	659
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	462	1558	0	159	992	291	143	835	553	0	1044	659
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.41	0.00	0.05	0.26	0.17	0.08	0.15	0.32	0.00	0.18	0.38
Crit Moves:		****		****								****
Green Time:	40.2	99.6	0.0	12.3	71.6	71.6	79.2	79.2	119.4	0.0	79.2	91.4
Volume/Cap:	0.73	0.82	0.00	0.82	0.73	0.46	0.21	0.37	0.53	0.00	0.46	0.82
Uniform Del:	74.8	42.7	0.0	92.8	55.8	49.4	39.7	42.8	23.7	0.0	44.7	47.3
IncremntDel:	4.3	3.1	0.0	24.0	2.0	0.5	0.1	0.1	0.5	0.0	0.2	6.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	79.1	45.8	0.0	116.8	57.8	50.0	39.9	42.9	24.3	0.0	44.8	54.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.1	45.8	0.0	116.8	57.8	50.0	39.9	42.9	24.3	0.0	44.8	54.2
LOS by Move:	E-	D	A	F	E+	D	D	D	C	A	D	D-
HCM2kAvgQ:	16	40	0	6	26	14	6	11	20	0	15	38

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #1405: El Camino Real (SR 82) / Wolfe Rd



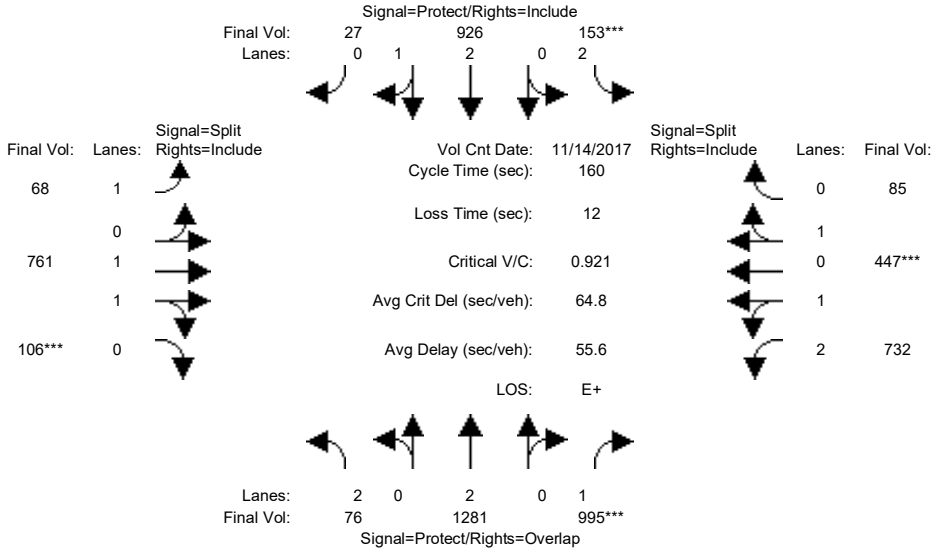
Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	0	10	10	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Oct 2018 << 5:30 - 6:30 PM												
Base Vol:	725	909	0	301	1759	379	0	1792	634	0	1631	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	725	909	0	301	1759	379	0	1792	634	0	1631	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Vol Adj:	0	0	0	0	0	0	275	0	0	0	0	0
Initial Fut:	725	909	0	301	1759	379	275	1792	634	0	1631	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	725	909	0	301	1759	379	275	1792	634	0	1631	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	725	909	0	301	1759	379	275	1792	634	0	1631	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	725	909	0	301	1759	379	275	1792	634	0	1631	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.23	0.24	0.00	0.10	0.46	0.22	0.16	0.31	0.36	0.00	0.29	0.15
Crit Moves:	****				****			****				
Green Time:	32.2	69.3	0.0	27.7	64.8	64.8	44.0	44.0	76.2	0.0	44.0	71.7
Volume/Cap:	1.07	0.52	0.00	0.52	1.07	0.50	0.54	1.07	0.71	0.00	0.98	0.31
Uniform Del:	58.9	28.5	0.0	55.1	42.6	30.9	44.4	53.0	28.5	0.0	52.5	24.0
IncremntDel:	55.4	0.3	0.0	0.8	44.2	0.5	1.1	44.1	2.7	0.0	16.5	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	114.3	28.8	0.0	56.0	86.8	31.4	45.6	97.1	31.2	0.0	69.0	24.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.3	28.8	0.0	56.0	86.8	31.4	45.6	97.1	31.2	0.0	69.0	24.2
LOS by Move:	F	C	A	E+	F	C	D	F	C	A	E	C
HCM2kAvgQ:	26	14	0	7	47	13	10	31	22	0	30	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #43: Wolfe Rd & Arques Ave



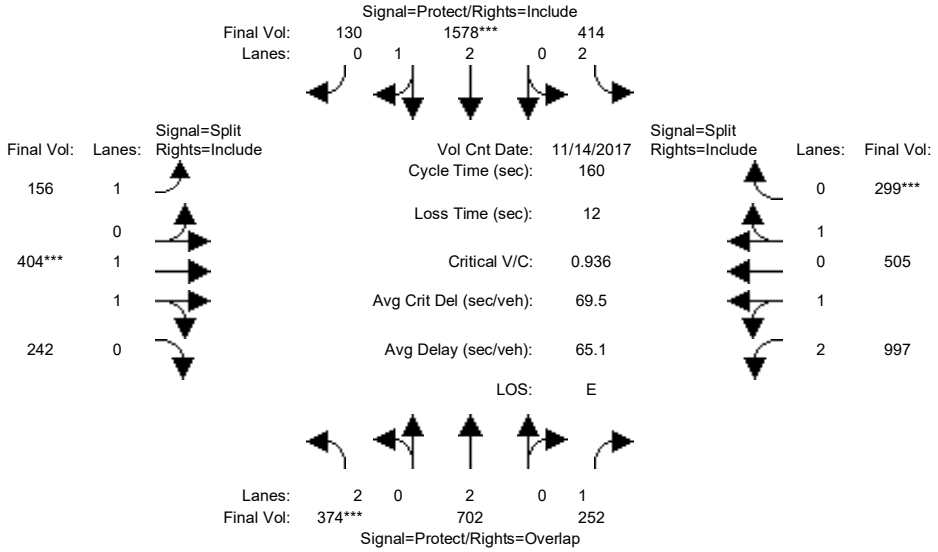
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	76	1281	995	153	926	27	68	761	106	732	447	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	1281	995	153	926	27	68	761	106	732	447	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	1281	995	153	926	27	68	761	106	732	447	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	1281	995	153	926	27	68	761	106	732	447	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	1281	995	153	926	27	68	761	106	732	447	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	1281	995	153	926	27	68	761	106	732	447	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.92	0.98	0.95	0.85	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.91	0.09	1.00	1.75	0.25	2.43	1.32	0.25
Final Sat.:	3150	3800	1750	3150	5441	159	1750	3247	452	3897	2379	452
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.57	0.05	0.17	0.17	0.04	0.23	0.23	0.19	0.19	0.19
Crit Moves:			****	****					****		****	
Green Time:	15.3	66.2	98.8	8.4	59.4	59.4	40.7	40.7	40.7	32.7	32.7	32.7
Volume/Cap:	0.25	0.82	0.92	0.92	0.46	0.46	0.15	0.92	0.92	0.92	0.92	0.92
Uniform Del:	67.1	41.5	27.1	75.4	38.1	38.1	46.2	58.1	58.1	62.4	62.4	62.4
IncremntDel:	0.4	3.4	12.5	47.2	0.2	0.2	0.2	13.9	13.9	10.3	10.3	10.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.5	44.9	39.6	122.6	38.3	38.3	46.4	72.0	72.0	72.7	72.7	72.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.5	44.9	39.6	122.6	38.3	38.3	46.4	72.0	72.0	72.7	72.7	72.7
LOS by Move:	E	D	D	F	D+	D+	D	E	E	E	E	E
HCM2kAvgQ:	2	28	49	5	12	12	3	22	22	19	19	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #43: Wolfe Rd & Arques Ave



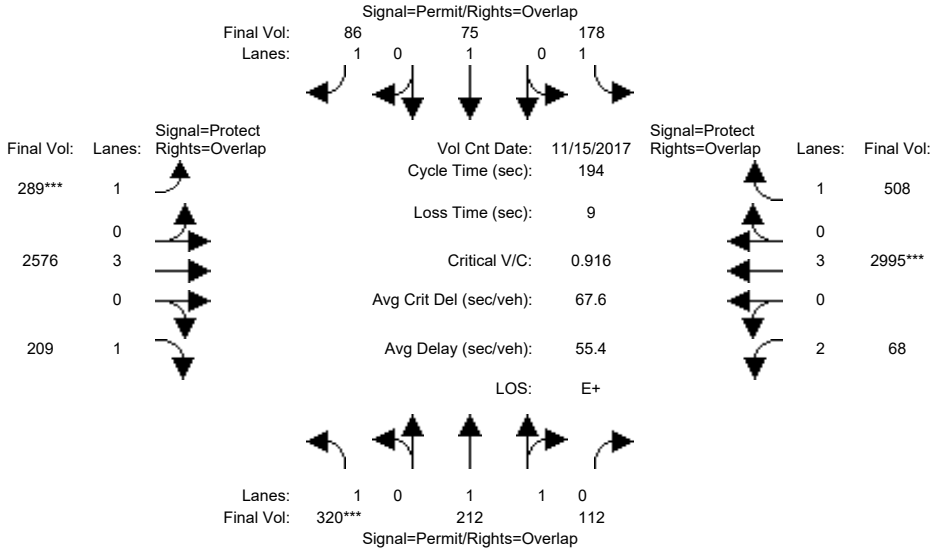
Street Name:	Wolfe Rd						Arques Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 Nov 2017 << 5:00 PM - 6:00 PM												
Base Vol:	374	702	252	414	1578	130	156	404	242	997	505	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	702	252	414	1578	130	156	404	242	997	505	299
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	702	252	414	1578	130	156	404	242	997	505	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	702	252	414	1578	130	156	404	242	997	505	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	702	252	414	1578	130	156	404	242	997	505	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	702	252	414	1578	130	156	404	242	997	505	299
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.99	0.95	0.92	0.99	0.95	0.84	0.95	0.95
Lanes:	2.00	2.00	1.00	2.00	2.76	0.24	1.00	1.23	0.77	2.33	1.05	0.62
Final Sat.:	3150	3800	1750	3150	5173	426	1750	2313	1385	3723	1886	1117
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.14	0.13	0.31	0.31	0.09	0.17	0.17	0.27	0.27	0.27
Crit Moves:	****				****			****				****
Green Time:	20.3	42.3	88.1	30.1	52.1	52.1	29.8	29.8	29.8	45.8	45.8	45.8
Volume/Cap:	0.94	0.70	0.26	0.70	0.94	0.94	0.48	0.94	0.94	0.94	0.94	0.94
Uniform Del:	69.2	53.1	18.9	60.7	52.3	52.3	58.1	64.1	64.1	55.7	55.7	55.7
IncremntDel:	29.4	2.2	0.1	3.7	9.7	9.7	1.1	20.2	20.2	9.3	9.3	9.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	98.6	55.3	19.0	64.4	62.1	62.1	59.2	84.4	84.4	65.0	65.0	65.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	98.6	55.3	19.0	64.4	62.1	62.1	59.2	84.4	84.4	65.0	65.0	65.0
LOS by Move:	F	E+	B-	E	E	E	E+	F	F	E	E	E
HCM2kAvgQ:	12	15	7	11	29	29	7	16	16	26	26	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg AM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY



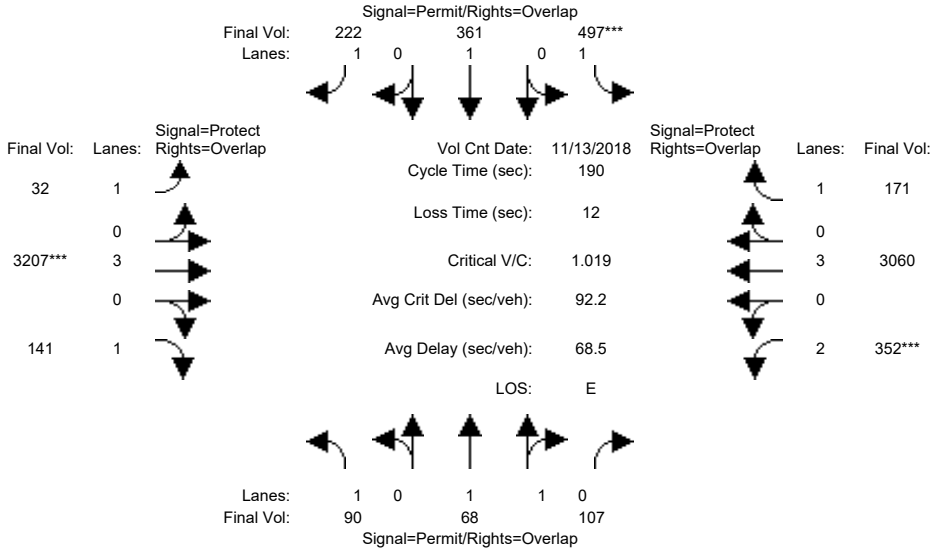
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	23	23	23	23	23	23	34	137	137	14	117	117
Y+R:	6.3	6.3	6.3	6.1	6.1	6.1	5.5	6.2	6.2	5.8	6.2	6.2
Volume Module: >> Count Date: 15 Nov 2017 << 8:00 AM - 9:00 AM												
Base Vol:	320	212	112	178	75	86	289	2576	209	68	2995	508
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	320	212	112	178	75	86	289	2576	209	68	2995	508
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	320	212	112	178	75	86	289	2576	209	68	2995	508
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	320	212	112	178	75	86	289	2576	209	68	2995	508
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	320	212	112	178	75	86	289	2576	209	68	2995	508
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	320	212	112	178	75	86	289	2576	209	68	2995	508
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	1750	2420	1279	1750	1900	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.09	0.09	0.10	0.04	0.05	0.17	0.45	0.12	0.02	0.53	0.29
Crit Moves:	****						****				****	
Green Time:	23.7	23.7	37.9	23.9	23.9	58.4	34.5	138	137.8	14.2	118	117.8
Volume/Cap:	1.50	0.72	0.45	0.83	0.32	0.16	0.93	0.64	0.17	0.29	0.87	0.48
Uniform Del:	85.1	81.9	68.8	83.0	77.6	49.8	78.5	14.9	9.2	85.2	31.5	21.1
IncremntDel:	246.4	5.5	0.4	22.2	0.8	0.1	33.0	0.3	0.1	0.7	2.5	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.14	2.63	2.63	1.00	1.00	1.00
Delay/Veh:	331.5	87.4	69.3	105.2	78.4	50.0	122.8	39.5	24.4	85.9	34.1	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	331.5	87.4	69.3	105.2	78.4	50.0	122.8	39.5	24.4	85.9	34.1	21.4
LOS by Move:	F	F	E	F	E-	D	F	D	C	F	C-	C+
HCM2kAvgQ:	34	10	8	12	4	4	22	43	10	2	45	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cumulative Mitg PM

Intersection #5325: CENTRAL EXPWY/CORVIN DR-OAKMEAD PKWY

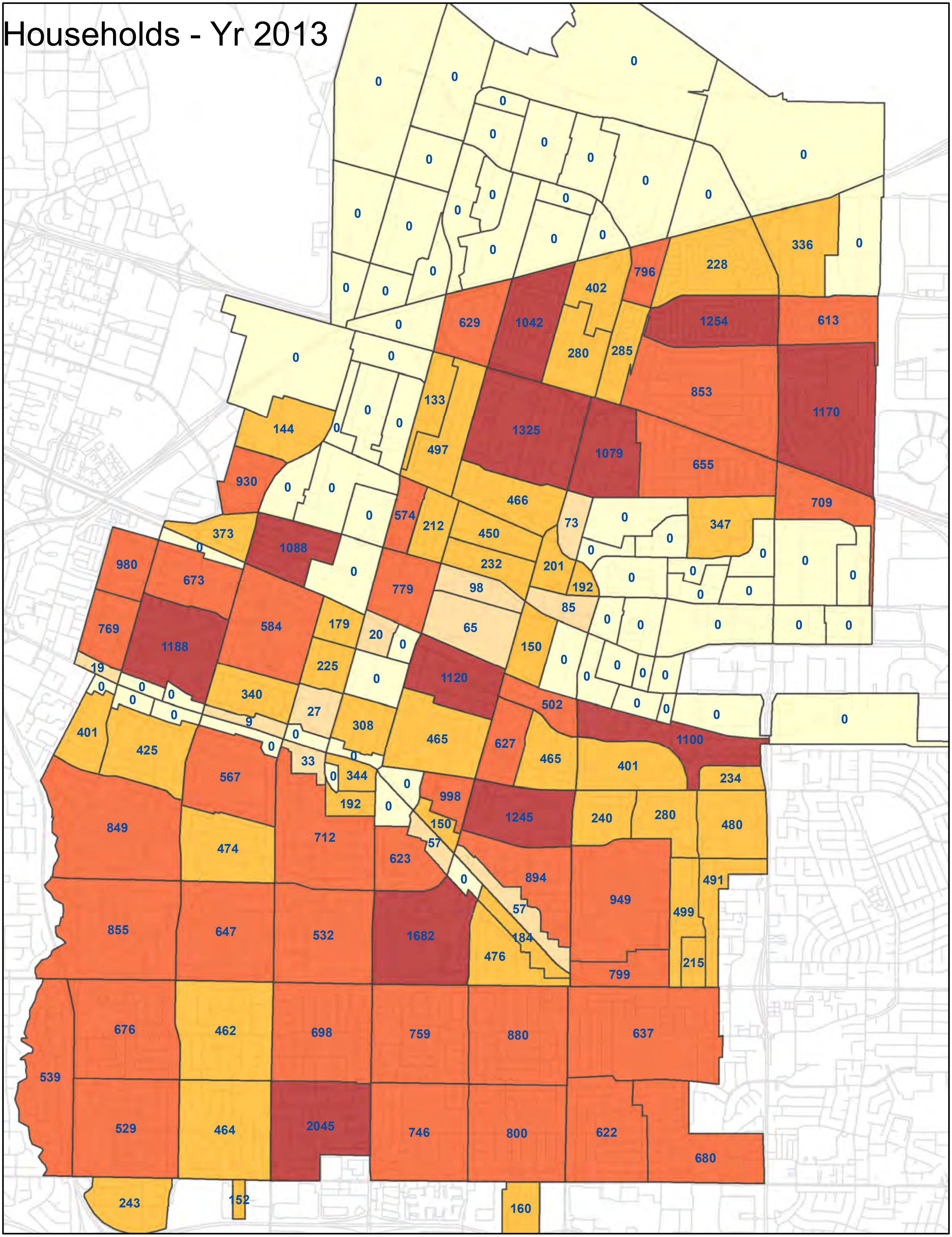


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	13	133	133	18	138	138
Y+R:	5.7	5.7	5.7	5.5	5.5	5.5	5.0	6.2	6.2	5.1	6.2	6.2
Volume Module: >> Count Date: 13 Nov 2018 << 5:15 - 6:15 PM												
Base Vol:	90	68	107	497	361	222	32	3207	141	352	3060	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	68	107	497	361	222	32	3207	141	352	3060	171
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	68	107	497	361	222	32	3207	141	352	3060	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	68	107	497	361	222	32	3207	141	352	3060	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	68	107	497	361	222	32	3207	141	352	3060	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	68	107	497	361	222	32	3207	141	352	3060	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.06	0.28	0.19	0.13	0.02	0.56	0.08	0.11	0.54	0.10
Crit Moves:				****				****		****		
Green Time:	36.7	36.7	53.6	36.7	36.7	48.9	12.2	125	125.1	16.9	130	129.8
Volume/Cap:	0.27	0.19	0.22	1.47	0.98	0.49	0.28	0.85	0.12	1.25	0.79	0.14
Uniform Del:	69.3	68.2	55.4	81.5	81.2	63.8	90.1	26.9	12.8	92.0	21.9	11.2
IncremntDel:	0.4	0.1	0.1	227.4	42.6	0.9	1.4	2.1	0.0	140.1	1.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.53	1.53	1.00	1.60	1.60
Delay/Veh:	69.8	68.3	55.6	308.9	124	64.6	91.5	43.3	19.6	232.1	36.1	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	68.3	55.6	308.9	124	64.6	91.5	43.3	19.6	232.1	36.1	18.0
LOS by Move:	E	E	E+	F	F	E	F	D	B-	F	D+	B-
HCM2kAvgQ:	5	3	5	53	25	12	2	59	5	17	49	6

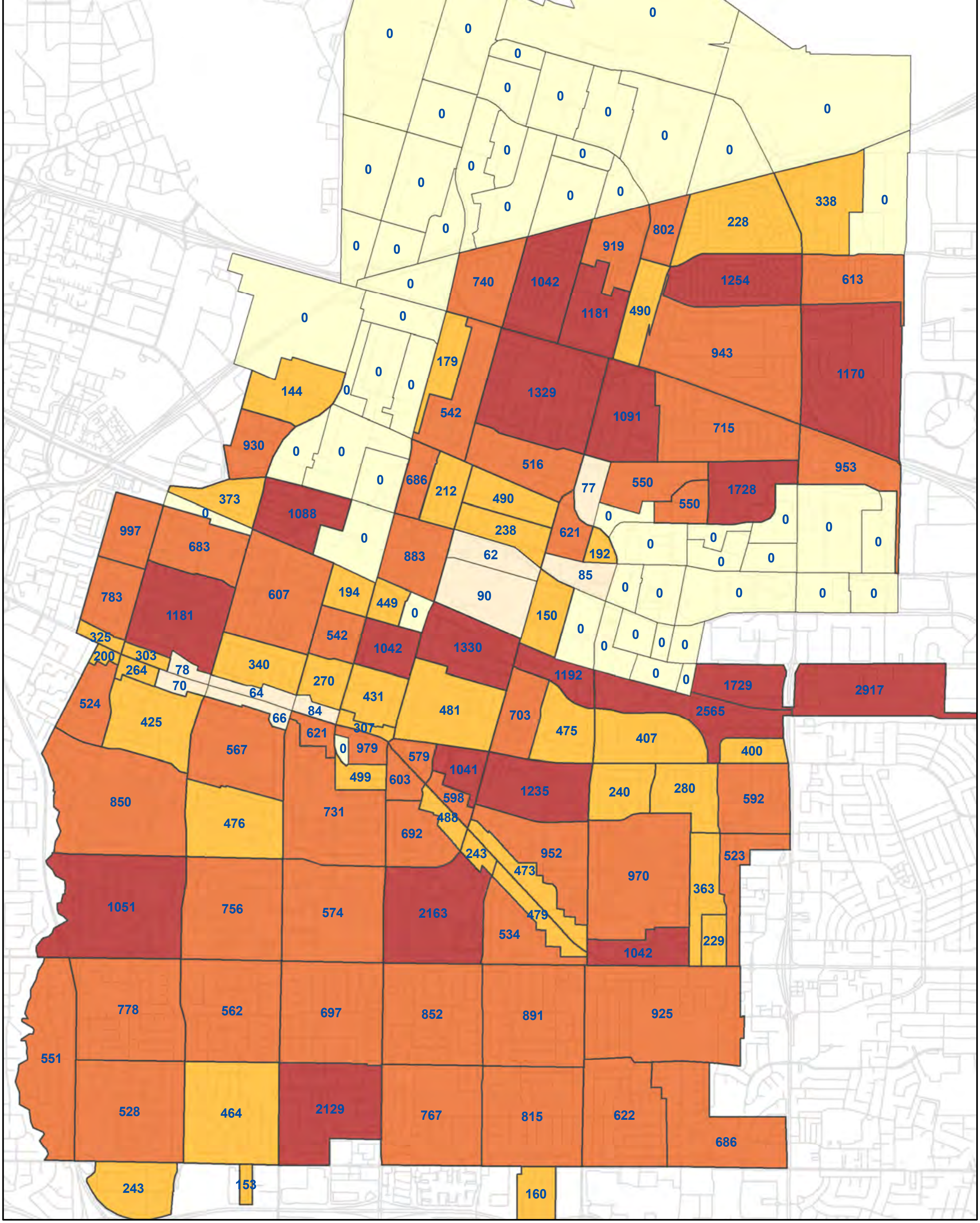
Note: Queue reported is the number of cars per lane.

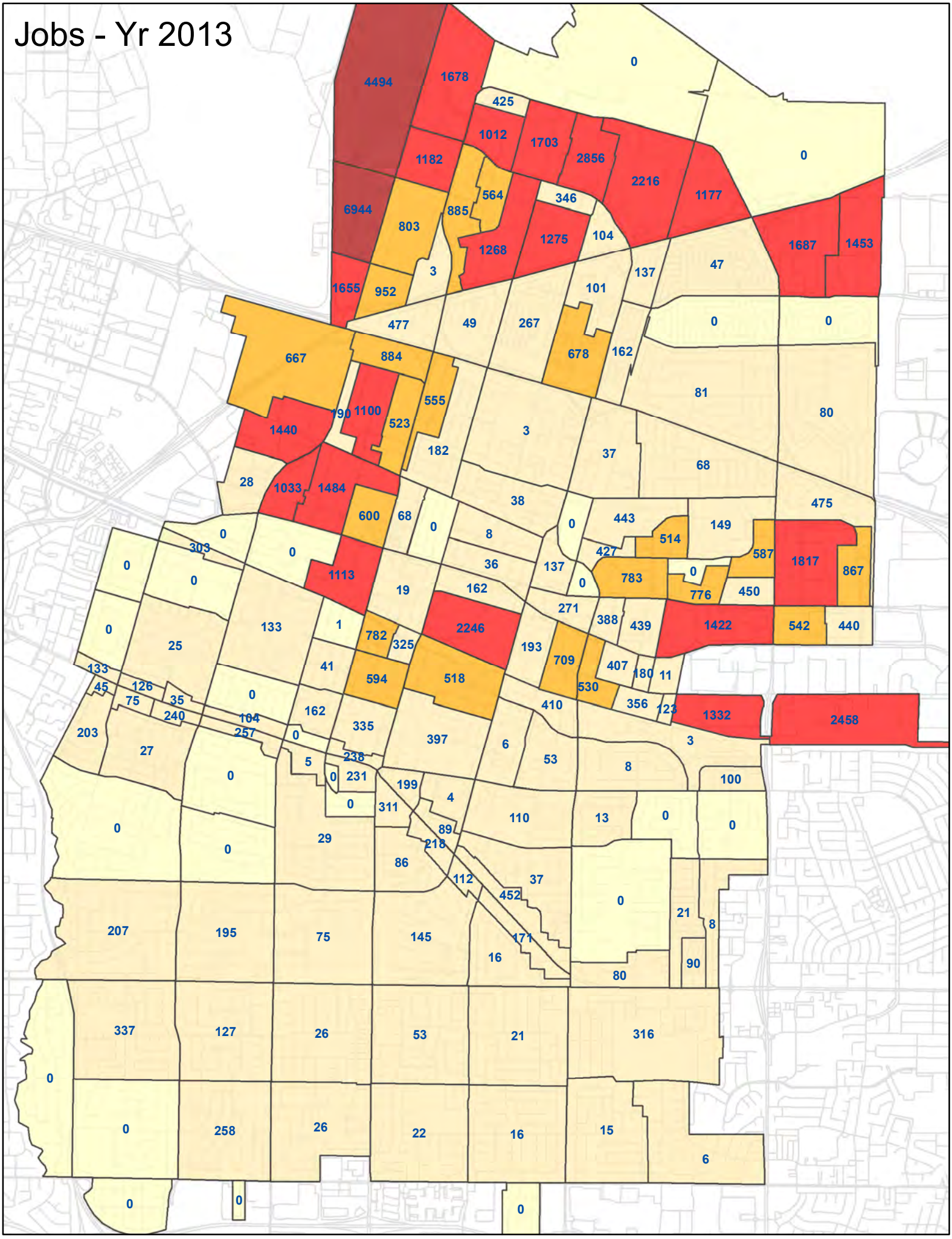
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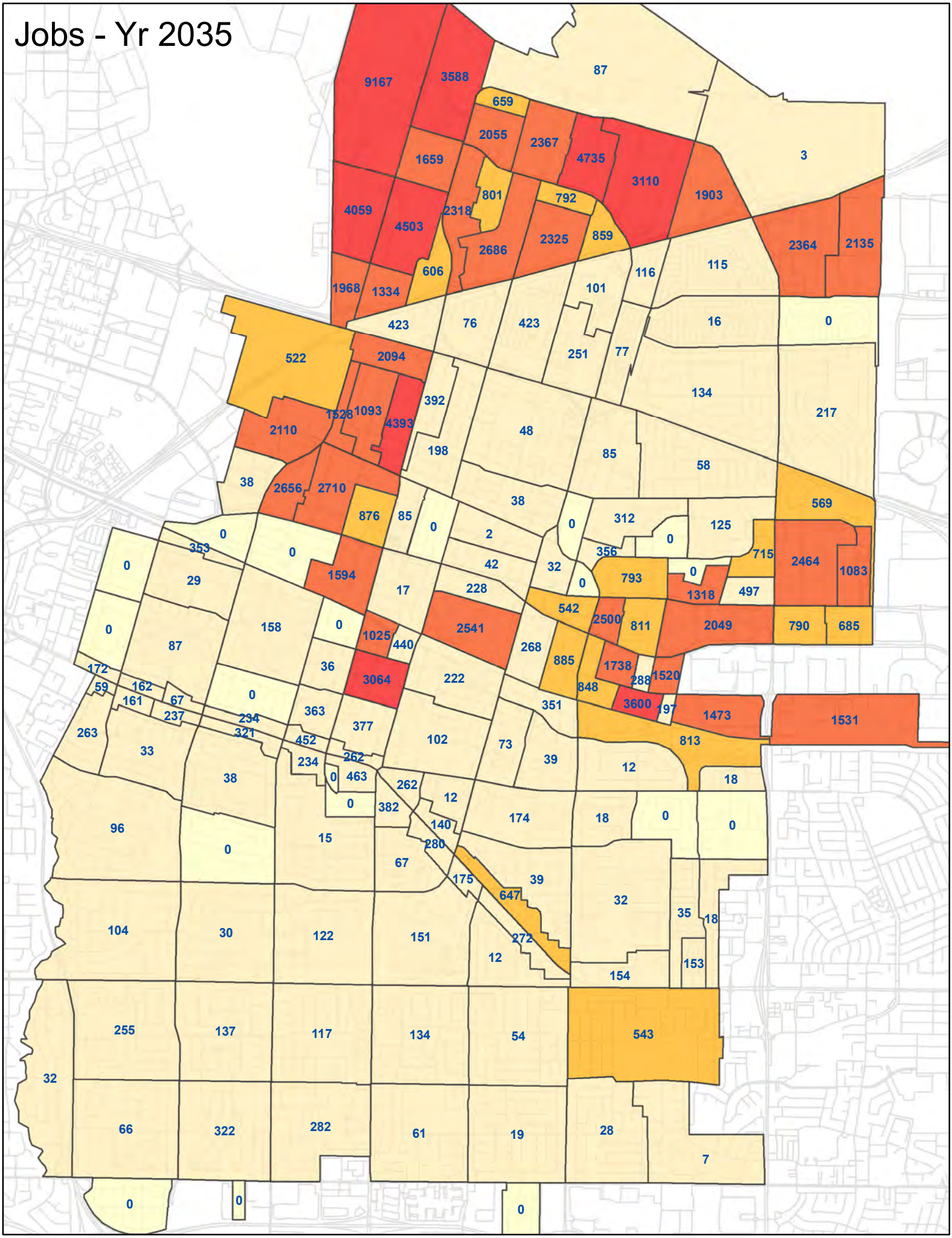
Appendix C
City of Sunnyvale Land Use Summary


Households - Yr 2013
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
336
0
228
796
402
0
0
629
1042
1254
613
0
280
285
0
853
133
0
0
1170
144
0
1325
497
1079
655
930
0
0
466
709
0
574
212
450
73
0
347
373
0
1088
980
673
232
201
0
0
0
0
0
779
98
192
0
0
769
584
179
85
0
0
0
0
0
1188
20
0
65
150
0
19
225
0
1120
0
0
0
0
0
0
0
340
27
502
0
0
0
0
9
308
0
401
425
0
0
465
627
1100
465
0
33
344
0
567
401
234
0
998
192
849
0
150
1245
240
280
480
712
474
57
623
0
894
491
949
57
855
647
532
1682
499
184
476
215
799
676
462
698
759
880
637
539
529
464
2045
746
800
622
680
243
152
160

Households - Yr 2035




Jobs - Yr 2013
4494
1678
0
425
1012
1703
2856
2216
1177
0
1182
6944
803
885
564
346
1268
1275
104
1687
1453
3
1655
952
137
47
101
477
49
267
0
0
667
884
678
162
81
80
190
1100
555
523
1440
3
182
37
68
28
1033
1484
600
68
0
38
475
443
149
0
303
8
514
427
587
1817
867
1113
36
137
783
0
776
450
19
162
271
388
439
1422
542
440
133
1
782
325
2246
193
709
407
180
11
25
41
594
518
530
356
123
1332
2458
133
45
126
75
35
0
410
240
104
162
335
397
6
53
8
100
203
27
257
238
231
199
4
311
110
13
0
89
29
218
86
112
37
452
21
8
207
195
75
145
171
16
90
80
337
127
26
53
21
316
0
258
22
15
6
0


Jobs - Yr 2035
9167
3588
87
659
2055
2367
4735
3110
1903
3
1659
801
792
4059
4503
2318
2686
2325
859
2364
2135
606
1968
1334
423
76
423
101
116
115
16
0
522
2094
251
77
134
217
1528
1093
4393
392
2110
48
198
85
58
38
2656
2710
876
85
0
38
0
312
125
569
0
353
0
2
0
356
0
715
2464
1083
0
29
1594
42
32
0
793
0
1318
497
17
228
542
2500
811
2049
790
685
0
87
158
0
1025
440
2541
268
885
1738
288
1520
36
3064
222
848
3600
197
1473
1531
172
59
162
161
67
237
234
321
0
363
377
102
73
351
813
263
33
452
262
234
0
463
39
12
18
38
262
12
0
382
174
18
0
0
96
0
15
140
280
67
175
39
647
32
35
18
104
30
122
151
272
12
153
154
255
137
117
134
54
543
32
66
322
282
61
19
28
7
0
0
0

Appendix F

Noise Modeling Calculations

Acoustical Assessment for the Intuitive Surgical Campus Project

Acoustical Assessment

Intuitive Surgical Campus Project
City of Sunnyvale

Prepared by:

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Orange, California 92868
Contact: Mr. Ace Malisos
714.939.1030

June 2020

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Appendix A: Noise Data

LIST OF ABBREVIATED TERMS

ADT	average daily traffic
APN	Assessor's Parcel Number
ASTM	American Society for Testing and Materials
CEQA	California Environmental Quality Act
CSMA	California Subdivision Map Act
CNEL	community equivalent noise level
dB	decibel
dBA	A-weighted sound level
du/ac	dwelling units per acre
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating ventilation and air conditioning
Hz	hertz
in/sec	inches per second
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
LUD	Land Use Designation
µPa	micropascals
PPV	peak particle velocity
RMS	root mean square
SEL	Sound Exposure Level
sf	square feet
STC	Sound Transmission Class
TNM	Traffic Noise Model
VdB	vibration velocity level

1 INTRODUCTION

This report documents the results of an Acoustical Assessment completed for the Intuitive Surgical Project. The purpose of this Acoustical Assessment is to evaluate the potential construction and operational noise and vibration levels associated with the Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Project would be constructed on a site bisected by Kifer Road, creating a north Project area and south Project area in the City of Sunnyvale, Santa Clara County, California. The north area is located at 945–955 Kifer Road, while the south area is located at 932 and 950 Kifer Road. *Figure 1: Regional Location* and *Figure 2: Project Site Vicinity*, depict the Project site in a regional and local context, respectively. The north area is approximately 15.6 acres while the south area is approximately 16.8 acres. Combined, the Project site is approximately 32.4-acres. The Project includes four parcels, described as Assessor Parcel Numbers (APNs) 205-40-001; 205-40-002; 205-49-17; and 205-49-18. The sites are relatively flat, at an approximate elevation of 59 to 71 feet above mean sea level.

Regional access to the site is from U.S. Route 101, which is located approximately 1.1 miles north of the Project site. Local vehicular access to the site is provided from Lawrence Expressway and Central Expressway. The north area is bordered by Central Expressway to the north and Kifer Road to the south and commercial uses to the east and west. The south area is bordered by Kifer Road to the north and Caltrain right-of-way to the south and commercial uses to the east and west. The new facilities on the south area would be connected to the north area across Kifer Road by a new private pedestrian bridge, helping to connect the areas and to reduce pedestrian traffic congestion at street level. The Project proposes four driveways along Kifer Road.

1.2 Project Description

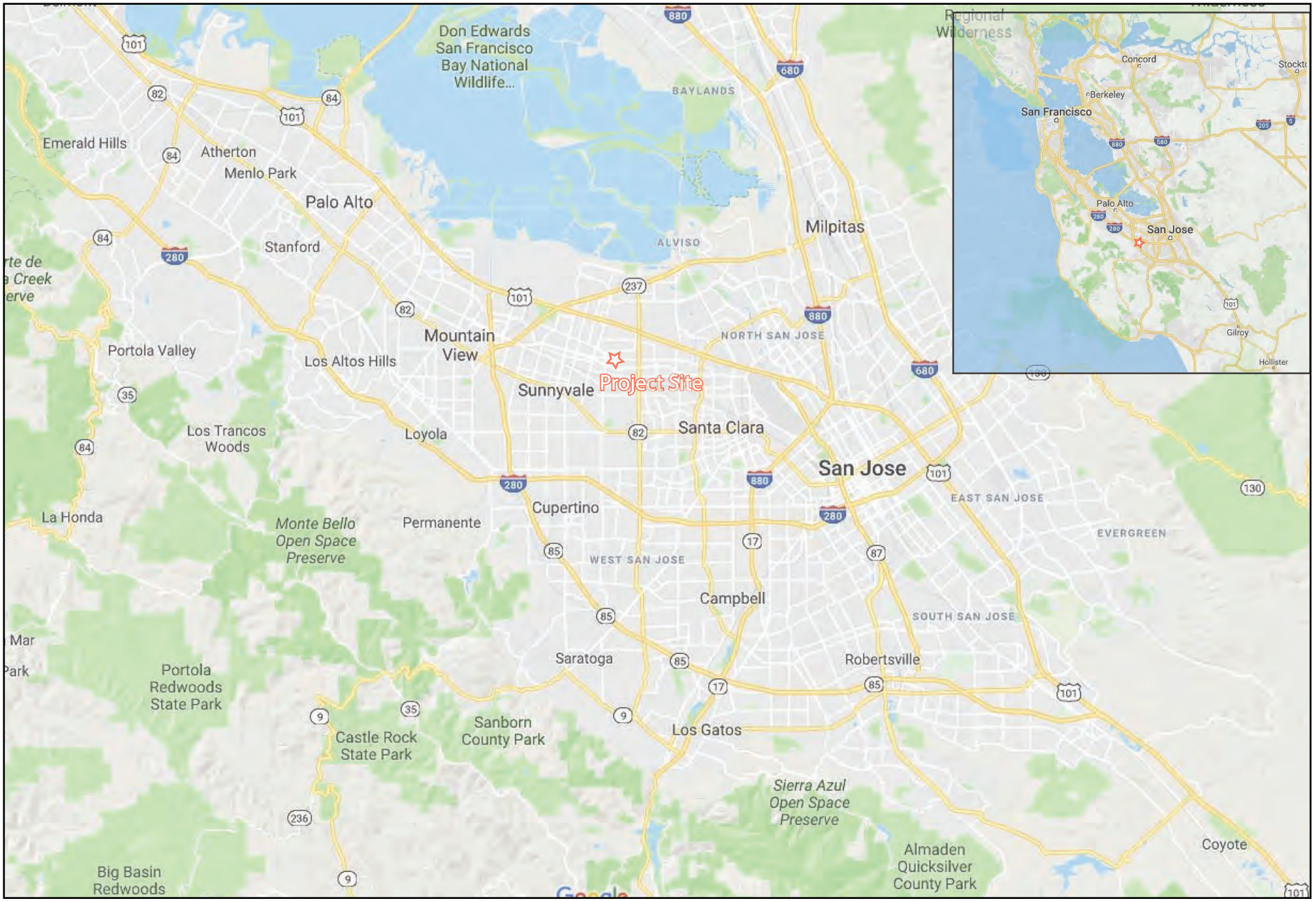
The proposed Project would expand Intuitive's presence in Sunnyvale along Kifer Road with the development of a unified corporate campus and state of the art manufacturing and research and development (R&D) facility on four parcels near the existing Intuitive facilities. The proposed Project is located on approximately 32.4 acres and would accommodate approximately 3,500 employees in approximately 1.2 million square feet of development. The Project would allow Intuitive to integrate manufacturing, engineering and corporate offices in two connected buildings, supported by open space, recreation areas, an amenity building, dining venues and parking garages.

The new facility would replace an existing commercial building, and other smaller structures that were once part of an industrial facility on the two sites. The north area was previously used as a private recreation space for employees. The existing shade structure and amphitheater on the north area would remain. Refer to *Figure 3: Site Plan*.

The north area would include an approximately 363,000 square foot three-story office building with a new multi-purpose amenity building, outdoor sports fields and courts, and outdoor dining area. The north site would have a diesel emergency backup generator in the basement that would be permitted by the Bay Area Air Quality Management District (BAAQMD). The north area would include two floors of underground parking and small surface visitor parking lot with approximately 825 stalls.

The south area would be home to an approximately 850,000 square foot, three-story manufacturing and research and development facility. There also would be a basement level, with a covered loading dock, manufacturing, storage and service space. The south area would include a five-story parking garage and visitor parking for a total of approximately 1,726 parking stalls. A utility plant would be constructed on the south west portion of the site adjacent to the parking structure. The Project Site (both the north and south Project areas) include bicycle parking, fire lanes, waste management areas, and security guard stations.

Project construction is anticipated to last up to three years and would disturb a total of approximately 28-acres. The existing buildings (approximately 172,806 square feet) would be demolished.



Source: Google Earth, 2019

Figure 1: Regional Location

Intuitive Surgical Campus Project

Not to scale

Kimley»Horn

Expect More. Experience Better.



Source: Nearmap, 2019

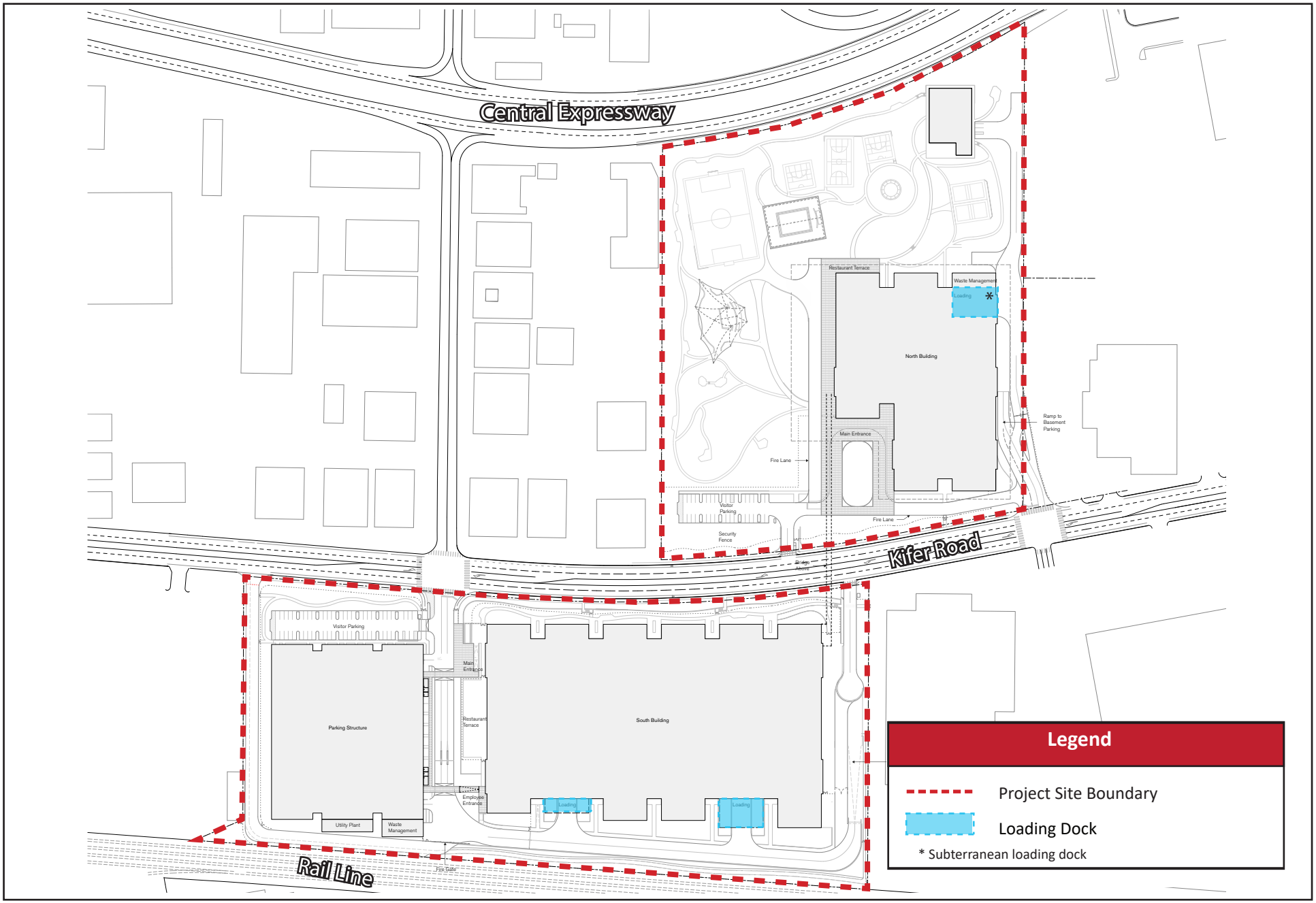
Figure 2: Project Site Vicinity

Intuitive Surgical Campus Project

Not to scale

Kimley»Horn

Expect More. Experience Better.



Source: Foster + Partners, 2020

Figure 3: Site Plan

Intuitive Surgical Campus Project

Not to scale

Kimley»Horn

Expect More. Experience Better.

2 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g., air) to human (or animal) ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. The fundamental acoustics model consists of a noise source, receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this ambient noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micropascals (µPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. *Table 1: Typical Noise Levels* provides typical noise levels.

Table 1: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock Band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawnmower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**– 70 –**	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	**– 60 –**	
		Large business office
Quiet urban daytime	**– 50 –**	Dishwasher in next room
Quiet urban nighttime	**– 40 –**	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	**– 0 –**	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The equivalent noise level (L_{eq}) is the average noise level averaged over the measurement period, while the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Most commonly, environmental sounds are described in terms of L_{eq} that has the same acoustical energy as the summation of all the time-varying events. Each is applicable to this analysis and defined in *Table 2: Definitions of Acoustical Terms.*

Table 2: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in µPa (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 µPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01}, L_{10}, L_{50}, L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10-dBA weighting added to noise during the hours of 10:00 PM to 7:00 AM to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 AM to 10:00 AM and a 10-dBA weighting added to noise during the hours of 10:00 PM to 7:00 AM to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

The A-weighted decibel (dBA) sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be used. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of dBA, but are expressed as dB, unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The way older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments, including noise from human activities, are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted:

- Except in carefully controlled laboratory experiments, a 1-dBA change cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5-dBA change is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss. While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance. Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative

annoyance of these different sources. A noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance[1].

2.2 Groundborne Vibration

Sources of groundborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 3: Human Reaction and Damage to Buildings from Vibrations, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Table 3: Human Reaction and Damage to Buildings from Vibrations

Peak Particle Velocity (in/sec)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006-0.019	64-74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4-0.6	98-104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: California Department of Transportation, Transportation and Construction-Induced Vibration Guidance Manual, September 2013.

[1] Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

3 REGULATORY SETTING

To limit population exposure to physically or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the State have established standards and ordinances to control noise.

3.1 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

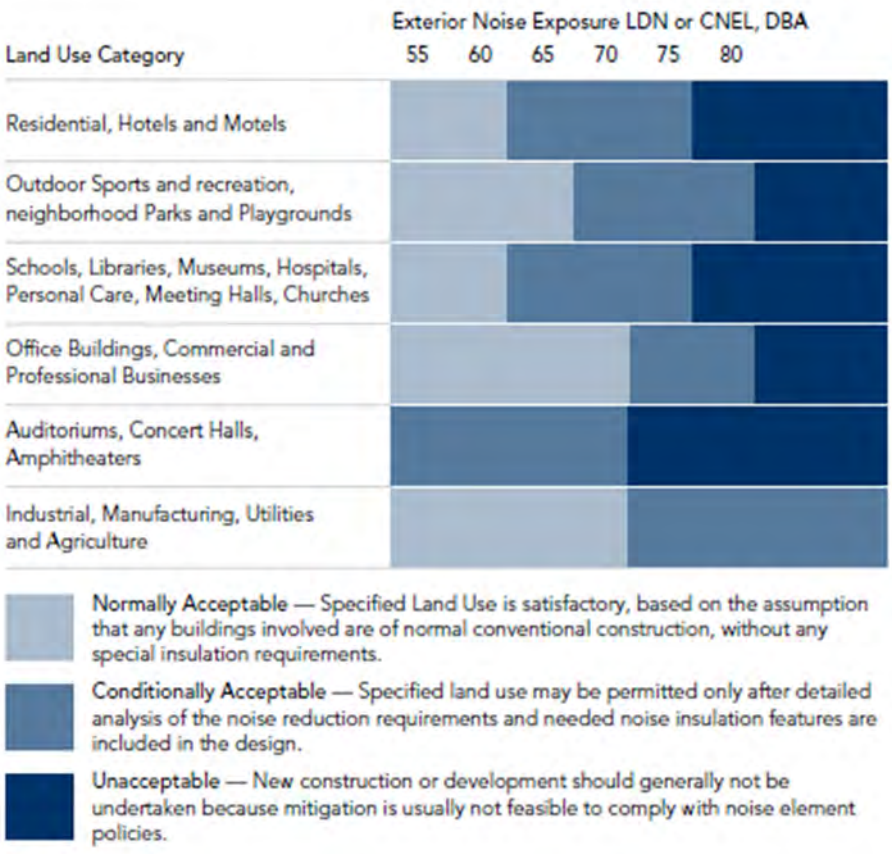
The State's noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 Local

City of Sunnyvale General Plan

The City has established noise standards and policies in its General Plan intended to protect community residents from harmful and annoying noise levels. These policies identify permissible maximum average-daily noise standards for determination of land use compatibility. The City's General Plan noise standards are summarized in *Figure 4: City of Sunnyvale Noise Guidelines for Land Use Compatibility*. For instance, the land use compatibility noise standard for office/R&D land uses is 70 dBA L_{dn}, though noise levels up to 80 dBA are conditionally acceptable. These noise criteria apply to newly proposed land uses and are based on average-daily noise levels at the property line. The land use compatibility standards mean that the proposed new land use cannot be sited in a location where it would be exposed to exterior and interior noise above the normally acceptable levels specified unless adequate noise reduction measures have been incorporated to reduce noise to acceptable levels.

Figure 4: City of Sunnyvale Noise Guidelines for Land Use Compatibility



Source: City of Sunnyvale General Plan Safety and Noise Element, 2011.

The General Plan Safety and Noise Element discusses the significant noise impacts from new development on existing land use. The General Plan includes standards for evaluating whether a project's contribution to ambient noise levels is significant. Under these standards, if ambient noise conditions are in the "normally acceptable" category, then a noise increase is significant if it would increase noise by more than 3 dBA and cause the total Ldn to exceed the "normally acceptable" category or increase noise by more than 5 dBA. If ambient noise conditions are in the conditionally acceptable or unacceptable categories, then a noise increase of more than 3 dBA is significant.

The following policies and action items from the Safety and Noise Element and the Land Use and Transportation Element (LUTE) would reduce exposure of noise-sensitive land uses to excessive noise levels:

Policy SN-8.4: Prevent significant noise impacts from new development by applying state noise guidelines and Sunnyvale Municipal Code noise regulations in the evaluation of land use issues and proposals.

Policy SN -8.5: Comply with “State of California Noise Guidelines for Land Use Planning” (Figure 6-5 [refer to Figure 4]) for the compatibility of land uses with their noise environments,

except where the City determines that there are prevailing circumstances of a unique or special nature.

Policy SN-8.6: Use Figure 6-6 (refer to Figure 5: Significant Noise Impacts from New Development on Existing Land Use), "Significant Noise Impacts from new Development on Existing Land Use" to determine if proposed development results in a "significant noise impact" on existing development.

Figure 5: Significant Noise Impacts from New Development on Existing Land Use

Ldn Category of Existing Development Per Figure 6-4	Noise Increase Considered "Significant" over Existing Noise Levels
Normally Acceptable	An increase of more than 3 dBA and the total Ldn exceeds the "normally acceptable" category
Normally Acceptable	An increase of more than 5 dBA
Conditionally Acceptable	An increase of more than 3 dBA
Unacceptable	An increase of more than 3 dBA

Source: City of Sunnyvale General Plan Safety and Noise Element, 2011.

Policy SN-8.7: Supplement Figure 6-5, "State of California Noise guidelines for Land Use Planning" for residential uses by attempting to achieve an outdoor day-night level (L_{dn}) of no greater than 60 dBA for common recreational areas, backyards, patios and medium and large-size balconies. These guidelines should not apply where the noise source is a railroad or an airport. If the noise source is a railroad, then an L_{dn} of no greater than 70 dBA should be achieved in common areas, backyards, patios and medium and large balconies. If the noise source is from aircraft, then preventing new residential uses within areas of high L_{dn} from aircraft noise is recommended.

Policy SN-8.9: Consider techniques which block the path of noise and insulate people from noise.

Policy SN-10.1: Refrain from increasing or reduce the noise impacts of major roadways.

Policy LT-6.2: Limit the intrusion of incompatible uses and inappropriate development in and near residential neighborhoods, but allow transition areas at the edges of neighborhoods.

LT-6.2b: Require appropriate noise attenuation, visual screening, landscape buffers, or setbacks between residential areas and dissimilar land uses.

Policy LT-13.3: Use density and design principles, such as physical transitions, between different land uses and to buffer between sensitive uses and less compatible uses.

Policy LT-13.8: Require high design standards for office, industrial, and research and development (R&D) buildings in all business districts.

LT-13.8c: Carefully review the impacts, such as noise, odors, and facility operations, of commercial, office, and industrial uses and development adjacent to residential areas.

Policy LT-14.5: Use the Industrial-to-Residential (ITR) combining district to help meet the community's housing needs for all ages and economic sectors and balance its use with maintaining a healthy economy and employment base. ITR zoning allows industrial/commercial/office uses to continue as conforming uses while an area transitions to residential uses. ITR areas include Tasman Crossing, East Sunnyvale, Futures 4a, Futures 4b, and Futures 6a.

LT-14.5b: During the transition from industrial to residential uses, anticipate and monitor compatibility issues between residential and industrial uses (e.g., noise, odors, hazardous materials).

Policy LT-14.12: Recognize child care and places of assembly as essential services and land uses that support the diverse needs of the community. Avoid locating these sensitive uses near hazardous materials, noise, dust, etc.

The LUTE EIR also includes Mitigation Measure 3.6.3 to minimize noise during construction:

New development and public projects shall employ site-specific noise attenuation measures during construction to reduce the generation of construction noise and vibration. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by the City. Measures specified in the Noise Control Plan and implemented during construction shall include, at a minimum, the following noise control strategies:

- Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds;
- Impact tools (e.g., jackhammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools; and
- Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures.

City of Sunnyvale Municipal Code

Construction

All construction activities are regulated by the City of Sunnyvale Municipal code regarding allowable activities and the times and days in which construction can occur. The City of Sunnyvale Municipal Code Section 16.08.030 (Hours of Construction-Time and Noise Limitations) specifies construction activity shall be permitted between 7:00 a.m. and 6:00 p.m. Monday to Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and prohibited on Sunday or federal holidays when City offices are closed, except that a waiver to the hours

limit can be granted where additional construction activity will not be a nuisance to surrounding properties, based on location and type of construction. Section 16.08.030 also provides that construction noises should not include loud, environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, and radios, where such noises could be a nuisance to adjacent properties.

Operations

The City of Sunnyvale Municipal Code Chapter 19.42.030(a) and (b) (Noise or Sound Level) identifies the acceptable noise levels. The City of Sunnyvale operational noise shall not exceed 75 dBA L_{eq} at any point on the property line of the premises where the noise is generated.[2] Properties adjacent to residential uses shall not exceed 50 dBA L_{eq} during nighttime and 60 dBA L_{eq} during the daytime at any point on adjacent residentially zoned property. However, if during the nighttime the enforcing officer determines the noise involves a steady, audible tone such as a whine, screech or hum, or is a staccato or intermittent noise (e.g. hammering) or includes music or speech, the allowable noise or sound level at the property line should not exceed 45 dBA.

Section 19.42.030 also limits the use of powered equipment used on a temporary, occasional or infrequent basis that produces a noise greater than the applicable operational noise limit set by Section 19.42.030 to daytime hours when used adjacent to a property with a residential zoning district.[3] Powered equipment used on other than a temporary, occasional or infrequent basis must comply with the operational noise requirements in Section 19.42.030. Powered equipment does not include leaf blowers. In addition, construction activity is not regulated by Section 19.42.030.

Table 4: City Noise Level, shows the maximum noise levels according to the Municipal Code. It should be noted that the standards in *Table 4* apply to stationary noise levels that are generated on a property. The land use compatibility standards in *Figure 4* are guidelines and are generally used to evaluate land use and transportation noise compatibility.

Table 4: City Noise Level Standards

Time	Maximum Noise Level (dBA L_{eq})	Notes
Anytime	75 dBA	At any point on the property line of the property from which the noise emanates
Nighttime	50 dBA	On adjacent residentially zoned property
Daytime	60 dBA	On adjacent residentially zoned property

Source: City of Sunnyvale Municipal Code Ch. 19.42.030

[2] Sunnyvale Municipal Code Section 19.12.160(6) defines "operational noise" as continuous or frequent noise related to the basic use of a property. Operational noise includes, but is not limited to, noise produced by air conditioners, equipment for swimming pools or spas, industrial machinery, air compressors, or forklifts. Powered equipment or deliveries shall not be considered operational noise.

[3] Sunnyvale Municipal Code Section 19.12.170(8) defines "powered equipment" as a motorized device powered by electricity or fuel used for construction, demolition, property or landscape maintenance, and repairs. Powered equipment includes, but is not limited to lawn mowers, edgers, leaf blowers, parking lot sweepers, saws, sanders, motors, pumps, generators, blowers, fans, wood chippers, vacuums.

Deliveries

The City of Sunnyvale Municipal Code (Section 19.42.030[c]) prohibits nighttime deliveries to commercial or industrial establishments when the loading/unloading area is adjacent to a residential zoning district.

Landscaping

The City of Sunnyvale Municipal Code (Section 19.42.030[d]) limits the noise level of leaf blowers operated in or adjacent to a residential area at or below 65 dBA at a distance of 50 feet. Leaf blowers are prohibited from operating on private property in or adjacent to a residential area between 8:00 p.m. and 8:00 a.m.

Stationary Noise

Section 19.48.100 of the Municipal Code requires mechanical equipment to be located within side or rear yards, screened from view, which would provide some noise shielding as these areas are typically within property line fences/walls. In addition, the code requires all mechanical equipment to comply with City of Sunnyvale noise limits, as defined by Section 19.42.030 of the code.

4 EXISTING CONDITIONS

4.1 Existing Noise Sources

The City is impacted by various noise sources. Mobile sources of noise, especially cars, trucks, and trains are the most common and significant sources of noise. Other noise sources are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the City that generate stationary-source noise.

Mobile Sources

Existing roadway noise levels were calculated for the roadway segments in the project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from the project traffic impact analysis (Kimley-Horn 2018). The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (also referred to as energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along roadway segments in proximity to the Project site are included in *Table 5: Traffic Noise Levels.*

Table 5: Traffic Noise Levels

Roadway Segment	Existing Conditions	
	ADT	dBA L_{dn} 100 feet from Roadway Centerline
Kifer Road		
Wolfe Road and Commercial Street	10,885	61.9
Commercial Street and Semiconductor Drive	13,970	62.9
Semiconductor Drive and Lawrence Expressway	16,465	63.7
Lawrence Expressway and Corvin Drive	17,455	63.9
Lawrence Expressway		
Oakmead Parkway and Arques Avenue	49,005	71.2
Arques Avenue and Kifer Road	57,980	71.9
Kifer Road and Monroe Street	61,440	72.1
Wolfe Road		
Arques Avenue and Kifer Road	28,245	65.1
Kifer Road and Evelyn Avenue	30,270	65.3
Evelyn Avenue and Reed Avenue	25,370	64.6
Central Expressway		
Corvin Drive and Bowers Avenue	42,275	70.3
Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level		
Source: Based on traffic data provided by Hexagon 2019.		

Caltrain trains currently include diesel locomotive-hauled, bi-level passenger cars. As of 2018, Caltrain operates 46 northbound and 46 southbound (total of 92) trains per weekday between San Jose and San Francisco.[4] After completion of electrification, Caltrain plans to expand its service to 114 weekday trains using a mix of diesel locomotive-hauled rolling stock and new Electric Multiple Units (EMU) trains.

Stationary Sources

The primary sources of stationary noise in the project vicinity are those associated with the operations of adjacent office and industrial uses to the north, east, and west of the site. The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

4.2 Noise Measurements

To determine ambient noise levels in the project area, three 10-minute (short-term) noise measurements were taken using a 3M SoundPro DL-1 Type I integrating sound level meter between 2:37 p.m. and 3:14 p.m. on October 10, 2019; refer to Appendix A for existing noise measurement data and Figure 6: Noise Measurement Locations. Noise Measurement one was taken to represent the ambient noise level south of the Project site across the railroad tracks; Noise Measurement two was taken to represent the ambient noise level west of the Project site adjacent to Kifer Road; and Noise Measurement three was taken to represent the ambient noise level east of the Project site. The primary noise sources that resulted in higher L_{max} values was traffic on Central Expressway, Kifer Road, passing trains, and parking lot noises. *Table 6: Existing Noise Measurements*, provides the ambient noise levels measured at these locations.

Table 6: Existing Noise Measurements

Site	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time
1	Courtyard of apartment complex along Evelyn Terrace West	60.0	59.6	60.5	2:37 p.m.
2	Along Kifer Road west of South area	57.9	50.1	68.6	2:57 p.m.
3	Parking lot east of North area	54.4	50.3	65.4	3:14 p.m.

Source: Noise measurements taken by Kimley-Horn and Associates, October 10, 2019. See Appendix A for noise measurement results.

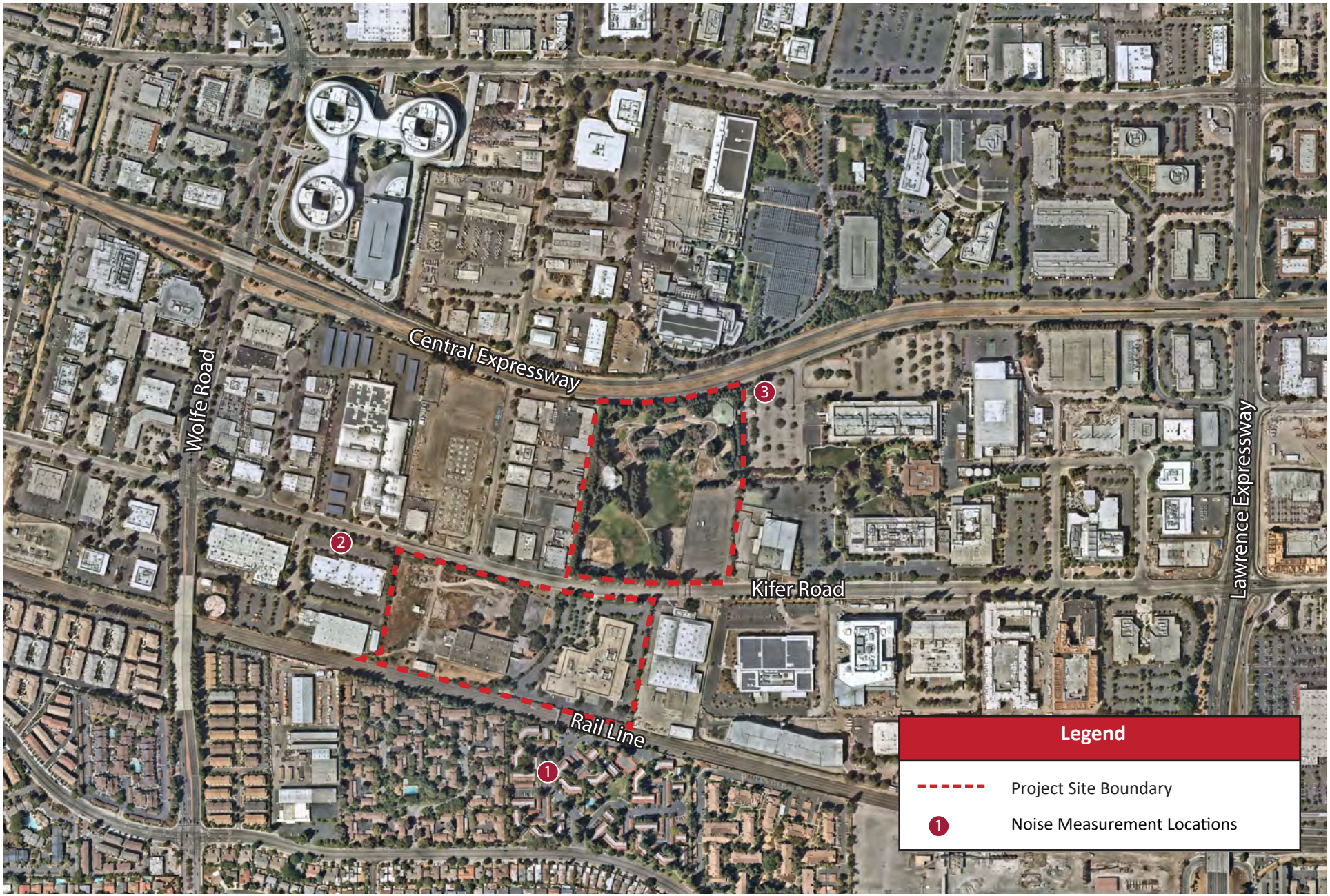
4.3 Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. Sensitive receptors near the Project site include an existing single-family and multi-family communities. *Table 7: Sensitive Receptors*, lists the distances and locations of sensitive receptors within the Project vicinity.

[4] Peninsula Corridor Joint Powers Board (PCJPB), *Caltrain Comprehensive Annual Financial Report*, 2018.

Table 7: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
Multi-Family residences	120 feet south
Single-Family residences	1,990 feet west
Multi-Family residences	2,725 feet north
5 Star School for Music	0.3 miles north
Ellis Elementary School	0.7 miles southwest
Ponderosa Park	0.7 miles south
Murphy Park	1-mile northwest



Source: Nearmap, 2019

Figure 6: Noise Measurement Locations

Intuitive Surgical Campus Project

Not to scale

Kimley»Horn
Expect More. Experience Better.

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains analysis guidelines related to noise impacts. These guidelines have been used by the City to develop thresholds of significance for this analysis. A project would create a significant environmental impact if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive groundborne vibration or groundborne noise levels; and
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

5.2 Methodology

Construction

Construction noise estimates are based upon noise levels from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (FHWA-HEP-05-054) as well as the distance to nearby receptors. Reference noise levels from the FTA document are used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Operations

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Operational noise evaluated in this section include vehicle traffic noise and stationary source noise (e.g., mechanical equipment, on-site trucks/loading docks, parking lot activities etc.). Operational noise is evaluated to determine whether noises are consistent with the City's Compatibility Guidelines. As noted above in Section 3.2, the City of Sunnyvale Municipal Code Chapter 19.42.030(a) and (b) (Noise or Sound Level) identifies the acceptable noise levels. The City of Sunnyvale operational noise shall not exceed 75 dBA L_{eq} at any point on the property line of the premises where the noise is generated. Properties adjacent to residential uses shall not exceed 50 dBA L_{eq} during nighttime and 60 dBA L_{eq} during the daytime at any point on adjacent residentially zoned property. Additionally, Section 19.42.030(c) of the City of Sunnyvale Municipal Code prohibits nighttime deliveries to commercial or industrial establishments when the loading/unloading area is adjacent to a residential zoning district. It should be noted that the Project site is not immediately adjacent to a residentially zoned neighborhood. The residential community is across the railroad tracks to the south of the southern site. Therefore, nighttime deliveries are permitted at both the north and south buildings.

The traffic noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise level significance is determined by comparing the increase in noise levels (traffic contribution only) to increments recognized by Caltrans as representing a perceptible increase in noise levels.

Operational noise is evaluated based on the standards within the City's Noise Ordinance (Ch. 19.42.030: Noise or Sound Level) and the City's General Plan. A significant noise impact would occur if a project exceeds the applicable noise standard (75 dBA) or increases ambient conditions as follows: if ambient noise conditions are in the "normally acceptable" category (70 CNEL in this case), then a noise increase is significant if it would increase noise by more than 3 dBA *and* cause the total Ldn to exceed the "normally acceptable" category *or* increase noise by more than 5 dBA; or if ambient noise conditions are in the conditionally acceptable or unacceptable categories (greater than 70 CNEL in this case), then a noise increase of more than 3 dBA is significant.

Vibration

Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from Federal Transit Administration (FTA) published data for construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

6 POTENTIAL IMPACTS AND MITIGATION

6.1 Acoustical Impacts

Threshold 6.1 Would the Project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

There are two types of short-term noise impacts associated with construction: noise generated from construction equipment operating at the Project site and noise generated from an increase in traffic flow on local streets.

Equipment Noise

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from noise source.

Construction activities would include site preparation, grading, building construction, paving, and architectural coating. Such activities would require graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as from impact equipment or the hydraulic movement of machinery lifts). Typical noise levels associated with individual construction equipment are listed in *Table 8: Typical Construction Noise Levels.*

Sensitive receptors near the Project site include the following: multi-family residences approximately 120 feet south of the site, across the train tracks and single-family residences approximately 0.40 miles (1,990 feet) west of the site. A six-foot masonry wall separates the residences on the south side and the train tracks. As shown in *Table 8*, noise levels at the sensitive receptors are below 80 dBA, except for pile-driving which could reach levels of 93 dBA. The Project does not require the use of pile drivers, and therefore noise levels at the nearest sensitive receptor would be no higher than 80 dBA. Additionally, the six-foot wall would further attenuate noise levels an additional 5 dBA to a maximum noise level of 75 dBA at the nearest sensitive receptor.

The City does not establish quantitative noise limits for construction activities, including demolition, in the City. The City of Sunnyvale Municipal Code Section 16.08.030 (Hours of Construction-Time and Noise Limitations) specifies construction activity shall be permitted between 7:00 a.m. and 6:00 p.m. Monday to Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and prohibited on Sunday or federal holidays when City offices are closed. These hours are intended to mitigate temporary noise impacts by avoiding construction during noise-sensitive periods that would disturb noise-sensitive land uses, primarily residential, or create noise disturbances when the City is unavailable to respond to a noise complaint. The City does have a

qualitative noise limit for construction activities, however, which is an increase in daytime noise levels that would cause substantial annoyance to residents during daytime hours.

Table 8: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 50 feet from Source	Typical Noise Level (dBA) at 120 feet from Source[1]
Air Compressor	80	72
Backhoe	80	72
Compactor	82	74
Concrete Batch Plant	83	75
Concrete Mixer	85	77
Concrete Pump	82	74
Concrete Vibrator	76	68
Crane, Derrick[2]	88	80
Crane, Mobile	83	75
Dozer	85	77
Generator	82	74
Grader	85	77
Impact Wrench	85	77
Jack Hammer	88	80
Loader	80	72
Paver	85	77
Pile-driver (Impact)[2]	101	93
Pile-driver (Sonic)[2]	95	87
Pneumatic Tool	85	77
Pump	77	69
Roller	85	77
Saw	76	68
Scraper	85	77
Shovel	82	74
Truck	84	76

[1] Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1+20Log(d_1/d_2)$
Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance
[2] Equipment not required for Project construction.

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Project construction would include a temporary concrete batch plant which would be located on the northern portion of the south site along Kifer Road. Typical concrete batch plant equipment includes conveyors, elevators, elevated storage bins and silos, weight hoppers, and mixers. The concrete batch plant would operate during the construction phase and would be decommissioned once construction of the basement is completed. The plant would operate during typical construction hours and generate noise levels of typical construction as identified in *Table 8* above. Concrete batch plants generate noise levels of 83 dBA at 50 feet. The nearest sensitive receptor to the concrete batch plant would be approximately 400 feet south. At 400 feet, the concrete batch plant would generate noise levels of approximately 64.9 dBA. With the 6-foot wall at the south site property, noise levels would further attenuate to 59.9 dBA.

As noted above, the City's Municipal Code does not establish quantitative construction noise standards, but instead establishes allowable hours of construction, of which the proposed Project would adhere. In addition, the Project would comply with LUTE EIR Mitigation Measure 3.6.3 (incorporated as a standard condition of approval), which reduces the risk that construction noise would cause substantial annoyance to residents to a less-than-significant level. The standard conditions require projects to implement best management practices during construction and ensure that all construction equipment uses proper mufflers and noise attenuation devices and that construction occurs during the City's allowable hours, consistent with the assumptions in this analysis.

Construction Traffic Noise

Construction noise may be generated by large trucks moving materials to and from the Project site. Large trucks would be necessary to deliver materials for the new approximately 363,000 square-foot building on the north area and 850,000 square-foot building on the south area. The Project would include demolition of 172,806 square feet of existing buildings. Grading would be approximately 3.5 months and require approximately 570,000 cubic yards of export, which would result in approximately 71,250 roundtrip truck hauling trips. Building Construction would result in approximately 1,003 roundtrip construction trips per day (687 worker trips and 316 vendor trips per day) over approximately 14 months. Noise generated from construction traffic would increase short-term noise, however these noise levels are temporary and would cease once construction is complete. The trucks associated with construction would occur during the allowable hours for construction specified in the Municipal Code (7:00 a.m. to 6:00 p.m. on weekdays and 7:00 a.m. to 5:00 p.m. on Saturdays). Delivery trucks, haul trucks, and worker vehicles associated with the construction of the proposed Project would vary from day to day, with the highest volumes generally occurring during construction initiation.

The Project's off-site construction noise impact from haul trucks was analyzed by using the FHWA RD-77-108 model to quantify noise from the Project's maximum estimated haul truck usage with existing traffic and roadway noise levels along the potential haul routes. The location of roadside sensitive receptors was also considered. As the Project would require haul trucks over the course of the construction period to accommodate the soil off haul necessary for construction. The addition of haul trucks would alter the fleet mix of haul route roadways. This effect was accounted for by adjusting the fleet mix (i.e., increasing the truck percentages) in the FHWA RD-77-108 model.

Table 9: Construction Traffic Noise Levels provides the predicted noise levels at nearby roadway segments near the Project site. As shown in *Table 9*, roadway noise levels would range from 61.9 dBA to 72.1 dBA under existing conditions and from 64.7 dBA to 72.4 dBA under existing conditions plus Project construction. The greatest change in noise levels would occur along Kifer Road. Construction traffic would result in an increase in ambient noise levels of up to 2.8 dBA. This increase in ambient noise levels is below the perceptible range (3.0 dBA). Additionally, this increase would occur within a commercial area (i.e., not along residences) where the existing traffic noise level is 61.9 dBA and would not exceed the City's 70 dBA normally acceptable land use compatibility noise standard. Therefore, a less than significant impact would occur. The traffic noise along Wolfe also would remain below 70 dBA with the addition of the Project's construction traffic. Traffic noise on Lawrence Expressway already exceeds 70 dBA under existing conditions and the Project's construction traffic would not perceptibly alter those noise levels.

Table 9: Construction Traffic Noise Levels						
Roadway Segment	**Existing Without Project**		**Existing Plus Project Construction Truck Trips**		**Change**	**Significant Impact?**
	ADT	**dBA CNEL at 100 feet from Roadway Centerline**	**ADT**	**dBA CNEL at 100 feet from Roadway Centerline**		
Kifer Road						
Wolfe Road and Commercial Street	10,885	61.9	11,273	64.7	2.8	No
Commercial Street and Semiconductor Drive	13,970	62.9	14,358	65.3	2.3	No
Semiconductor Drive and Lawrence Expressway	16,465	63.7	16,853	65.7	2.0	No
Lawrence Expressway and Corvin Drive	17,455	63.9	17,848	65.8	1.9	No
Lawrence Expressway						
Oakmead Parkway and Arques Avenue	49,005	71.2	49,199	71.5	0.3	No
Arques Avenue and Kifer Road	57,980	71.9	58,174	72.2	0.3	No
Kifer Road and Monroe Street	61,440	72.1	61,634	72.4	0.3	No
Wolfe Road						
Arques Avenue and Kifer Road	28,245	65.1	28,439	66.2	1.1	No
Kifer Road and Evelyn Avenue	30,270	65.3	30,464	66.4	1.1	No
Evelyn Avenue and Reed Avenue	25,370	64.6	25,564	65.7	1.1	No
Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level						
Source: Based on traffic data provided by Hexagon 2019.						

Operations

Stationary Noise Sources

Project implementation would create new noise sources near the Project. Typical noise in office and R&D campuses includes mechanical equipment, parking area, loading area, and landscaping activities. Noise from office stationary sources would primarily occur during the daytime activity hours of 7:00 a.m. to 8:00 p.m. Further, the campus would be required to comply with the General Plan and Municipal Code noise standards.

Mechanical Equipment. Municipal Code Section 19.42.030 notes that operational noise may not exceed 75 dBA at any point on the property line of the premises upon which the noise or sound is generated or produced. Additionally, Municipal Code Section 19.42.030 states that the noise or sound level may not exceed 50 dBA during nighttime or 60 dBA during daytime hours at any point on adjacent residentially zoned property. Section 19.48.100 of the City's Municipal Code stipulates that mechanical equipment, including HVAC units, cannot be located between the face of the building and the street, and must be screened from view.

The north area mechanical equipment would include an emergency generator which would be located approximately 0.23 miles (approximately 1,200 feet) north of the closest sensitive receptor. The north area generator would be located underground in the basement of the building. As the generator would be fully enclosed underground, it would not be heard at the property lines. Therefore, noise levels in the north area would not exceed City's standard of 75 dBA at the property line. Additionally, it should be

noted that the emergency backup generator would be considered powered equipment under the Sunnyvale Municipal Code and is subject to Section 19.420.030(b), which allows such equipment to be used on a temporary, occasional, or infrequent basis during daytime hours.

The south area Central Utility Plant would be located in rooms on the south side of the proposed parking structure, and would be adjacent to the existing railway line. The south area Central Utility Plant would be located approximately 140 feet north of the nearest sensitive receptors and would house chillers, heat pumps, cooling towers and the emergency generator. Based on equipment manufacturer specifications, the chillers, heat pumps, and cooling towers at the south area would have a combined noise level of 66 dBA at 50 feet, assuming all equipment is operating simultaneously, and there was no enclosure around the equipment. The solid wall enclosure surrounding the equipment would reduce these noise levels to 56 dBA or less at 50 feet. The emergency generator would be fully enclosed on the first level of the parking garage.

The south area Central Utility Plant would be approximately 33 feet from the closest property line. Based on the combined noise level of 56 dBA at 50 feet, the chillers, heat pumps, and cooling towers at 33 feet would have a noise level of 60 dBA. Therefore, noise levels would not exceed City's standard of 75 dBA at the property line. Based upon the 140-foot distance for the south area Central Utility Plant to the closest sensitive receptors, noise levels would attenuate to approximately 47 dBA. Additionally, the 6-foot masonry wall separating the railway line and the residences south of the Project site would further reduce noise levels 5 dBA. Therefore, the Central Utility Plant would generate noise levels of approximately 42 dBA at the nearest sensitive receptors across the train tracks. The Central Utility Plant would not exceed the City's 60 dBA daytime standard and 50 dBA nighttime for residential uses. Exhaust fans would also be at various locations on the roof and would be approximately 120 feet from the closest property line. The exhaust fans typically generate 50 dBA at 50 feet. At 120 feet noise levels would be 42 dBA (37 dBA when accounting for the existing wall), which is below the City's daytime and nighttime standards. Therefore, the stationary noise sources associated with the Project would not exceed the standards set forth in the City's noise ordinance. Potential stationary source noise impacts would be less than significant.

Parking Areas. Surface parking lots currently exist on the Project site. Parking noise also occurs at the adjacent properties under existing conditions. Parking for the proposed Project would be accommodated with small guest surface parking lots and two parking garages. Traffic associated with parking areas is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61.2 dBA L_{max} at a distance of 50 feet and may be an annoyance to adjacent noise-sensitive receptors.[5] Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech. It should be noted that parking area noises are instantaneous noise levels compared to noise standards in the hourly L_{eq} metric, which are averaged over the entire duration of a time period.

Parking noise would be partially masked by background noise from traffic along Kifer Road, Central Expressway, Lawrence Expressway, and Wolfe Road and the existing railroad operations. Noise from the parking garages is anticipated to be lower than the reference levels identified above, as parking would occur in structures that would be predominantly enclosed. Additionally, the parking garage on the north

[5] Kariel, H. G., Noise in Rural Recreational Environments, Canadian Acoustics 19(5), 3-10, 1991.

area offers only underground parking, and thus is totally enclosed. The south area parking structure would be located between Kifer Road and the existing railroad tracks. The nearest sensitive receptors would be located across the railroad tracks approximately 160 feet south of the proposed garage.

For the purpose of providing a conservative, quantitative estimate of the noise levels that would be generated from the vehicles entering and exiting the Project's parking structure, the methodology recommended by FTA for the general assessment of stationary transit noise sources is used. Using the methodology, the Project's peak hourly noise level that would be generated by the on-site parking levels was estimated using the following FTA equation for a parking area:

$$L_{eq(h)} = SEL_{ref} + 10\log(NA/1{,}000) - 35.6$$

Where:

$L_{eq(h)}$ = hourly L_{eq} noise level at 50 feet
SEL_{ref} = reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet
NA = number of automobiles per hour
35.6 is a constant in the formula, calculated as 10 times the logarithm of the number of seconds in an hour

Based on the peak hour trip generation rates in the Traffic Impact Study, the Project would generate a maximum of 808 peak hour trips (approximately 242 peak hour trips to the north building and 566 peak hour trips to the south building). Parking activities (including typical vehicle arrival and departure) generate a SEL[6] of 92 dBA[7] at a distance of 50 feet. Using the formula above, the Project's highest peak hour vehicle trips would generate noise levels of approximately 50.2 dBA L_{eq} at 50 feet from the parking area associated with the north building and 53.9 dBA L_{eq} at 50 feet from the parking area associated with the south building. The closest sensitive receptors located approximately 890 feet from the north building parking area and 170 feet from the south building parking area (south of the railroad). At these distances, parking noise levels from the north and south building would attenuate to 25.2 dBA and 43.3 dBA, respectively. Therefore, parking noise would not exceed the City's 60 dBA daytime or the 50 dBA nighttime noise standards. It should be noted that these noise levels would occur during the peak hour. During other hours of the day when less overall vehicles arrive and depart from the parking areas, the noise levels would be even lower. It should be noted that an existing concrete masonry unit (CMU) wall is located along the northern property line of the sensitive receptors to the south and would further reduce noise levels by approximately 5 dBA[8] beyond what has been identified above.

Additionally, as noted above, the north area parking structure would be located under the proposed building on that site, in an underground garage, and approximately 900 feet from the nearest sensitive receptor. Based on this distance and the acoustic shielding provided by the garage, noise levels would be imperceptible at the nearest sensitive receptor. Noise impacts would less than significant in this regard.

[6] The sound exposure level (SEL) was used to quantify the noise levels from typical parking lot noise. SEL is the cumulative noise exposure from a single noise event, normalized to one second. SEL contains the same overall sound energy as the actual varying sound energy during the event. It is the primary metric for the measurement of transit vehicle noise emissions and is an intermediate metric in the measurement and calculation of both Leq(t) and Ldn.

[7] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

[8] Federal Highway Administration, *FHWA Roadway Construction Noise Model User's Guide*, January 2006.

Loading Area. The proposed Project includes office/R&D and manufacturing that would necessitate occasional truck delivery operations. The deliveries would occur at each of the buildings, a maximum of 43 deliveries per day are expected at the north building and a maximum of 160 deliveries per day are expected at the south building. The occasional delivery trucks associated with the Project would not significantly increase noise within the Project area. It should be noted that truck deliveries/operations (including trash pickup trucks) currently occur at the Project site and are not anticipated to increase to a point where additional noise would be perceptible. The primary noise associated with deliveries is the arrival and departure of trucks. Normal deliveries typically occur during daytime hours, but some deliveries may occur during nighttime or early morning hours. As noted above, the Project site is not immediately adjacent to a residentially zoned neighborhood (both the north and south buildings). The closest residential community is across the railroad tracks to the south of the southern site. Therefore, nighttime deliveries are permitted at both the north and south buildings. During loading and unloading activities, noise would be generated by the trucks' diesel engines, exhaust systems, and brakes during low gear shifting' braking activities; backing up toward the docks/loading areas; dropping down the dock ramps; and maneuvering away from the docks.

The Project site is not immediately adjacent to a residentially zoned neighborhood, but the residential community is across the railroad tracks to the south of the southern site. The loading area for the north area would be more than 2,000 feet from the closest sensitive receptors and would be shielded by intervening structures. Therefore, nighttime deliveries are permitted at the northern site. As the southern site is adjacent to the railroad and not adjacent to residential uses, nighttime deliveries are also permitted at the south building. The drive aisle and loading area for the south building would be approximately 170 feet and 185 feet north of the closest sensitive receptors to the south, respectively. A second loading area would be located in the subterranean level of the south building. Loading in the south building subterranean level would be acoustically shielded by the basement and would not generate audible noise on the exterior of the building. See Figure 3 for callout of loading areas.

Delivery truck and loading dock noise is typically 64.4 dBA at a distance of 50 feet.[10] At 170 feet, truck noise would attenuate to 53.8 dBA. As noted above, the existing CMU wall located along the northern property line of the sensitive receptors to the south would further reduce noise levels by approximately 5 dBA[11] or more resulting in truck noise levels of at least 48.8 dBA at the closest sensitive receptors. Therefore, loading area noise would not exceed the City's 60 dBA daytime noise standard or the 50 dBA nighttime standard. It should be noted that these standards are applicable to properties adjacent to residential uses and the Project site is not immediately adjacent to a residentially zoned neighborhood. The closest residential community is across the railroad tracks to the south of the southern site.

Furthermore, loading dock doors would also be surrounded with protective aprons, gaskets, or similar improvements that, when a trailer is docked, would serve as a noise barrier between the interior warehouse activities and the exterior loading area. This would attenuate noise emanating from interior activities, and as such, interior loading and associated activities would be permissible during all hours of the day. Loading area noise would not be an intrusive or significant noise source compared to existing conditions. Impacts resulting from truck delivery and loading activities would be less than significant.

Landscape Maintenance Activities. The proposed Project includes new landscaping that would require periodic maintenance. Noise generated by a gasoline-powered lawnmower is estimated to be

[10] Loading dock reference noise level measurements conducted by Kimley-Horn on December 18, 2018.
[11] Federal Highway Administration, *FHWA Roadway Construction Noise Model User's Guide*, January 2006.

approximately 70 dBA at 5 feet. However, maintenance activities would operate during daytime hours for brief periods of time as allowed by the City Municipal Code and would not permanently increase ambient noise levels in the Project vicinity and would be consistent with activities that currently occur at the surrounding uses. Therefore, with adherence to the City's Municipal Code, impacts associated with landscape maintenance would be less than significant.

Traffic Noise

The Project proposes office/R&D and manufacturing uses. *Table 10: Projected Traffic Noise Levels* provides the predicted noise levels at nearby roadway segments near the Project site. As shown in *Table 10*, roadway noise levels at standard distance of 100 feet from the centerline would range from 61.9 dBA to 72.1 dBA under existing conditions and from 62.9 dBA to 72.2 dBA under existing conditions plus Project. Noise levels at 100 feet from the roadway centerline represent a typical receptor distance from the roadway and also provides a standards distance to compare noise levels from various road segments.

Table 10: Projected Traffic Noise Levels

Roadway Segment	Existing Without Project		Existing Plus Project		Change	Significant Impact?
	ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline		
Kifer Road						
Wolfe Road and Commercial Street	10,885	61.9	13,670	62.9	1.0	No
Commercial Street and Semiconductor Drive	13,970	62.9	17,190	63.8	0.9	No
Semiconductor Drive and Lawrence Expressway	16,465	63.7	19,685	64.5	0.8	No
Lawrence Expressway and Corvin Drive	17,455	63.9	17,585	63.9	0.0	No
Lawrence Expressway						
Oakmead Parkway and Arques Avenue	49,005	71.2	50,695	71.3	0.1	No
Arques Avenue and Kifer Road	57,980	71.9	60,030	72.0	0.1	No
Kifer Road and Monroe Street	61,440	72.1	62,480	72.2	0.1	No
Wolfe Road						
Arques Avenue and Kifer Road	28,245	65.1	29,875	65.3	0.2	No
Kifer Road and Evelyn Avenue	30,270	65.3	31,330	65.5	0.2	No
Evelyn Avenue and Reed Avenue	25,370	64.6	26,430	64.8	0.2	No
Central Expressway						
Corvin Drive and Bowers Avenue	42,275	70.3	42,915	70.3	0.0	No

Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level

Source: Based on traffic data provided by Hexagon 2019.

The Kifer Road and Central Expressway road segments are surrounded by office and industrial uses. With Project traffic, Kifer Road noise levels would not exceed the City's Land Use Compatibility Standard of 70 dBA. Although Central Expressway noise levels exceed 70 dBA, the Project would not increase traffic noise along this segment. Both Lawrence Expressway and Wolfe Road include residential uses and the applicable Land Use Compatibility Standards is 60 dBA. Although traffic noise levels along these roadways exceed the land use compatibility standard, the maximum Project increase along these roads would be 0.2 dBA, which would not be perceptible. The greatest change in noise levels would occur along Kifer Road

between Wolfe Road and Commercial Street. Project-generated traffic would result in an increase in future ambient noise levels of 1.0 dBA. This increase in ambient noise levels is below the perceptible range (3.0 dBA), and a less than significant impact would occur.

Standard Conditions:

SC-1 New development and public projects shall employ site-specific noise attenuation measures during construction to reduce the generation of construction noise and vibration. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by the City. Measures specified in the Noise Control Plan and implemented during construction shall include, at a minimum, the following noise control strategies:

- Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds;
- Impact tools (e.g., jackhammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools; and
- Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.2 Would the Project generate excessive groundborne vibration or groundborne noise levels?

Construction

Project construction has the potential to result in varying degrees of temporary groundborne vibration, depending on the equipment used and operations involved. The FTA has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 in/sec) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet from the source of the vibration. This distance can vary substantially depending on soil composition and underground geological layer between vibration source and receiver. According to the geotechnical reports for the Project, the site consists of stiff soils. These soil types would be considered Class III hard soils according to the Caltrans Transportation and Construction Vibration Guidance Manual (September 2013), which increases vibration levels compared to soft soils.

In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines

show that a vibration level of up to 0.5 in/sec is considered safe and would not result in any construction vibration damage.

Table 11: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet for typical construction equipment in a wide range of soil conditions. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Project construction would not require piles to be driven (i.e., the use of pile drivers would not be required). Soldier beams (i.e., steel beams placed into a drilled hole) would be installed as part of a shoring system. As indicated in *Table 11*, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity. The nearest sensitive receptors are the multi-family residences 120 feet south of the Project site. At the nearest sensitive receptors, the Project construction PPV would reach up to 0.016 in/sec, which is in the range of threshold of perception, but would not cause any building damage, even to very fragile buildings. The vibrations would be temporary and short term, however, and are not anticipated to create a nuisance.

Table 11: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 50 Feet (in/sec) [1, 2]	Peak Particle Velocity at 120 Feet (in/sec) [1, 2]
Large Bulldozer	0.089	0.042	0.016
Caisson Drilling	0.089	0.0342	0.016
Loaded Trucks	0.076	0.036	0.014
Rock Breaker	0.059	0.028	0.011
Jackhammer	0.035	0.016	0.006
Small Bulldozer/Tractors	0.003	0.001	0.000

1. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the equipment to the receiver.
2. PPV levels have been adjusted based on the site's soil type per the Caltrans *Transportation and Construction Vibration Guidance Manual,* September 2013.

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

The closest structures to the construction area would be a mix of office and industrial developments, which would be approximately 50 feet from the closest construction/demolition area. At this distance, maximum construction vibration levels would range from 0.001 to 0.042 inch/second PPV and would not exceed the 0.2 inch/second PPV threshold for damage to buildings like the ones closest to the Project site. Therefore, vibration impacts from Project construction would be less than significant and no mitigation would be required.

Operational

The Project involves office/R&D and manufacturing uses that would not have any groundborne vibration associated with operational activities. The Project would not involve railroads or substantial heavy truck operations or increase the frequency or number of cars per train that Caltrain runs. However, the Project would involve delivery vehicles that would come to the Project site once facilities are operational. The project site is not adjacent to a residential zoning district, and therefore nighttime deliveries are permitted per section 19.42.030(c) of the City of Sunnyvale Municipal Code. Operation of delivery vehicles would be consistent with existing operations and operations on the surrounding uses and roadways and would not

generate perceptible groundborne vibrations. As a result, impacts from vibration associated with Project operation would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.3 For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The nearest public airport is the Moffett Federal Airfield, approximately 2.5 miles northwest of the site. The Norman Y. Mineta San Jose International Airport is located approximately 3.4 miles east of the site and Palo Alto Airport approximately 8.1 miles northwest of the site. As such, the Project is not located within an airport land use plan nor is it located within two miles of a public airport. Therefore, no impacts would occur. Additionally, there are no private airstrips or airports near the City of Sunnyvale and the Project site. Therefore, no impacts would occur.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6.2 Cumulative Noise Impacts

As discussed above, all Project construction and operational noise impacts would be less than significant. Construction noise impacts are by nature localized. Based on the fact that noise dissipates as it travels away from its source, noise impacts would be limited to the Project site and vicinity.

Construction activities at other planned and approved projects near the Project site would be required to comply with City rules related to noise and would take place during daytime hours on the days permitted by the Municipal Code, and projects requiring discretionary City approvals would be required to evaluate construction noise impacts, comply with the City's standard conditions of approval, and implement mitigation, if necessary, to minimize noise impacts. The timing of construction activities associated with this or other development projects would overlap minimally, if at all with the Project. The Project would be required to implement SC-1 to minimize construction noise and impacts are considered less than significant. Furthermore, because construction noise is a highly localized, even if construction activities did overlap in time with the Project, the intervening distance between projects would diminish any additive effects. Given these distances, topography, and the intervening structures, the Project, together with other nearby projects that may be under construction at the same time, would not create a significant cumulative impact from construction noise. In addition, Project construction would not make a cumulatively considerable contribution to significant cumulative impacts, assuming such a cumulative impact existed, and impacts in this regard are not cumulatively considerable.

The Project's construction vibration levels would not exceed annoyance thresholds therefore, the Project's incremental contribution is not cumulatively considerable. Given that vibration propagates in waves through the soil, multiple pieces of equipment operating simultaneously would each produce vibration waves in different phases that typically would not increase the magnitude of the vibration. Furthermore, vibration is a localized phenomenon, and tends to dissipate to insignificant levels within dozens of feet, as discussed in Threshold 6.2. Thus, there would be no possibility for vibration associated

with the Project to combine with vibration from other projects because of their distances from the Project site. Therefore, the cumulative vibration impacts would be cumulatively less than significant.

As discussed above, operational noise caused by the proposed Project would be less than significant. Stationary noise sources of the proposed Project would result in an incremental increase in non-transportation noise sources in the Project vicinity. However, stationary sources of noise were analyzed and would comply with City noise standards. Additionally, due to site distance to sensitive receptors and intervening railroad tracks to the south (which increase existing ambient noise levels), cumulative stationary noise impacts would not occur. Similar to the proposed Project, other planned and approved projects would be required to mitigate for stationary noise impacts at nearby sensitive receptors, if necessary. As stationary noise sources are generally localized, there is a limited potential for other projects to contribute to cumulative noise impacts.

The Project would generate a maximum of approximately 11,528 vehicle trips per day (round trips). The surrounding roadways analyzed above include Kifer Road, Lawrence Expressway, Wolfe Road, and Central Expressway. Kifer Road and Central Expressway near the Project site are both surrounded by office and industrial uses and therefore the City's Land Use Compatibility Standard of 70 dBA would apply. Kifer Road has an existing noise level between 61.9 dBA and 63.9 dBA that would increase to 62.9 dBA to 63.9 dBA with the Project. These resulting noise levels would increase by 1.0 dBA or less and noise levels would remain under the 70 dBA standard. Central Expressway existing noise levels are 70.3 dBA and would remain unchanged with the Project.

Both Lawrence Expressway and Wolfe Road near the Project site include residential uses meaning the Land Use Compatibility Standards is 60 dBA. Lawrence Expressway noise levels without the Project ranges from 71.2 dBA to 72.1 dBA. The Project would increase noise levels to 71.3 dBA and 72.2 dBA. While these noise levels are above the 60 dBA Land Use Compatibility Standard, the change due to the Project is 0.1 dBA and therefore less than the perceptible 3.0 dBA noise level. Wolfe Road has an existing noise level between 64.7 dBA and 65.3 dBA and with the Project the noise levels increase to 64.8 dBA and 65.5 dBA. While these noise levels are above the standard for residential areas, the change due to the Project is 0.2 dBA and less than the perceptible level of 3 dBA. Although traffic noise levels along several roadway segments exceed the Land Use Compatibility Standard, the maximum increase caused by the Project would be imperceptible. Therefore, the Project would make a cumulatively considerable contribution to existing significant cumulative traffic noise levels on Lawrence, Wolfe, and Central and would not create a significant cumulative impact along Kifer when the Project's noise is added to existing and reasonably foreseeable future noise. It should be noted that cumulative traffic in future years would increase and the Project's trip generation would not change. The increase of the background cumulative projects would further diminish the Project's traffic noise contribution.

No known past, present, or reasonably foreseeable projects would combine with the operational noise levels generated by the Project to increase noise levels above levels acceptable by the City because each project must comply with City regulations that limit operational noises to no more than 75 dBA at the property line, and 60 dBA at residential areas during daytime and 50 dBA at residential areas during nighttime. Therefore, the Project, together with other projects, would not create a significant cumulative impact relative to temporary and permanent noise generation, and even if there was such a significant cumulative impact, the Project would not make a cumulatively considerable contribution to significant cumulative operational noises.

7 REFERENCES

1. California Department of Transportation, *California Vehicle Noise Emission Levels*, 1987.
2. California Department of Transportation, *Traffic Noise Analysis Protocol*, 2011.
3. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013.
4. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2013.
5. City of Sunnyvale, *General Plan*, 2011.
6. City of Sunnyvale, *Municipal Code*, August 2019.
7. City of Sunnyvale, *Land Use and Transportation Element Draft Environmental Impact Report*, August 2016.
8. City of Sunnyvale, *Land Use and Transportation Element Final Environmental Impact Report*, January 2017.
9. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
10. Federal Highway Administration, *Roadway Construction Noise Model User's Guide Final Report*, 2006.
11. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.
12. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.
13. Hexagon Transportation Consultants Inc., *Intuitive Surgical Trip Generation Estimates,* October 2019.

Appendix A

Noise Data

Noise Measurement Field Data

Project:	Intuitive	**Job Number:**	197041002
Site No.:	1	**Date:**	10-Oct
Analyst:	Sophia Lai	**Time:**	2:37 PM
Location:	Within the CourtYard apartment complex along Evelyn Terrace W.		
Noise Sources:	Caltrain passed by. Car drove by. Lawn mower being used next to Caltrain tracks.		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
60.0	59.6	60.5	88.5

Equipment	
Sound Level Meter:	SoundPro DL
Calibrator:	AC-300
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	72
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.13
Humidity:	62.00

Photo:



Kimley»Horn

Session Report

10/11/2019

Information Panel

Name	S014_BLL100004_11102019_084406
Start Time	10/10/2019 2:36:20 PM
Stop Time	10/10/2019 2:46:37 PM
Device Name	BLL100004
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

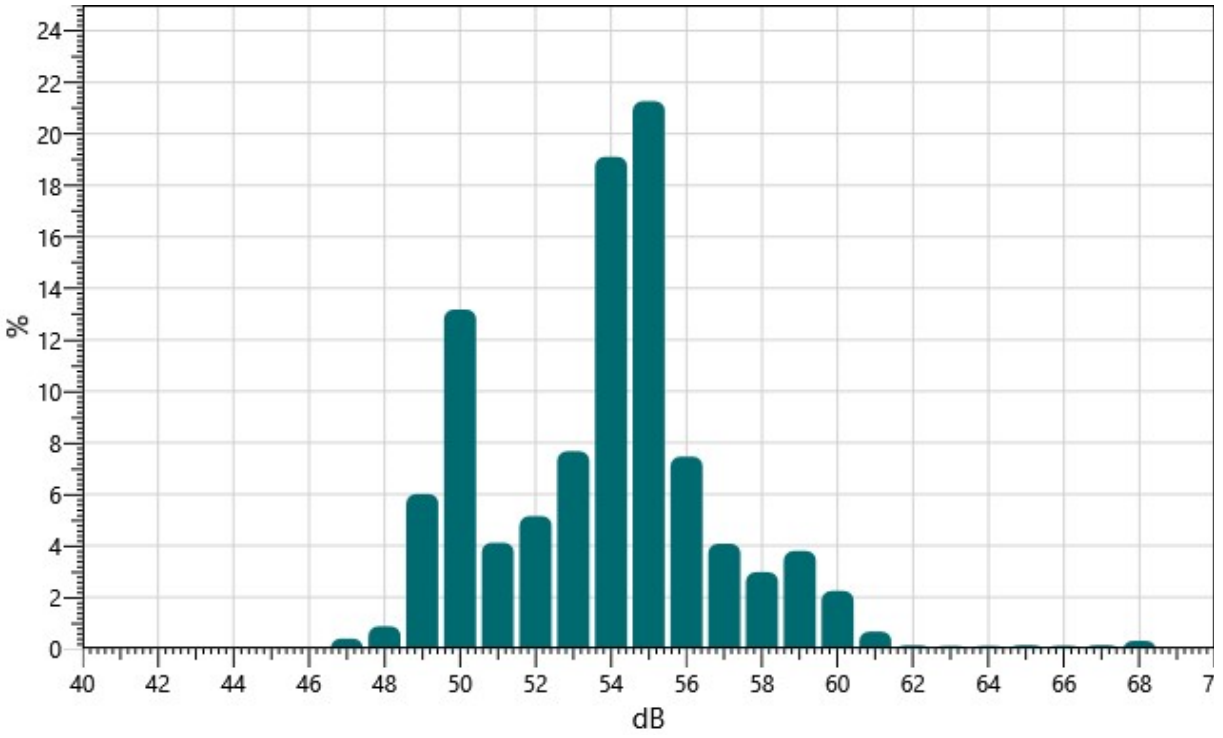
Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	--	CNEL	1	55.6 dB
Dose	1	0 %	Dose8	1	0.8 %
L1	1	62.1 dB	L10	1	58 dB
L50	1	54.6 dB	L90	1	50.1 dB
Lavg	1	55 dB	LDN	1	55.6 dB
Lmax	1	68.9 dB	Lmin	1	47.6 dB
Lpk	1	88.6 dB	Mntime	1	10/10/2019 2:37:28 PM
Mxtime	1	10/10/2019 2:39:16 PM	OL%	1	0.4 %
Pdose (15:00)	1	1.5 %	PKtime	1	10/10/2019 2:39:14 PM
ProjectedTWA (15:00)	1	59.6 dB	Rtime	1	00:10:02
SEL	1	101.2 dB	Takt	1	56.6 dB
TWA	1	27.1 dB	UL Time	1	00:00:00
UR%	1	0 %			
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Count Rate	1	64 #	Criterion Level	1	90 dB
Criterion Time	1	8 hrs.	Int Threshold Enable	1	False
Integrating Threshold	1	100 dB	Ln1	1	1 %
Ln2	1	10 %	Ln3	1	50 %
Ln4	1	90 %	Log Rate	1	60 s
Meter Floor	1	-20 dB	Peak Weighting	1	A

Projection Time	1	900 mins.	ULL	1	130 dB
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

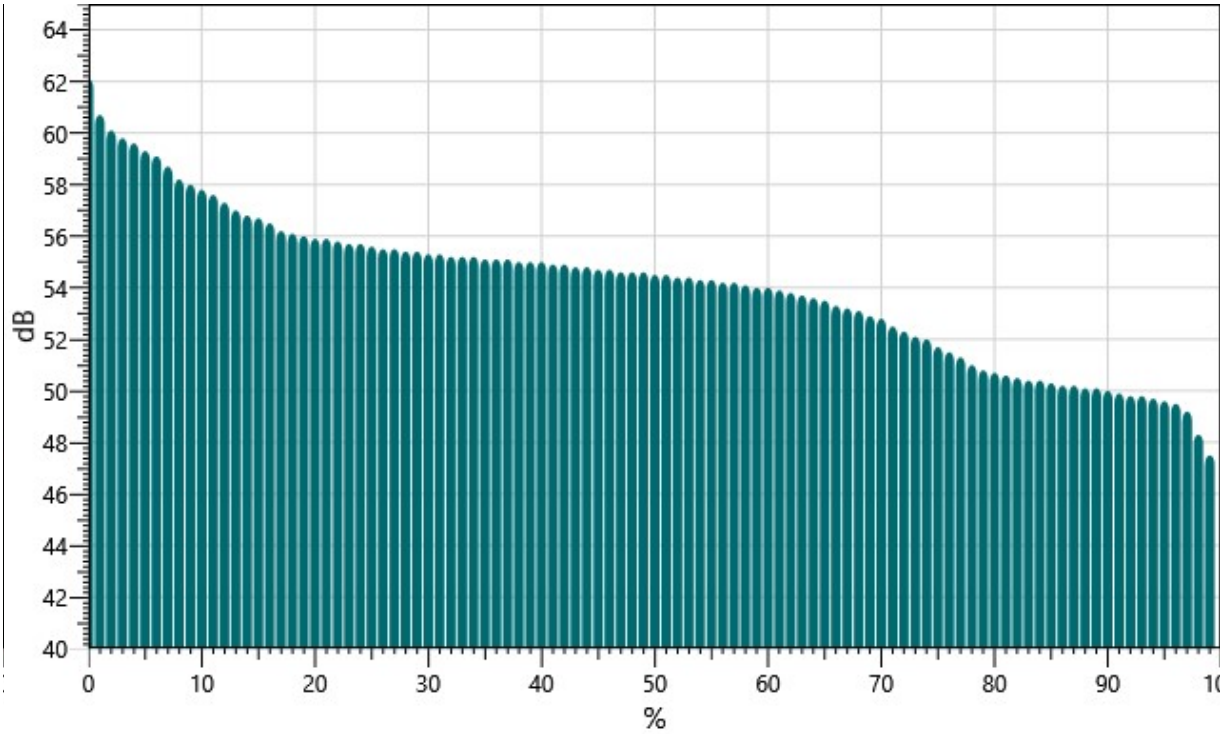
Statistics Chart

S014_BLL100004_11102019_084406: Statistics Chart



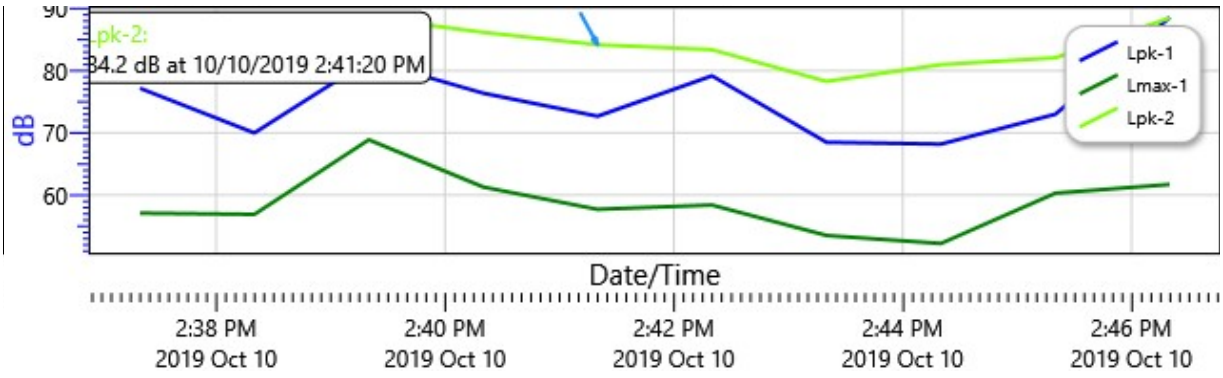
Exceedance Chart

S014_BLL100004_11102019_084406: Exceedance Chart



Logged Data Chart

S014_BLL100004_11102019_084406: Logged Data Chart



Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

45:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47:	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.17	0.12	0.07	0.39
48:	0.14	0.21	0.06	0.16	0.06	0.04	0.07	0.05	0.03	0.05	0.86
49:	0.05	0.26	0.29	0.17	0.08	0.44	1.05	0.90	1.07	1.71	6.01
50:	0.91	1.35	1.84	1.79	1.44	1.66	1.59	0.93	0.98	0.70	13.17
51:	0.42	0.31	0.42	0.39	0.44	0.55	0.43	0.30	0.41	0.45	4.11
52:	0.43	0.60	0.90	0.39	0.18	0.57	0.46	0.39	0.46	0.76	5.15
53:	0.51	0.64	0.67	0.89	0.70	0.65	0.80	0.89	0.85	1.06	7.67
54:	1.19	1.67	1.43	1.80	2.31	1.94	1.96	2.45	2.32	2.04	19.11
55:	2.16	2.87	3.31	3.12	1.24	2.09	1.88	1.39	1.55	1.64	21.27
56:	1.41	1.22	0.95	0.75	0.46	0.40	0.35	0.64	0.70	0.60	7.46
57:	0.56	0.56	0.30	0.26	0.23	0.41	0.40	0.36	0.45	0.55	4.08
58:	0.51	0.38	0.43	0.41	0.16	0.25	0.24	0.19	0.21	0.19	2.97
59:	0.32	0.39	0.31	0.39	0.44	0.39	0.43	0.40	0.44	0.28	3.79
60:	0.43	0.32	0.22	0.18	0.12	0.11	0.19	0.29	0.16	0.22	2.24
61:	0.12	0.10	0.07	0.04	0.04	0.04	0.14	0.07	0.02	0.02	0.66
62:	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.13
63:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.11
64:	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.11
65:	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.13
66:	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.12
67:	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.13
68:	0.02	0.03	0.02	0.03	0.02	0.04	0.07	0.04	0.02	0.03	0.31
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		62.1	60.7	60.1	59.8	59.6	59.3	59.1	58.7	58.2
10%:	58.0	57.8	57.6	57.3	57.0	56.8	56.7	56.5	56.2	56.1
20%:	56.0	55.9	55.9	55.8	55.7	55.7	55.6	55.5	55.5	55.4
30%:	55.4	55.3	55.3	55.2	55.2	55.2	55.1	55.1	55.1	55.0
40%:	55.0	55.0	54.9	54.9	54.8	54.8	54.7	54.7	54.6	54.6
50%:	54.6	54.5	54.5	54.4	54.4	54.3	54.3	54.2	54.2	54.1
60%:	54.0	54.0	53.9	53.8	53.7	53.6	53.5	53.3	53.2	53.1
70%:	52.9	52.8	52.5	52.3	52.1	52.0	51.7	51.5	51.3	51.0

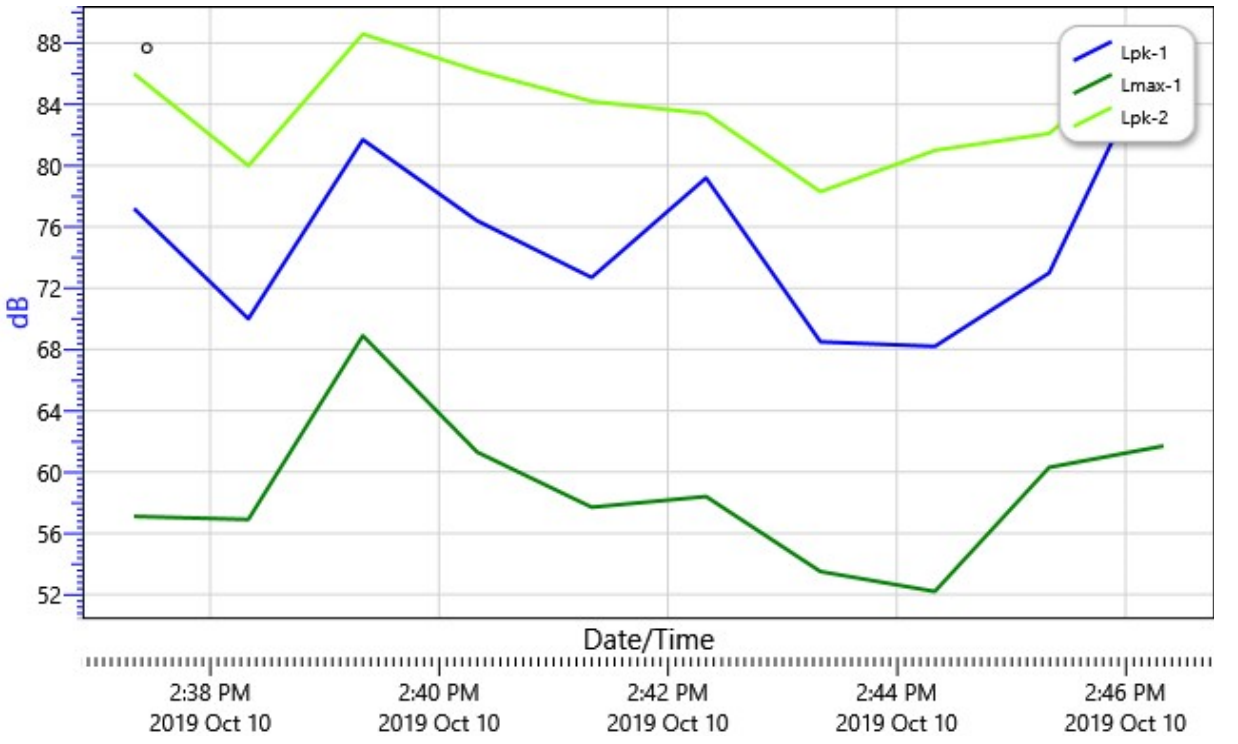
80%:	50.8	50.7	50.6	50.5	50.4	50.4	50.3	50.2	50.2	50.1
90%:	50.1	50.0	49.9	49.8	49.8	49.7	49.6	49.5	49.2	48.3
100%:	47.5									

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Dose	1	0 %	Lpk	1	88.6 dB
Lmax	1	68.9 dB			
Weighting	1	A	Response	1	SLOW
Bandwidth	1	1/3	Exchange Rate	1	5 dB
Integrating Threshold	1	100 dB	Log Rate	1	60 s
Exchange Rate	2	3 dB	Integrating Threshold	2	100 dB
Weighting	2	C	Response	2	SLOW

Logged Data Chart

Study 1: Logged Data Chart



Noise Measurement Field Data

Project:	Intuitive	**Job Number:**	197041002
Site No.:	2	**Date:**	10/10/2019
Analyst:	Sophia Lai	**Time:**	2:57 PM
Location:	Along Kiefer Road		
Noise Sources:	Roadway traffic from Kiefer Road.		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
57.9	50.1	68.6	84.3

Equipment	
Sound Level Meter:	SoundPro DL
Calibrator:	AC-300
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	72
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.13
Humidity:	62.00

Photo:



Kimley»Horn

Session Report

10/11/2019

Information Panel

Name	S015_BLL100004_11102019_084410
Start Time	10/10/2019 2:56:24 PM
Stop Time	10/10/2019 3:06:24 PM
Device Name	BLL100004
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

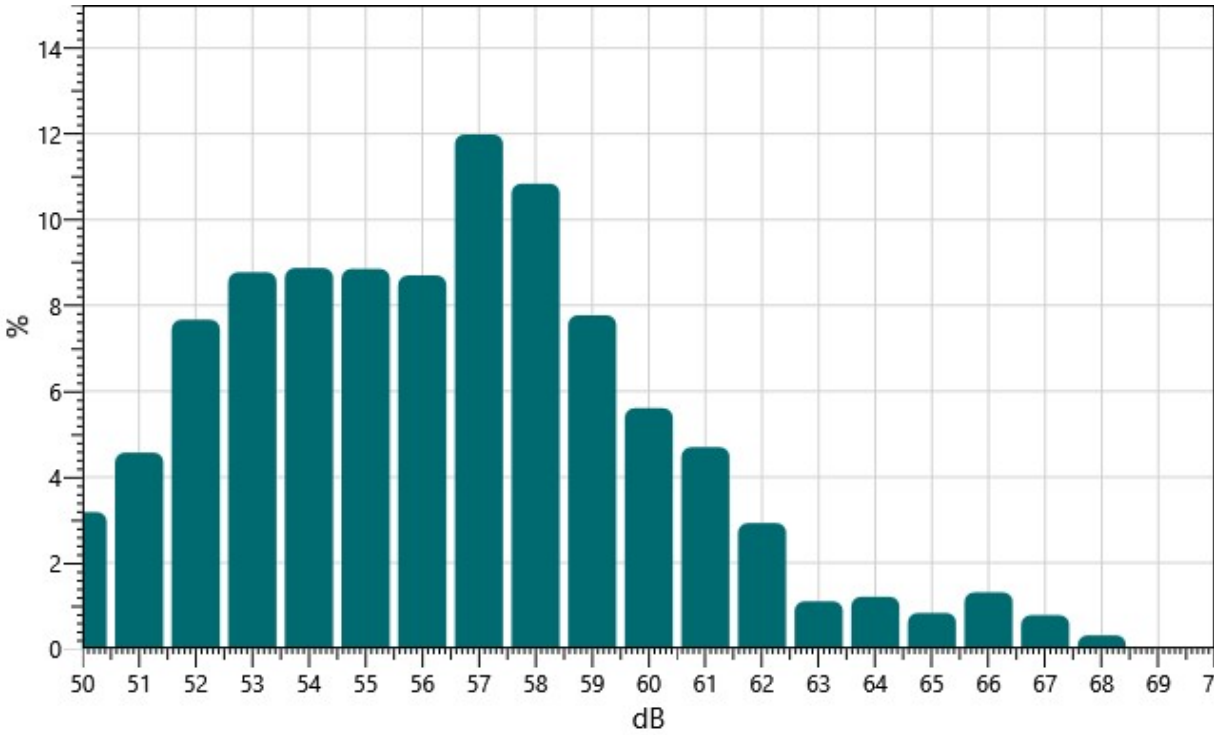
Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	--	CNEL	1	58.6 dB
Dose	1	0 %	Dose8	1	1.2 %
L1	1	66.9 dB	L10	1	61.5 dB
L50	1	56.8 dB	L90	1	52.2 dB
Lavg	1	57.9 dB	LDN	1	58.6 dB
Lmax	1	68.6 dB	Lmin	1	50.1 dB
Lpk	1	84.3 dB	Mntime	1	10/10/2019 2:57:08 PM
Mxtime	1	10/10/2019 3:05:01 PM	OL%	1	13.4 %
Pdose (15:00)	1	2.2 %	PKtime	1	10/10/2019 3:02:07 PM
ProjectedTWA (15:00)	1	62.4 dB	Rtime	1	00:10:00
SEL	1	104 dB	Takt	1	59.8 dB
TWA	1	30 dB	UL Time	1	00:00:00
UR%	1	0 %			
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Count Rate	1	64 #	Criterion Level	1	90 dB
Criterion Time	1	8 hrs.	Int Threshold Enable	1	False
Integrating Threshold	1	100 dB	Ln1	1	1 %
Ln2	1	10 %	Ln3	1	50 %
Ln4	1	90 %	Log Rate	1	60 s
Meter Floor	1	-20 dB	Peak Weighting	1	A

Projection Time	1	900 mins.	ULL	1	130 dB
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

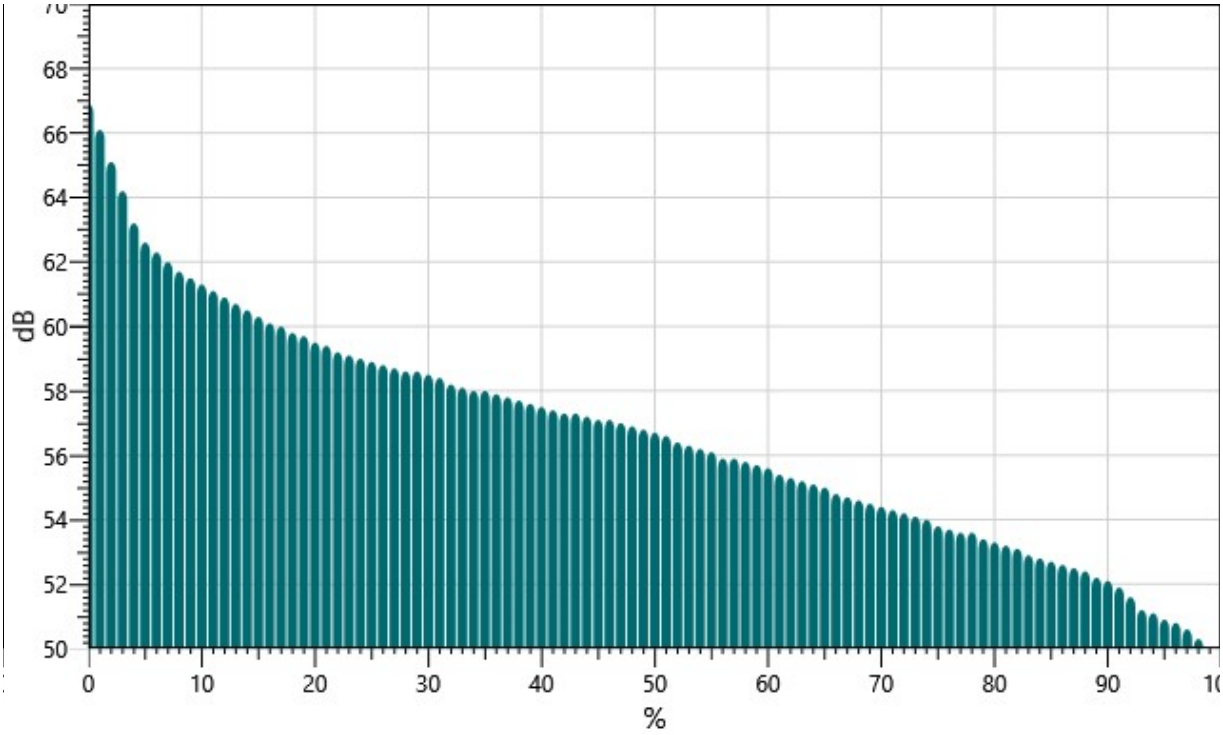
Statistics Chart

S015_BLL100004_11102019_084410: Statistics Chart



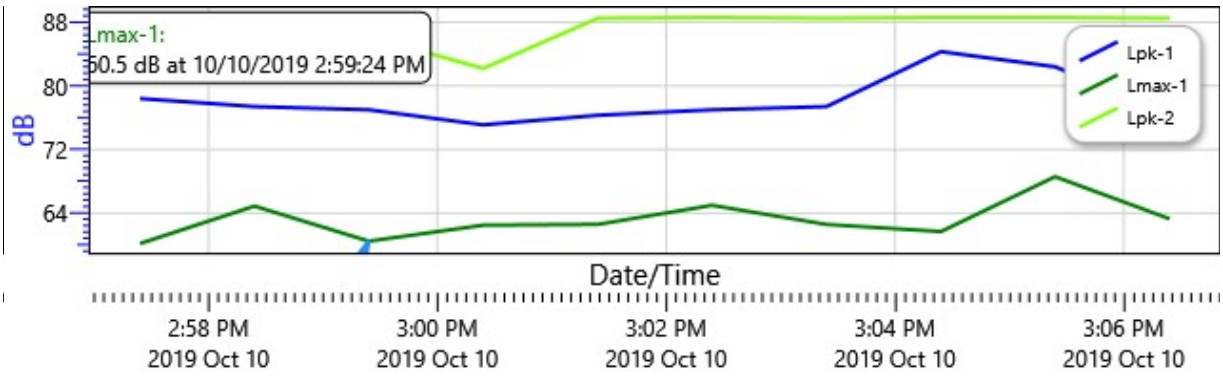
Exceedance Chart

S015_BLL100004_11102019_084410: Exceedance Chart



Logged Data Chart

S015_BLL100004_11102019_084410: Logged Data Chart



Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50:	0.00	0.21	0.24	0.27	0.51	0.39	0.29	0.35	0.45	0.46	3.18
51:	1.00	0.66	0.80	0.65	0.29	0.18	0.15	0.21	0.26	0.35	4.57
52:	0.31	0.67	0.72	1.00	0.33	0.82	0.99	0.98	0.80	1.05	7.67
53:	0.76	0.59	0.76	0.85	0.77	0.90	0.92	1.10	1.21	0.91	8.77
54:	0.80	0.82	0.89	0.99	1.11	0.90	0.83	0.84	0.86	0.82	8.87

55:	0.70	1.09	0.92	1.13	0.50	0.73	0.73	1.01	1.03	1.00	8.85
56:	1.16	0.90	0.79	0.66	0.91	0.69	0.74	1.05	0.79	1.01	8.70
57:	1.03	1.28	1.62	1.34	1.25	1.18	1.22	1.08	1.02	0.95	11.99
58:	1.23	1.51	1.15	0.97	0.53	0.82	1.07	1.14	1.34	1.09	10.84
59:	0.91	0.95	1.09	0.86	0.58	0.73	0.64	0.66	0.67	0.67	7.77
60:	0.65	0.60	0.68	0.62	0.63	0.53	0.54	0.47	0.41	0.47	5.60
61:	0.39	0.46	0.45	0.54	0.47	0.40	0.48	0.55	0.53	0.42	4.70
62:	0.38	0.26	0.28	0.39	0.43	0.45	0.27	0.13	0.15	0.21	2.93
63:	0.18	0.16	0.20	0.08	0.06	0.07	0.07	0.08	0.09	0.11	1.10
64:	0.13	0.15	0.12	0.12	0.09	0.07	0.11	0.12	0.16	0.15	1.21
65:	0.12	0.11	0.10	0.07	0.07	0.07	0.08	0.09	0.07	0.07	0.83
66:	0.07	0.16	0.21	0.15	0.20	0.10	0.13	0.09	0.07	0.13	1.31
67:	0.17	0.10	0.09	0.07	0.08	0.03	0.08	0.05	0.07	0.05	0.78
68:	0.07	0.05	0.03	0.05	0.03	0.04	0.03	0.00	0.00	0.00	0.31
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		66.9	66.1	65.1	64.2	63.2	62.6	62.3	62.0	61.7
10%:	61.5	61.3	61.1	60.9	60.7	60.5	60.3	60.1	60.0	59.8
20%:	59.7	59.5	59.4	59.2	59.1	59.0	58.9	58.8	58.7	58.6
30%:	58.6	58.5	58.4	58.2	58.1	58.0	58.0	57.9	57.8	57.7
40%:	57.6	57.5	57.4	57.3	57.3	57.2	57.1	57.1	57.0	56.9
50%:	56.8	56.7	56.6	56.4	56.3	56.2	56.1	55.9	55.9	55.8
60%:	55.7	55.6	55.4	55.3	55.2	55.1	55.0	54.8	54.7	54.6
70%:	54.5	54.4	54.3	54.2	54.1	54.0	53.8	53.7	53.6	53.6
80%:	53.4	53.3	53.2	53.1	52.9	52.8	52.7	52.6	52.5	52.4
90%:	52.2	52.1	51.9	51.6	51.2	51.1	50.9	50.8	50.6	50.3
100%:	50.0									

Noise Measurement Field Data

Project:	Intuitive	**Job Number:**	197041002
Site No.:	3	**Date:**	10/10/2019
Analyst:	Sophia Lai	**Time:**	3:14 PM
Location:			
Noise Sources:	There was a loud crash from loading dock area at Texas Instruments. Likely from forklift moving stuff		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
54.4	50.3	65.4	88.5

Equipment	
Sound Level Meter:	SoundPro DL
Calibrator:	AC-300
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	72
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.13
Humidity:	62.00

Photo:



Kimley»Horn

Session Report

10/11/2019

Information Panel

Name	S016_BLL100004_11102019_084413
Start Time	10/10/2019 3:14:08 PM
Stop Time	10/10/2019 3:24:08 PM
Device Name	BLL100004
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

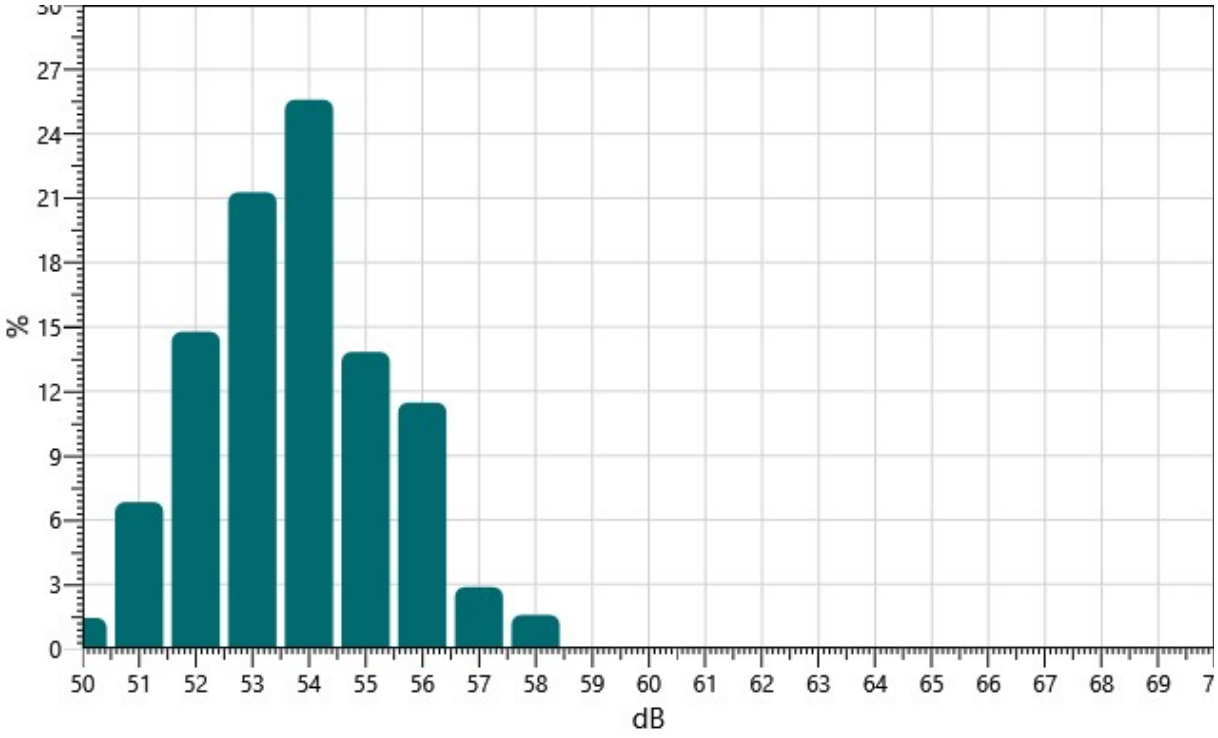
Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	--	CNEL	1	54.5 dB
Dose	1	0 %	Dose8	1	0.7 %
L1	1	58.4 dB	L10	1	56.2 dB
L50	1	54 dB	L90	1	52 dB
Lavg	1	54.4 dB	LDN	1	54.5 dB
Lmax	1	65.4 dB	Lmin	1	50.3 dB
Lpk	1	88.5 dB	Mntime	1	10/10/2019 3:16:14 PM
Mxtime	1	10/10/2019 3:20:42 PM	OL%	1	7.9 %
Pdose (15:00)	1	1.4 %	PKtime	1	10/10/2019 3:18:30 PM
ProjectedTWA (15:00)	1	58.9 dB	Rtime	1	00:10:00
SEL	1	100.5 dB	Takt	1	55.3 dB
TWA	1	26.5 dB	UL Time	1	00:00:00
UR%	1	0 %			
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Count Rate	1	64 #	Criterion Level	1	90 dB
Criterion Time	1	8 hrs.	Int Threshold Enable	1	False
Integrating Threshold	1	100 dB	Ln1	1	1 %
Ln2	1	10 %	Ln3	1	50 %
Ln4	1	90 %	Log Rate	1	60 s
Meter Floor	1	-20 dB	Peak Weighting	1	A

Projection Time	1	900 mins.	ULL	1	130 dB
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

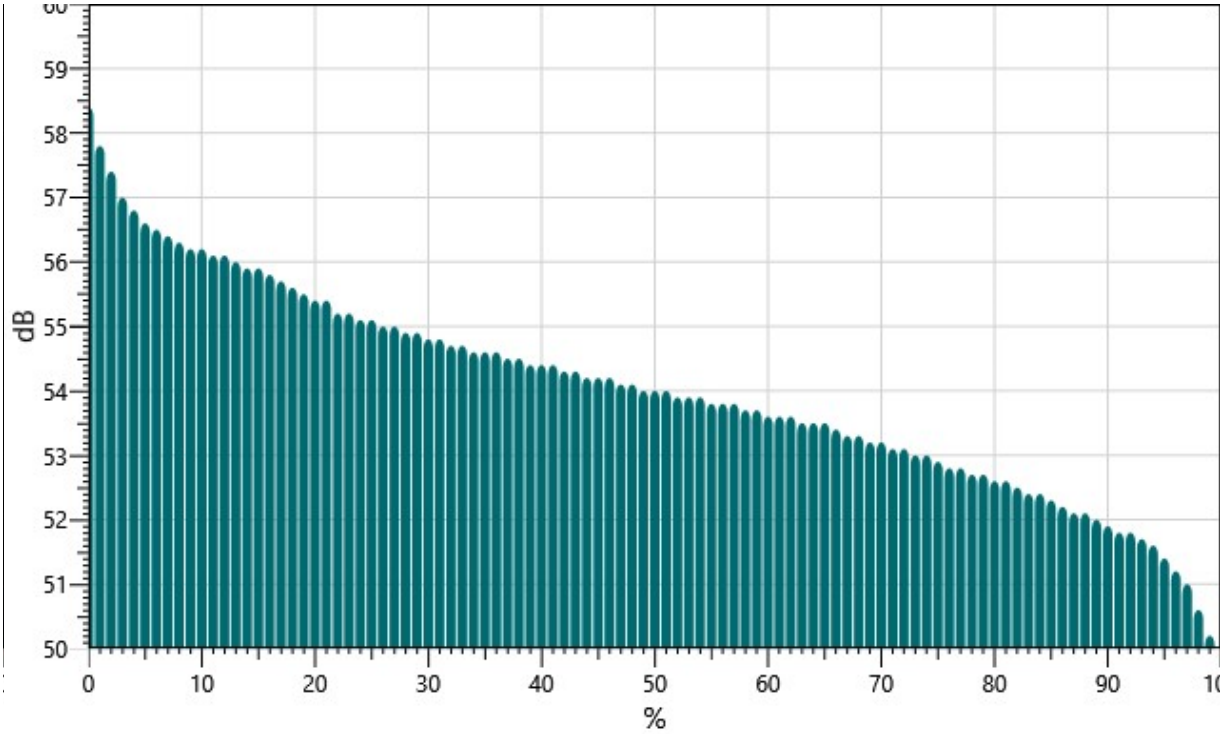
Statistics Chart

S016_BLL100004_11102019_084413: Statistics Chart



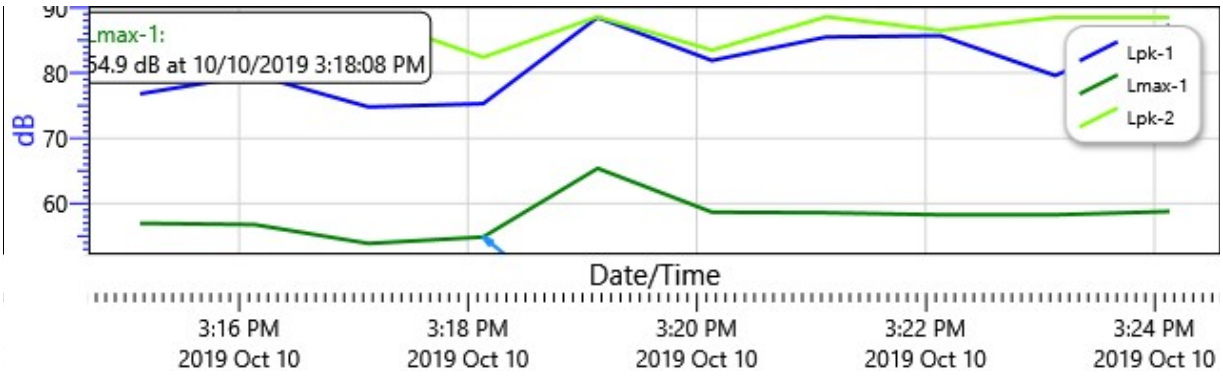
Exceedance Chart

S016_BLL100004_11102019_084413: Exceedance Chart



Logged Data Chart

S016_BLL100004_11102019_084413: Logged Data Chart



Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50:	0.00	0.00	0.00	0.03	0.07	0.14	0.49	0.31	0.26	0.14	1.43
51:	0.32	0.58	0.57	0.49	0.39	0.45	0.58	0.73	1.21	1.52	6.84
52:	1.36	1.25	1.43	1.41	0.60	1.81	1.55	1.68	1.98	1.69	14.77
53:	1.82	1.90	1.57	1.91	1.95	1.78	2.58	3.02	2.23	2.53	21.28
54:	2.90	3.10	2.48	2.21	2.40	2.68	2.79	2.48	2.47	2.10	25.59

55:	1.70	2.15	2.03	1.64	0.52	1.11	1.21	1.27	1.30	0.91	13.83
56:	1.29	1.89	1.54	1.60	1.59	1.31	0.77	0.69	0.42	0.37	11.47
57:	0.41	0.47	0.27	0.24	0.28	0.26	0.23	0.24	0.25	0.22	2.87
58:	0.13	0.09	0.17	0.25	0.10	0.30	0.30	0.12	0.09	0.01	1.57
59:	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.05
60:	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.05
61:	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.04
62:	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.05
63:	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.04
64:	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.05
65:	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.05
66:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		58.4	57.8	57.4	57.0	56.8	56.6	56.5	56.4	56.3
10%:	56.2	56.2	56.1	56.1	56.0	55.9	55.9	55.8	55.7	55.6
20%:	55.5	55.4	55.4	55.2	55.2	55.1	55.1	55.0	55.0	54.9
30%:	54.9	54.8	54.8	54.7	54.7	54.6	54.6	54.6	54.5	54.5
40%:	54.4	54.4	54.4	54.3	54.3	54.2	54.2	54.2	54.1	54.1
50%:	54.0	54.0	54.0	53.9	53.9	53.9	53.8	53.8	53.8	53.7
60%:	53.7	53.6	53.6	53.6	53.5	53.5	53.5	53.4	53.3	53.3
70%:	53.2	53.2	53.1	53.1	53.0	53.0	52.9	52.8	52.8	52.7
80%:	52.7	52.6	52.6	52.5	52.4	52.4	52.3	52.2	52.1	52.1
90%:	52.0	51.9	51.8	51.8	51.7	51.6	51.4	51.2	51.0	50.6
100%:	50.2									

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Intuitive
Project Number: 197041002
Scenario: Existing
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway		
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn
2	Kifer Road	Wolfe Road and Commercial St	4	13	10,855	40	0	2.0%	1.0%	61.9	-	-	153	484
3	Kifer Road	Commercial St and SemiConductor Dr	4	13	13,970	40	0	2.0%	1.0%	62.9	-	62	197	623
4	Kifer Road	SemiConductor Dr and Lawrence Expwy	4	17	16,465	40	0	2.0%	1.0%	63.7	-	74	234	739
5	Kifer Road	Lawrence Expwy and Corvin Dr	4	13	17,455	40	0	2.0%	1.0%	63.9	-	78	246	779
10	Lawrence Expwy	Oakmead Pkwy and Arques Ave	8	20	49,005	50	0	2.0%	1.0%	71.2	130	412	1,303	4,121
11	Lawrence Expwy	Arques Ave and Kifer Rd	8	20	57,980	50	0	2.0%	1.0%	71.9	154	488	1,542	4,876
12	Lawrence Expwy	Kifer Rd and Monroe St	8	20	61,440	50	0	2.0%	1.0%	72.1	163	517	1,634	5,167
17	Wolfe Road	Arques Ave and Kifer Rd	6	25	28,245	35	0	2.0%	1.0%	65.1	-	101	321	1,014
18	Wolfe Road	Kifer Rd and Evelyn Ave	6	20	30,270	35	0	2.0%	1.0%	65.3	-	107	340	1,074
19	Wolfe Road	Evelyn Ave and Reed Ave	6	25	25,370	35	0	2.0%	1.0%	64.6	-	91	288	911
23	Central Expwy	Corvin Dr and Bowers Ave	6	25	42,275	50	0	2.0%	1.0%	70.3	106	335	1,061	3,354

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Intuitive
Project Number: 197041002
Scenario: Existing Plus Project
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway		
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour		
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn
2	Kifer Road	Wolfe Road and Commercial St	4	13	13,670	40	0	2.0%	1.0%	62.9	-	61	193	610
3	Kifer Road	Commercial St and SemiConductor Dr	4	13	17,190	40	0	2.0%	1.0%	63.8	-	77	243	767
4	Kifer Road	SemiConductor Dr and Lawrence Expwy	4	17	19,685	40	0	2.0%	1.0%	64.5	-	88	279	883
5	Kifer Road	Lawrence Expwy and Corvin Dr	4	13	17,585	40	0	2.0%	1.0%	63.9	-	78	248	785
10	Lawrence Expwy	Oakmead Pkwy and Arques Ave	8	20	50,695	50	0	2.0%	1.0%	71.3	135	426	1,348	4,263
11	Lawrence Expwy	Arques Ave and Kifer Rd	8	20	60,030	50	0	2.0%	1.0%	72.0	160	505	1,596	5,048
12	Lawrence Expwy	Kifer Rd and Monroe St	8	20	62,480	50	0	2.0%	1.0%	72.2	166	525	1,662	5,254
17	Wolfe Road	Arques Ave and Kifer Rd	6	25	29,875	35	0	2.0%	1.0%	65.3	-	107	339	1,073
18	Wolfe Road	Kifer Rd and Evelyn Ave	6	20	31,330	35	0	2.0%	1.0%	65.5	-	111	351	1,111
19	Wolfe Road	Evelyn Ave and Reed Ave	6	25	26,430	35	0	2.0%	1.0%	64.8	-	95	300	949
23	Central Expwy	Corvin Dr and Bowers Ave	6	25	42,915	50	0	2.0%	1.0%	70.3	108	341	1,077	3,405

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Intuitive
Project Number: 197041002
Scenario: Existing Plus Construction
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn
2	Kifer Road	Wolfe Road and Commercial St	4	13	11,273	40	0	2.0%	4.6%	64.7	-	93	294	930
3	Kifer Road	Commercial St and SemiConductor Dr	4	13	14,358	40	0	2.0%	3.8%	65.3	-	106	336	1,064
4	Kifer Road	SemiConductor Dr and Lawrence Expwy	4	17	16,853	40	0	2.0%	3.4%	65.7	-	118	375	1,184
5	Kifer Road	Lawrence Expwy and Corvin Dr	4	13	17,843	40	0	2.0%	3.2%	65.8	-	121	382	1,209
10	Lawrence Expwy	Oakmead Pkwy and Arques Ave	8	20	49,199	50	0	2.0%	1.4%	71.5	140	442	1,397	4,419
11	Lawrence Expwy	Arques Ave and Kifer Rd	8	20	58,174	50	0	2.0%	1.4%	72.2	165	523	1,652	5,225
12	Lawrence Expwy	Kifer Rd and Monroe St	8	20	61,634	50	0	2.0%	1.4%	72.4	175	554	1,751	5,536
17	Wolfe Road	Arques Ave and Kifer Rd	6	25	28,439	35	0	2.0%	2.0%	66.2	-	131	414	1,308
18	Wolfe Road	Kifer Rd and Evelyn Ave	6	20	30,464	35	0	2.0%	2.0%	66.4	-	138	438	1,384
19	Wolfe Road	Evelyn Ave and Reed Ave	6	25	25,564	35	0	2.0%	2.0%	65.7	-	118	372	1,176
23	Central Expwy	Corvin Dr and Bowers Ave	6	25	42,275	50	0	2.0%	1.0%	70.3	106	335	1,061	3,354

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

Traffic Noise Modeling Calculations

Traffic Noise Spreadsheet Calculator

Project: LSAP **Noise Level Descriptor:** Ldn

Number	Segment Description and Location: Name	From	To	Existing Conditions	Existing + Project Conditions	Δ Existing – Existing + Project	Cumulative Conditions	Cumulative +Project Conditions	Δ Cumulative – Cumulative + Project
Summary of Net Changes									
1	Kifer Road	Wolfe Road	Commercial Street	64.4	65.2	0.8	67.9	68.6	0.7
2	Kifer Road	Commercial Street	Semiconductor Drive	64.9	66.1	1.1	67.6	68.3	0.7
3	Kifer Road	Semiconductor Drive	Lawrence Expressway	65.9	66.9	1.0	67.7	67.8	0.1
4	Kifer Road	Lawrence Expressway	Corvin Drive	66.5	66.7	0.2	68.0	69.0	1.0
5	Lawrence Expressway	Tasman Drive	Sandia Avenue/Lakehaven Drive	72.5	72.6	0.1	74.9	74.9	0.0
6	Lawrence Expressway	Oakmead Parkway	Arques Avenue	73.6	73.7	0.2	75.9	75.9	0.1
7	Lawrence Expressway	Arques Avenue	Kifer Road	74.4	74.5	0.1	76.5	76.6	0.1
8	Lawrence Expressway	Kifer Road	Monroe Street	75.1	75.2	0.1	76.7	76.8	0.1
9	Wolfe Road/Fair Oaks Avenue	Duane Avenue	Stewart Drive	62.7	62.9	0.2	64.9	65.1	0.3
10	Wolfe Road	Stewart Drive	Arques Avenue	64.6	64.8	0.2	66.8	67.1	0.2
11	Wolfe Road	Arques Avenue	Kifer Road	64.6	64.8	0.2	68.3	68.6	0.2
12	Wolfe Road	Kifer Road	Evelyn Avenue	67.7	67.7	0.1	69.6	69.6	0.0
13	Wolfe Road	Evelyn Avenue	Reed Avenue	66.6	66.7	0.1	68.9	69.0	0.0
14	Fair Oaks Avenue	Evelyn Avenue	Old San Francisco Road/Reed Avenue	64.5	64.7	0.1	65.7	65.7	0.0
15	Evelyn Avenue	Sunnyvale Avenue	Fair Oaks Avenue	60.6	60.6	0.0	61.9	62.0	0.0
16	Evelyn Avenue	Fair Oaks Avenue	Wolfe Road	60.3	60.3	0.0	61.7	61.7	0.0
17	Arques Avenue	Wolfe Road	Lawrence Expressway	64.7	64.7	0.0	69.0	69.2	0.1
18	Central Expressway	Corvin Drive	Bowers Avenue	73.0	73.1	0.1	74.8	75.0	0.2

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: #REF!

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input											Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics								Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
#######																		
1	Kifer Road	Wolfe Road	Commercial Street	10,050	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.4	23	71	226	713
2	Kifer Road	Commercial Street	Semiconductor Drive	11,440	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.9	26	81	257	812
3	Kifer Road	Semiconductor Drive	Lawrence Expressway	14,345	40	75	92	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	65.9	32	102	322	1019
4	Kifer Road	Lawrence Expressway	Corvin Drive	16,415	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.5	37	116	368	1165
5	Lawrence Expressway	Tasman Drive	Sandia Avenue/Lakehaven Drive	35,290	50	75	95	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	72.5	151	479	1514	4788
6	Lawrence Expressway	Oakmead Parkway	Arques Avenue	46,125	50	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	73.6	199	629	1988	6288
7	Lawrence Expressway	Arques Avenue	Kifer Road	53,265	50	75	93	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	74.4	228	722	2282	7218
8	Lawrence Expressway	Kifer Road	Monroe Street	59,520	50	75	83	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	75.1	254	803	2539	8029
9	Wolfe Road/Fair Oaks	Duane Avenue	Stewart Drive	14,405	30	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	62.7	15	48	153	484
10	Wolfe Road	Stewart Drive	Arques Avenue	15,835	35	75	97	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.6	25	78	248	784
11	Wolfe Road	Arques Avenue	Kifer Road	16,565	35	75	110	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.6	26	83	262	829
12	Wolfe Road	Kifer Road	Evelyn Avenue	29,990	35	75	85	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	67.7	47	148	467	1476
13	Wolfe Road	Evelyn Avenue	Reed Avenue	25,370	35	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.6	40	126	399	1261
14	Fair Oaks Avenue	Evelyn Avenue	Old San Francisco Road/Reed Avenue	21,615	30	75	88	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.5	23	73	229	726
15	Evelyn Avenue	Sunnyvale Avenue	Fair Oaks Avenue	8,825	30	75	89	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	60.6	9	30	94	296
16	Evelyn Avenue	Fair Oaks Avenue	Wolfe Road	8,250	30	75	91	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	60.3	9	28	88	277
17	Arques Avenue	Wolfe Road	Lawrence Expressway	10,720	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.7	24	76	241	761
18	Central Expressway	Corvin Drive	Bowers Avenue	43,915	50	75	123	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	73.0	193	610	1928	6098

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: #REF!

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)$_{5,6,7}$	70 dBA	65 dBA	60 dBA	55 dBA
#REF!																		
1	Kifer Road	Wolfe Road	Commercial Street	12,140	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	65.2	27	86	272	861
2	Kifer Road	Commercial Street	Semiconductor Drive	14,795	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.1	33	105	332	1050
3	Kifer Road	Semiconductor Drive	Lawrence Expressway	18,205	40	75	92	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.9	41	129	409	1293
4	Kifer Road	Lawrence Expressway	Corvin Drive	17,040	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.7	38	121	382	1209
5	Lawrence Expressway	Tasman Drive	Sandia Avenue/Lakehaven Drive	35,950	50	75	95	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	72.6	154	488	1542	4877
6	Lawrence Expressway	Oakmead Parkway	Arques Avenue	47,870	50	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	73.7	206	653	2064	6526
7	Lawrence Expressway	Arques Avenue	Kifer Road	55,005	50	75	93	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	74.5	236	745	2357	7453
8	Lawrence Expressway	Kifer Road	Monroe Street	60,710	50	75	83	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	75.2	259	819	2590	8190
9	Wolfe Road/Fair Oaks Avenue	Duane Avenue	Stewart Drive	15,005	30	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	62.9	16	50	159	504
10	Wolfe Road	Stewart Drive	Arques Avenue	16,435	35	75	97	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.8	26	81	257	814
11	Wolfe Road	Arques Avenue	Kifer Road	17,165	35	75	110	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.8	27	86	272	859
12	Wolfe Road	Kifer Road	Evelyn Avenue	30,385	35	75	85	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	67.7	47	150	473	1496
13	Wolfe Road	Evelyn Avenue	Reed Avenue	25,765	35	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	66.7	41	128	405	1281
14	Fair Oaks Avenue	Evelyn Avenue	Old San Francisco Road/Reed Avenue	22,345	30	75	88	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.7	24	75	237	750
15	Evelyn Avenue	Sunnyvale Avenue	Fair Oaks Avenue	8,825	30	75	89	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	60.6	9	30	94	296
16	Evelyn Avenue	Fair Oaks Avenue	Wolfe Road	8,250	30	75	91	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	60.3	9	28	88	277
17	Arques Avenue	Wolfe Road	Lawrence Expressway	10,720	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	64.7	24	76	241	761
18	Central Expressway	Corvin Drive	Bowers Avenue	44,575	50	75	123	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	73.1	196	619	1957	6190

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: #REF!

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input											Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night		(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
#######																			
1	Kifer Road	Wolfe Road	Commercial Street	22,825	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		67.9	51	162	512	1620
2	Kifer Road	Commercial Street	Semiconductor Drive	20,990	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		67.6	47	149	471	1489
3	Kifer Road	Semiconductor Drive	Lawrence Expressway	21,695	40	75	92	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		67.7	49	154	487	1541
4	Kifer Road	Lawrence Expressway	Corvin Drive	23,130	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		68.0	52	164	519	1641
5	Lawrence Expressway	Tasman Drive	Sandia Avenue/Lakehaven Drive	60,875	50	75	95	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		74.9	261	826	2612	8259
6	Lawrence Expressway	Oakmead Parkway	Arques Avenue	78,255	50	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		75.9	337	1067	3373	10668
7	Lawrence Expressway	Arques Avenue	Kifer Road	86,800	50	75	93	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		76.5	372	1176	3719	11762
8	Lawrence Expressway	Kifer Road	Monroe Street	85,840	50	75	83	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		76.7	366	1158	3662	11580
9	Wolfe Road/Fair Oaks	Duane Avenue	Stewart Drive	23,620	30	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		64.9	25	79	251	794
10	Wolfe Road	Stewart Drive	Arques Avenue	26,235	35	75	97	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		66.8	41	130	411	1299
11	Wolfe Road	Arques Avenue	Kifer Road	39,045	35	75	110	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		68.3	62	195	618	1953
12	Wolfe Road	Kifer Road	Evelyn Avenue	46,695	35	75	85	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		69.6	73	230	727	2298
13	Wolfe Road	Evelyn Avenue	Reed Avenue	43,665	35	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		68.9	69	217	686	2170
14	Fair Oaks Avenue	Evelyn Avenue	Old San Francisco Road/Reed Avenue	28,690	30	75	88	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		65.7	30	96	305	963
15	Evelyn Avenue	Sunnyvale Avenue	Fair Oaks Avenue	12,015	30	75	89	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		61.9	13	40	128	404
16	Evelyn Avenue	Fair Oaks Avenue	Wolfe Road	11,575	30	75	91	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		61.7	12	39	123	389
17	Arques Avenue	Wolfe Road	Lawrence Expressway	29,395	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		69.0	66	209	660	2086
18	Central Expressway	Corvin Drive	Bowers Avenue	66,385	50	75	123	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%		74.8	292	922	2915	9219

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: #REF!

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
#REF!																		
1	Kifer Road	Wolfe Road	Commercial Street	26,555	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	68.6	60	188	596	1884
2	Kifer Road	Commercial Street	Semiconductor Drive	24,835	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	68.3	56	176	557	1762
3	Kifer Road	Semiconductor Drive	Lawrence Expressway	22,350	40	75	92	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	67.8	50	159	502	1588
4	Kifer Road	Lawrence Expressway	Corvin Drive	29,080	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	69.0	65	206	653	2063
5	Lawrence Expressway	Tasman Drive	Sandia Avenue/Lakehaven Drive	61,290	50	75	95	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	74.9	263	832	2629	8315
6	Lawrence Expressway	Oakmead Parkway	Arques Avenue	79,565	50	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	75.9	343	1085	3430	10846
7	Lawrence Expressway	Arques Avenue	Kifer Road	88,570	50	75	93	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	76.6	380	1200	3795	12002
8	Lawrence Expressway	Kifer Road	Monroe Street	87,760	50	75	83	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	76.8	374	1184	3744	11839
9	Wolfe Road/Fair Oaks Avenue	Duane Avenue	Stewart Drive	25,235	30	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	65.1	27	85	268	848
10	Wolfe Road	Stewart Drive	Arques Avenue	27,640	35	75	97	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	67.1	43	137	433	1369
11	Wolfe Road	Arques Avenue	Kifer Road	41,305	35	75	110	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	68.6	65	207	653	2066
12	Wolfe Road	Kifer Road	Evelyn Avenue	47,005	35	75	85	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	69.6	73	231	732	2314
13	Wolfe Road	Evelyn Avenue	Reed Avenue	43,985	35	75	102	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	69.0	69	219	691	2186
14	Fair Oaks Avenue	Evelyn Avenue	Old San Francisco Road/Reed Avenue	28,530	30	75	88	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	65.7	30	96	303	958
15	Evelyn Avenue	Sunnyvale Avenue	Fair Oaks Avenue	12,065	30	75	89	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	62.0	13	41	128	405
16	Evelyn Avenue	Fair Oaks Avenue	Wolfe Road	11,605	30	75	91	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	61.7	12	39	123	390
17	Arques Avenue	Wolfe Road	Lawrence Expressway	30,220	40	75	90	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	69.2	68	214	678	2144
18	Central Expressway	Corvin Drive	Bowers Avenue	69,155	50	75	123	97.0%	2.0%	1.0%	77.7%	12.7%	9.6%	75.0	304	960	3037	9603

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17.
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
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Appendix G

Water Supply Assessment for the Lawrence Station Area Plan Update/ Intuitive Surgical Corporate Campus Project, August 2020

Water Supply Assessment for the Lawrence Station Area Plan Update/Intuitive Surgical Corporate Campus Project

City of Sunnyvale
W. Olive Avenue
Sunnyvale, CA 94086

August 2020

Water Supply Assessment
for the
Lawrence Station Area Plan Update/Intuitive Surgical Corporate Campus Project

Prepared for

City of Sunnyvale
W. Olive Avenue
Sunnyvale, CA 94086

Prepared by

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Project Manager

August 2020

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LIST OF ABBREVIATIONS

AFY	acre-feet per year
BAWSCA	Bay Area Water Supply and Conservation Agency
CEQA	California Environmental Quality Act
City	City of Sunnyvale
CVP	Central Valley Project
EIR	Environmental Impact Report
GWMP	Groundwater Management Plan
ISL	Interim Supply Limitation
LSAP	Lawrence Station Area Plan
LUTE	City of Sunnyvale Land Use and Transportation Element
MGD	million gallons per day
Plant	Sunnyvale Water Pollution Control Plant
RWS	City of San Francisco and County of San Francisco Regional Water System
SB 610	Senate Bill 610 of 2001
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SWP	State Water Project
UWMP	Urban Water Management Plan
Valley Water	Santa Clara Valley Water District
Water Code	Division 6, Part 2.10 (1995) of the California Water Code
WSA	water supply assessment
WSIP	Water System Improvement Program

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

Division 6, Part 2.10 (1995) of the California Water Code (Water Code), requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet both existing demands and demands of planned development.

Water Code Sections 10910 – 10915 (inclusive) require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request a "Water Supply Assessment" (WSA) from the responsible purveyor. The objective of a WSA is to demonstrate the sufficiency of a purveyor's water supplies to satisfy the water demands of a proposed development project while still meeting the current and projected water demands of existing customers. Water Code Sections 10910 – 10915 delineate specific information that must be included in a WSA. This WSA was prepared consistent with Water Code Sections 10910 – 10915.

ES.2 SUMMARY DESCRIPTION OF THE PROJECT

The project consists of two primary components: (1) modifications to the adopted Lawrence Station Area Plan (LSAP Update) (i.e., an increase in housing potential within the LSAP, expansion of the western LSAP boundary by approximately 32.4 acres, and a Sense of Place Plan that would function as a policy document for LSAP area circulation, open space, and streetscape improvements) and (2) an office/research and development (R&D) and manufacturing development project in the western LSAP boundary expansion area for the Intuitive Surgical Corporate Campus Project (ISI project).

ES.3 SUMMARY OF WATER SUPPLY ASSESSMENT CONCLUSIONS

Pursuant to Section 10910 of the Water Code and based on the analysis detailed in this report, the City of Sunnyvale has determined that its currently projected water supplies will be sufficient to meet the projected annual water demands of existing and previously approved uses, and the implementation of the LSAP Update and ISI project during normal, single dry, and multiple dry years. The project will increase water demand within the City by approximately 688 acre-feet per year (AFY). For this WSA, project demand is compared to demands associated with development levels in the currently adopted LSAP as documented in the 2015 WSA for the City of Sunnyvale Land Use and Transportation Element (LUTE) Update (the LSAP is a component of the LUTE) (LUTE WSA). The analysis also accounts an increase in water demand as part of the Downtown Specific Plan Amendments Update.

As shown in Tables 4-1 and 4-2, the City's existing water supply contracts would meet the combined increase demand of the project and the Downtown Specific Plan Amendments Project under normal and single dry year conditions. During multiple dry year conditions, the City would use groundwater that would be within its safe yield of 8,000 AFY. During extended droughts, the City would implement its Water Shortage Plan which would include voluntary and mandatory water conservation measures to address water supply shortfalls of up to 50 percent.

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1 INTRODUCTION

1.1 PURPOSE OF WATER SUPPLY ASSESSMENT

The Water Code (Section 10910 et. seq.), based on Senate Bill 610 of 2001 (SB 610), requires a project proponent to prepare a water supply assessment (WSA) to evaluate the reliability of a project's water supply as part of the California Environmental Quality Act (CEQA) process. If the City of Sunnyvale's (City's) potable water supply does not have sufficient existing water supply to meet the project demands of the project, the development of additional water supplies must be addressed in the WSA and in the project Environmental Impact Report (EIR).

Under the Government Code (Section 66473.7), based on SB 221 of 2001, proposed subdivisions adding 500 dwelling units are also required to receive written verification of the available water supply from the project's water supplier. The LSAP Update/ ISI project (project) does not include the creation of a subdivision or a subdivision tract map, so a written verification of supply is not required.

This report is meant to serve as the WSA for the project to meet the Water Code and Government Code requirements. This WSA documents the City's existing and future water supplies for the LSAP area and compares them to the City's total projected water demands for the next twenty (20) years.

SB 610 requires the following steps be taken to identify the need and scope of a project's WSA:

1. Determine whether the project is subject to CEQA.
2. Determine whether the project meets the definition of a "project" per SB 610.
3. Determine the public water agency that will serve the project.
4. Determine whether any current Urban Water Management Plan considers the projected water demand for the project area.
5. Determine whether groundwater is used by the public water agency to serve the project area.

1.2 PROJECT OVERVIEW

The City's LSAP is located in the east-central part of the City, adjacent to the City of Santa Clara. The Caltrain Lawrence Station (Station) is located at 137 San Zeno Way, directly below the Lawrence Expressway overpass. U.S. 101 to the north and Interstate 280 to the south provide regional access to the plan area, and a network of major streets provides local access (i.e., Kifer Road, E. Evelyn Avenue, and Reed Avenue/Monroe Street). In December 2016, the City Council adopted the LSAP and its associated General Plan Amendment and Rezoning. The City also prepared an EIR (State Clearinghouse No. 2013082030) for the LSAP that was certified by City Council in 2016. In 2015, a WSA prepared for the City's LUTE Update assessed buildout of the LSAP (City of Sunnyvale 2015) (LUTE WSA). The City is reviewing the potential impacts of the project. The project consists of two primary components: (1) modifications to the adopted LSAP (i.e., an increase in housing potential within the LSAP, expansion of the western LSAP boundary by approximately 32.4 acres, and the proposed Lawrence Station Sense of Place Plan that would function as a policy document for LSAP area circulation, open space, and streetscape improvements) and (2) an office/research and development (R&D) and manufacturing development project in the western LSAP boundary expansion area for the ISI project.

This WSA assesses the LSAP update component of the project as it relates to the addition of 3,612 net new residential units that would be allowable within the LSAP area with modifications to the adopted LSAP. The land uses proposed as part of the ISI project are consistent with the land uses of the adopted LSAP and have been factored in the 2015 WSA and the City's 2015 Urban Water Management Plan (UWMP).

The proposed increase of 3,612 residential units triggers the need for the preparation of a WSA pursuant to Water Code Section 1092(a). The City municipal water system that serves the LSAP uses groundwater and water purchased from the Santa Clara Valley Water District (Valley Water) and the San Francisco Public Utilities Commission (SFPUC). The LSAP is located within City service Zone I.

This WSA is being prepared in accordance with SB 610 for the City's CEQA work in connection with the project.

1.3 PREVIOUS WATER SUPPLY ASSESSMENT

The LUTE WSA was prepared for the City's LUTE Update. In accordance with SB 610, a WSA is to be prepared to document the sufficiency of available water supply for the proposed project. Typically, WSA's are prepared for specific development projects. The LUTE Update established the development potential of the City at buildout. This buildout potential was included in the 2016 adopted LSAP. Full buildout of the LSAP analyzed under the LUTE WSA included: approximately 3,500 residential units; 3.6 million square feet of office/R&D development; approximately 217,000 square feet of retail space, and 26,500 square feet of industrial space. The values included existing residential units that were to be protected under the LSAP. Total expected water demand for the adopted LSAP was estimated at approximately 814 acre-feet per year (AFY). The LUTE WSA concluded that the City of Sunnyvale has a sufficient program of water supply for the current and future use, including sufficient water supply for buildout under the LUTE update (City of Sunnyvale 2015).

1.4 RELATIONSHIP OF THE WATER SUPPLY ASSESSMENT TO THE CITY URBAN WATER MANAGEMENT PLAN

Urban water management plans are considered by the California Department of Water Resources as a fundamental document for compliance with both SB 610 and SB 221. Thorough and complete UWMPs allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. The UWMP provides information detailing water supplies available during normal, single dry, and multiple dry water years during a 20-year projection, and the existing and projected future water demand during a 20-year projection. The UWMP presents projected supplies and demands in 5-year increments for the 20-year projection. Supplies from all sources, including wholesaler supplies, are documented in the UWMP. This documentation includes identifying and quantifying water rights, contracts, and/or entitlements to the supply; associated capital outlay programs; federal, state and local permits for constructing infrastructure for conveying the supply; and any necessary regulatory approvals required for conveyance.

Data from the City's 2010 UWMP was utilized to complete the LUTE WSA. The most recent UWMP for the City of Sunnyvale was adopted in June 2016 for the 2015 water year (2015 UWMP). The 2015 UWMP shows projected water supplies available during normal, single dry, and multiple dry water years in 5-year increments through the year 2035. Although not required, the 2015 UWMP provided water use projections for the year 2040. Water demand for the adopted LSAP was considered under the 2015 UWMP; therefore, whenever possible data from the 2015 UWMP was used to complete this WSA.

1.5 WATER SUPPLY ASSESSMENT ORGANIZATION

This WSA is organized into chapters, as identified and briefly described below. Chapters are further divided into sections (e.g., Chapter 3, "City Water Supply" and Section 3.1, "Current Water Supply Sources"):

- The "Executive Summary": This chapter introduces the LSAP project; provides a summary of the of the project, and a summary of the WSA conclusions.
- Chapter 1, "Introduction": This chapter provides a description of the purposed of the WSA, a project overview, a review of the previous WSA and its relationship the City's UWMP, and the WSA organization.

- Chapter 2, "Project Description": This chapter describes the location, background, and project water demands for the LSAP project, City water demands, and describes the project elements in detail.
- Chapter 3, "City Water Supply": The sections within this chapter describe the City's current and future water supply and reliability from the following existing sources: SFPUC, Valley Water, groundwater, and recycled water.
- Chapter 4, "Water Supply Sufficiency Analysis": This chapter evaluates the water supply reliability and the anticipated project water demands to determine if the future water supply can adequately meet the project water demands.
- Chapter 5, "Conclusions": This chapter summarizes the conclusions of the WSA.
- Chapter 6, "Report Preparers": This chapter identifies the preparers of the document.
- Chapter 7, "References": This chapter identifies the organizations and persons consulted during preparation of this WSA and the documents and individuals used as sources for the analysis.

1.6 STANDARD TERMINOLOGY

This WSA uses the following standard terminology:

"acre-feet per year" refers to the measurement of annual water supply demand. One acre-foot equals about 326,000 gallons, or enough water to cover an acre of land one foot deep.

"CEQA" means the California Environmental Quality Act.

"LUTE WSA" refers to the 2015 WSA that was prepared for the LUTE Update.

"project" means proposed LSAP Update and ISI project.

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2 PROJECT DESCRIPTION AND WATER DEMANDS

2.1 PROJECT DESCRIPTION

On December 6, 2016, the City of Sunnyvale adopted the Lawrence Station Area Plan (LSAP) and certified the LSAP EIR. The City's LSAP is located in the east-central part of the City of Sunnyvale in Santa Clara County, adjacent to the City of Santa Clara. The Caltrain Lawrence Station (Station) is located at 137 San Zeno Way, directly below the Lawrence Expressway overpass. U.S. 101 to the north and Interstate 280 to the south provide regional access to the plan area, and a network of major streets provides local access (i.e., Kifer Road, E. Evelyn Avenue, and Reed Avenue/Monroe Street). The LSAP area of focus consists of approximately 199 acres (without roads) of already urbanized lands within the City and is part of a larger 319 acres. The intent of the LSAP is to increase ridership at Caltrain's Lawrence Station and promote a mix of uses at the station through the development of a diverse neighborhood of employment, residential, retail, other support services and open space. With a plan horizon of 2035, the adopted LSAP includes goals, policies and guidelines to guide public and private investment in the area.

The LSAP Update/ISI project consists of two primary components: (1) modifications to the adopted LSAP (i.e., an increase in housing potential within the LSAP, expansion of the western LSAP boundary by approximately 32.4 acres, and the proposed Lawrence Station Sense of Place Plan that would function as a policy document for LSAP area circulation, open space, and streetscape improvements) and (2) an office/research and development (R&D) and manufacturing development project in the western LSAP boundary expansion area for the ISI project.

Residential development capacity under the adopted LSAP allows for a maximum of 2,323 net new dwelling units and water supply for the LSAP development was assessed in the City's 2015 LUTE WSA. With implementation of the proposed LSAP Update, the addition of 3,612 net new residential units would be allowable within the plan area. This WSA assesses the LSAP Update component of the project as it relates to the addition of 3,612 net new residential units that would be allowable within the LSAP area with modifications to the adopted LSAP.

The ISI project would consist of the redevelopment of 32.4-acres located within the proposed LSAP boundary expansion area and construction of a corporate campus and state of the art manufacturing and R&D facility. The ISI project would include demolition of 172,706 square feet of existing on-site office/R&D buildings (105,000 square feet of occupied area), associated structures, and infrastructure for redevelopment of the site as a unified corporate campus owned and operated by ISI. The campus would include approximately 1.211 million gross square feet of floor area (GFA) (and approximately 1.038 million gross square feet of net new floor area, including existing vacant floor area) of office/R&D development and manufacturing uses, and would serve up to 3,500 employees. This development would be within the office/R&D development allocations established in the 2016 LSAP and evaluated in the LUTE WSA. Therefore, water demand associated with redevelopment the ISI campus was assumed in the LUTE WSA and is not further evaluated in this WSA.

2.2 PROJECT WATER DEMANDS IN COMPARISON TO PREVIOUS WATER SUPPLY ASSESSMENT

The LUTE WSA analyzed projected water demands for the adopted 2016 LSAP project and did not consider the LSAP boundary expansion area and the additional 3,612 net new residential units. There would be no change to the total commercial, industrial, or institutional development under the proposed LSAP update and changes to increased water demand would be attributed only to the additional 3,612 net new residential units. Table 2-1 identifies changes in water demand between the adopted 2016 LSAP and the project for proposed new land uses. As shown in Table 2-1, the additional residential units would increase the water demand from the approved 2016 LSAP by 688 AFY.

Table 2-1 Comparison of Adopted Lawrence Station Area Plan to the Proposed Project Water Demands

Project	Land Use Type		Water Demand Factors[1]		Water Demands AFY[2]		Total
	New Residential Dwelling units	New I/O/C[3] Square feet	Residential (gpd/du)[4]	I/O/C (gpd/ksf)[5]	Residential	I/O/C	
2016 Adopted LSAP	2,323	1,225,600	170	270	442	371	813
LSAP Update[6]	5,935	1,225,600	170	270	1,130	371	1,501
Increase	3,612	-	-	-	688	-	688

1. Water demand factors from Table 3-2 of the LUTE WSA (City of Sunnyvale 2015)

2. Acre-feet per year

3. Industrial, office and R&D, and commercial uses

4. Gallons per day per dwelling unit

5. Gallons per day per thousand square feet of use

6. ISI project water demands are factored in the allocated square footage under the adopted LSAP.

Source: Compiled by Ascent Environmental 2020

2.3 CITY WATER DEMANDS

2.3.1 Historic and Current Water Demands

Table 2-2 summarizes the past and current water use in the City divided by sector.

Table 2-2 Estimated Past and Current Water Use Demand by Customer Type (AFY)

Customer Type	Year				
	2015	2016	2017	2018	2019
Single Family Residential	5,449	-	-	-	-
Multi-Family Residential	4,452	-	-	-	-
Commercial, Industrial, and Institutional	3,806	-	-	-	-
Irrigation (Potable)	1,374	-	-	-	-
Other (Firelines)	9	-	-	-	-
Total Potable	**15,090**	**16,503**	**18,639**	**18,582**	**18,778**

Note: 2016 through 2019 water demands were estimated using annual growth of water demands projected between 2015 and 2020 in the 2015 Sunnyvale UWMP. Water demands by customer were not available at the time of the preparation of this WSA.

Source: 2015 Sunnyvale UWMP, Table 4-1 (City of Sunnyvale 2016)

2.3.2 Future Water Demands

Table 2-3 summarizes the projected water demand for the City divided by 5-year increments provided in the 2015 UWMP as well as projection of 2040 water demands using UWMP growth rates. This includes anticipated water demands from buildout under the City LUTE that was assumed to occur by 2035. Water demand growth is assumed to occur under normal water year conditions. In the case of drought year conditions, it is expected that projected water use demand would be less than the value presented in Table 2-3 due to implementation of water conservation measures, for example reduced irrigation of landscaping.

Table 2-3 2015 UWMP Projected Water Demand Projections by Customer Type (AFY)

Customer Type	Year				
	2020	2025	2030	2035	2040
Single Family Residential	7,619	7,796	7,563	7,351	7,123
Multi-Family Residential	5,575	5,705	5,534	5,379	5,212
Commercial, Industrial, and Institutional	6,722	7,952	8,986	10,268	11,500
Irrigation (Potable)	2,288	2,341	2,271	2,208	2,142
Other (Firelines)	10	10	10	10	10
Total Potable	**22,214**	**23,804**	**24,364**	**25,216**	**25,987**

Source: 2015 Sunnyvale UWMP Table 4-1 (City of Sunnyvale 2016)

Notes: 2040 water demands were estimated using changes water demands projected between 2030 and 2035 by customer type in the 2015 Sunnyvale UWMP Table 4-1.

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3 CITY WATER SUPPLY

The following provides an overview of City water supply sources based on the 2015 UWMP and other technical materials from the City.

3.1 CURRENT WATER SUPPLY SOURCES

The City obtains its potable water supply from three sources: purchased surface water from the San Francisco Public Utility Commission (SFPUC), purchased treated surface water from Valley Water, and groundwater from six City-owned and operated wells. The City maintains one additional well on stand-by for emergency use. Most of the City's potable water supply is obtained from SFPUC and Valley Water, approximately 54 percent and 40 percent from each respectively. Approximately 1 percent of the City's water supply is obtained from groundwater wells and the remaining 5 percent comes from non-potable recycled water provided by the City's Water Pollution Control Plant (WPCP or Plant) (City of Sunnyvale 2016).

3.1.1 San Francisco Public Utility Commission

The City receives imported water from the City and County of San Francisco's Regional Water System (RWS), operated by SFPUC. This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties.

The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to ensure ongoing reliability of its water supplies.

The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. The local watershed facilities are operated to capture local runoff. The business relationship between the SFPUC and its wholesale customers is largely defined by the "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County" (WSA) entered into in July 2009 (WSA) and set to expire in 2034. This 25-year WSA replaced the Settlement Agreement and Master Water Sales Contract that expired in June 2009. The WSA addresses the rate-making methodology used by the SFPUC in setting wholesale water rates for its customers in addition to addressing water supply and water shortages for the RWS.

The WSA is supplemented by an individual Water Supply Contract between SFPUC and each individual retailer, also entered into in July 2009. These contracts also expire in 25 years. The City has an Individual Supply Guarantee (ISG) of 12.58 million gallons per day (MGD) (or approximately 14,100-acre feet per year [AFY]). Although the WSA and accompanying Water Supply Contract expire in 2034, the ISG (which quantifies San Francisco's obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely. The City contract also includes a minimum purchase amount of 8.93 MGD (10,003 AFY), which Sunnyvale agrees to buy, regardless of whether sales drop below this level.

As previously stated, the WSA provides for a 184-MGD (expressed on an annual average basis) Supply Assurance to the SFPUC's wholesale customers. This Supply Assurance is subject to reduction, to the extent and for the period made necessary by reason of water shortage, because of drought, emergencies, or by malfunctioning or rehabilitation of the regional water system. The WSA does not guarantee that San Francisco will meet peak daily or hourly customer demands when their annual usage exceeds the Supply Assurance. The SFPUC's wholesale customers have agreed to the allocation of the 184 MGD Supply Assurance among themselves, with each entity's share of the Supply Assurance set forth on Attachment C to the WSA.

The Water Shortage Allocation Plan between the SFPUC and its wholesale customers, adopted as part of the WSA in July 2009, addresses shortages of up to 20 percent of system-wide use. The Tier 1 Shortage Plan allocates water from the RWS between San Francisco retail and the wholesale customers during system-wide shortages of 20 percent or less. The WSA also anticipated a Tier 2 Shortage Plan adopted by the wholesale customers which would allocate the available water from the RWS among the wholesale customers. The Tier 2 agreement was completed and approved by all the wholesale customers in March 2011.

SFPUC deliveries to the City reached a maximum of 12,675 AFY in 2008. The 2014 deliveries were 8,454 AFY, and the 2015 deliveries were 8,883 AFY (2015 UWMP Table 7-3).

3.1.2 Valley Water

Valley Water, previously known as SCVWD, supplies the City of Sunnyvale treated surface water through an entitlement of the imported Central Valley Project (CVP) water and the State Water Project (SWP) water, in combination with water from local reservoirs. Valley Water has a contract for 152,500 AFY from the CVP and 100,000 AFY from the SWP. The City receives water for Valley Water under an existing agreement that expires in 2051. The actual amount of water delivered to the City is typically significantly less than the contractual amounts and depends on hydrology, conveyance limitations, and environmental regulations. Valley Water operates 10 local reservoirs with a total storage capacity of approximately 170,000 AF. (City of Sunnyvale 2016).

3.1.3 Groundwater

The City owns, operates, and maintains six wells for regular use and one well on stand-by for emergencies. The wells supplement imported water supplies from SFPUC and Valley Water during peak demand periods (e.g., summer months) and as needed for emergencies. Valley Water manages two groundwater subbasins, the Santa Clara Subbasin and the Llagas Subbasin. The basins are subject to conjunctive use management and are pumped more in drier years and then replenished (or recharged) during wet years and average years. Conjunctive use methods prevent overdraft, land subsidence, and saltwater intrusions of the subbasins. The groundwater subbasins are managed under guidance from Valley Water and in accordance with the 2016 Groundwater Management Plan (GWMP). The 2016 GWMP was submitted to the California Department of Water Resources (DWR) in December 2016 for approval as an Alternative to a Groundwater Sustainability Plan, as required under the Sustainable Groundwater Management Act (SGMA). On July 17, 2019, DWR determined that the Alternative (i.e., the 2016 GWMP) satisfies the objectives of SGMA and was approved (DWR 2019).

The 2015 Sunnyvale UWMP identifies the City's safe yield for groundwater extraction is 8,000 AFY. Table 3-1 shows the historical groundwater volume pumped from 2011-2019.

Table 3-1 Historical Groundwater Pumped Volume

Year	Volume Pumped (AFY)
2011[1]	467
2012[1]	142
2013[1]	123
2014[1]	2,064
2015[1]	148
2016[2]	152
2017[2]	119
2018[2]	106
2019[3]	92

[1] 2015 Sunnyvale UWMP Table 6-3

[2] Downtown Specific Plan Amendments Project WSA Table 3-2

[3] City groundwater pumping for 2019 (Schroeder, pers. comm., 2020)

Source: Compiled by Ascent Environmental 2020

3.1.4 Recycled Water

The City has developed a recycled water program which today serves parks, golf courses and the landscaping needs of diverse industries. A wastewater reclamation program was developed in 1991 when the City first identified short-term goals of recycling wastewater of 20 percent to 30 percent of high-quality effluent from the Sunnyvale Water Pollution Control Plant (Plant). The long- term goal of the City is to reuse 1.5 MGD generated from the Plant to reduce all flows to the bay, as stated in the 2015 UWMP. Plant has a design flow capacity of 10 MGD for treatment of wastewater from the City.

The City has completed Phases I and II of the 2000 Recycled Water Master Plan, which now serves Baylands Park, Lockheed/Martin Area, the Sunnyvale Municipal Golf Course, and other parks and industrial areas in the northern part of the City. A storage tank was built in the Year 2000 to allow for more recycled water to be developed and stored in order to keep up with demand on the system once the area is built out. In September 2013, the City Council approved the Recycled Water Feasibility Study that identifies possible extensions of the recycled water system. Possible extensions to serve the south end of Sunnyvale along Wolfe road are currently under way. Possible extensions to serve the south end of the City and also Cupertino and Los Altos may be evaluated in the future. Table 3-2 projects recycled water use:

Table 3-2 Historical and Projected Recycled Water Use Within the City (AFY)

Supply Source	Year				
	2015	2020	2025	2030	2035
Recycled Water	717[1]	1,456	1,568	1,680	1,680

Source: 2015 Sunnyvale UWMP Table 6-2 and Table 7-4

1 Sunnyvale 2015 UMWP, Errata Correction 3, Reconciling discrepancy

3.2 FUTURE WATER SUPPLY SOURCES AND RELIABILITY

Table 3-3 shows the projected water supplies for the City through the year 2040.

Table 3-3 City Water Supplies (AFY)

Supply Source	Year				
	2020	2025	2030	2035	2040
SFPUC Purchased Water	11,124	12,266	12,266	12,266	12,266
Valley Water Purchased Water	10,642	11,202	11,762	12,614	12,726
Local Groundwater Wells	448	336	336	336	336
Recycled Water	1,456	1,568	1,680	1,680	1,680
Total	**23,670**	**25,372**	**26,044**	**26,896**	**27,008**

Source: 2015 Sunnyvale UWMP Table 6-2 and Table 7-4

3.2.1 San Francisco Public Utility Commission

The extent of imported water is dependent on water supply of the Tuolumne River which is constrained by hydrology, physical facilities, and the institutional parameters. In October 2008, the SFPUC adopted the Water System Improvement Program (WSIP) to improve the water delivery and water supply reliability of the RWS. Relevant goals of the WSIP related to water supply are: meet average annual water demand of 265 MGD from the SFPUC watersheds for retail and wholesale customers during non-drought years for system demands, meet dry-year delivery needs through 2018 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts; diversify water supply options during non-drought and drought periods; and improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.

As part of the adoption of the WSIP, the SFPUC adopted the Interim Supply Limitation (ISL). The ISL limits water sales from the RWS to an annual average of 265 MGD through 2018.

The SFPUC has analyzed past system yields to identify periods with single and multiple dry-years. The SFPUC has translated these dry-year projections into reductions to the total 184 MGD water supply available to the Bay Area Water Supply and Conservation Agency (BAWSCA). The City is a member of BAWSCA (City of Sunnyvale 2016).

3.2.2 Valley Water

The 2015 Santa Clara Valley Water District UWMP recognized climate change, droughts, local fisheries operations, invasive species damage, earthquake, environmental regulations, and reduced groundwater production as threats to water supply reliability. Valley Water supplies have previously been affected by changes in regulatory requirements, and additional requirements are anticipated in the future. Locally, the greatest impact of regulations has been on instream recharge operations. However, future droughts represent the primary threat to Valley Water's water supply (Valley Water 2016).

Modeling conducted for the Water Supply Master Plan 2040 (Master Plan) indicates shortages during droughts in all demand years, with shortages increasing in severity and frequency as demands increase and Delta-conveyed supplies decrease. By 2040, without new supplies or conservation savings, shortages could occur in about 40 percent of years. The Master Plan identifies that 2040 available water supplies would range from 250,000 AFY to 399,000 AFY depending on the water year that could result in water supply shortfalls as high as 140,000 AFY during extended drought conditions (Valley Water 2019).

To improve the reliability of water supplies, the Master Plan includes the Valley Water's Ensure Sustainability water supply strategy that consists of securing existing supplies and infrastructure; increasing water conservation and water reuse; and optimizing the use of existing supplies and infrastructure. The following projects would be implemented as part of this strategy:

- Delta Conveyance Project
- Additional Conservation and Stormwater Projects and Programs
- Potable Reuse Program
- Pacheco Reservoir Expansion
- Transfer-Bethany Pipeline
- South County Recharge

Implementation of these projects would provide a reliable water supply that would meet 2040 demands during a non-drought year. During drought conditions, water supplies would be sufficient to meet 100 percent of demand during the first five years of drought and more than 90 percent in the last year. (Valley Water 2019)

3.2.3 Groundwater

Groundwater is managed under guidance from Valley Water and in accordance with the 2016 GWMP. DWR has determined that the GWMP satisfies the objectives of the SGMA (California Department of Water Resources 2019).The goals are the 2016 GWMP area to manage and optimize groundwater supply reliability and minimalize land subsidence and to protect groundwater from contamination and saltwater intrusion. Groundwater well pumping may be adjusted slightly in the future to meet future water demands during drought years and emergencies. Countywide water supplies are generally sufficient to meet demands in normal years through 2040, but significant shortages may occur during multiple dry years without additional investments. Total natural groundwater recharge assumed for total Valley Water supplies consists of 61,000 AFY long term average and 47,000 AFY during a crucial drought (Valley Water 2019).

3.2.4 Recycled Water

The City has experienced a slight decrease in WPCP influent from 2010-2015, but anticipates a conservative level of 15 MGD for plant influent over the next 25 years. The 2013 Feasibility Study identified four recycled water system pipeline alignments. Four alignment/connection types were developed and include: Wolfe Road main, main loop, potential recycled water alignments, and infill connections. The City plans to build the alignments in four Phases as part of their Capital Improvement Program. Completion of the pipeline improvements would provide additional recycled water to the City of Sunnyvale (City of Sunnyvale 2016).

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4 WATER SUPPLY SUFFICIENCY ANALYSIS

4.1 PROJECT WATER DEMANDS AND FUTURE WATER SUPPLY

Tables 4-1, 4-2, and 4-3 identify project water demands as well as the proposed Downtown Specific Plan Amendments Project water demands on City water supplies under normal, single dry, multiple dry year conditions between 2020 and 2040.

Table 4-1 City Water Supplies vs. Water Demands With Project – Normal Year (AFY)

Supply Source	Year				
	2020	2025	2030	2035	2040
SFPUC Purchased Water[1]	12,141	13,283	13,283	13,283	13,283
Valley Water Purchased Water[2]	10,642	11,202	11,762	12,614	12,726
Local Groundwater Wells[2]	448	336	336	336	336
Recycled Water[2]	1,456	1,568	1,680	1,680	1,680
Supply Total	**24,687**	**26,389**	**27,061**	**27,913**	**28,025**
City Water Demands[3]	23,670	25,372	26,044	26,896	27,008
Downtown Specific Plan Amendments Water Demand[4]	329	329	329	329	329
Project Water Demand	688	688	688	688	688
Water Demand Total	**24,687**	**26,389**	**27,061**	**27,913**	**28,025**
Difference	**0**	**0**	**0**	**0**	**0**

1. SFPUC supply increases as necessary to meet City demands up to the City total right of 14,100 AFY.

2. Water supplies based on 2015 Sunnyvale UWMP Table 6-2 and Table 7-4 and does not reflect the maximum supply available.

3. Water demands based on 2015 Sunnyvale UWMP and projected water demand for 2040 based on UWMP rate of annual water demand increase between 2030 and 2035.

4. Downtown Specific Plan Amendments Project Water Supply Assessment (Schaaf & Wheeler 2019)

Source: 2015 Sunnyvale UWMP Table 6-2 and Table 7-4 (City of Sunnyvale 2016)

Table 4-2 City Water Supplies vs. Water Demands With Project – Single Dry Year (AFY)

Supply Source	Year				
	2020	2025	2030	2035	2040
SFPUC Purchased Water[1]	12,141	13,283	13,283	13,283	13,395
Valley Water Purchased Water[2]	10,642	11,202	11,762	12,614	12,614
Local Groundwater Wells[2]	448	336	336	336	336
Recycled Water[2]	1,456	1,568	1,680	1,680	1,680
Supply Total	**24,687**	**26,389**	**27,061**	**27,913**	**28,025**
City Water Demands[3]	23,670	25,372	26,044	26,896	27,008
Downtown Specific Plan Amendments Water Demand[4]	329	329	329	329	329
Project Water Demand	688	688	688	688	688
Water Demand Total	**24,687**	**26,389**	**27,061**	**27,913**	**28,025**
Difference	**0**	**0**	**0**	**0**	**0**

1. SFPUC supply increases as necessary to meet City demands up to the City total right of 14,100 AFY.

2. Water supplies based on 2015 Sunnyvale UWMP Table 6-2 and Table 7-5 and does not reflect the maximum supply available. Water supplies from Valley Water for 2040 were assumed to not change from 2035 supplies.

3. Water demands based on 2015 Sunnyvale UWMP and projected water demand for 2040 based on UWMP rate of annual water demand increase between 2030 and 2035.

4. Downtown Specific Plan Amendments Project Water Supply Assessment (Schaaf & Wheeler 2019)

Source: 2015 Sunnyvale UWMP Table 7-5 (City of Sunnyvale 2016)

4.2 WATER SUPPLY RELIABILITY

As shown in Tables 4-1 and 4-2, City's existing water supply contracts would meet the combined increase demand of the project and the Downtown Specific Plan Amendments Project under normal and single dry year conditions. During multiple dry year conditions the City would use groundwater that would be within its safe yield of 8,000 AFY. During extended droughts, the City would implement its Water Shortage Plan that consists of voluntary and mandatory water conservation measures that would address water supply shortfalls of up to 50 percent.

Table 4-3 City Water Supplies vs. Water Demands With Project – Multiple Dry Year (AFY)

Supply Source	Year														
	2020			2025			2030			2035			2040		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
SFPUC Purchased Water[1]	12,141	9,812	9,812	13,283	9,812	9,812	13,283	9,812	9,812	13,283	9,812	9,812	13,395	9,812	9,812
Valley Water Purchased Water[2]	10,642	10,200	10,200	11,202	10,200	10,200	11,762	10,200	10,200	12,614	10,200	10,200	12,614	10,200	10,200
Local Groundwater Wells[3]	448	3,538	3,855	336	4,921	5,033	336	5,539	5,710	336	6,244	6,266	336	6,360	6,387
Recycled Water[2]	1,456	1,478	1,501	1,568	1,590	1,613	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680
Supply Total	***24,687***	***25,028***	***25,368***	***26,389***	***26,523***	***26,658***	***27,061***	***27,231***	***27,402***	***27,913***	***27,936***	***27,958***	***28,025***	***28,052***	***28,079***
City Water Demands[4]	23,670	24,011	24,351	25,372	25,506	25,641	26,044	26,214	26,385	26,896	26,919	26,941	27,008	27,035	27,062
Downtown Specific Plan Amendments Water Demand[5]	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329
Project Water Demand	688	688	688	688	688	688	688	688	688	688	688	688	688	688	688
Water Demand Total	***24,687***	***25,028***	***25,368***	***26,389***	***26,523***	***26,658***	***27,061***	***27,231***	***27,402***	***27,913***	***27,936***	***27,958***	***28,025***	***28,052***	***28,079***
Difference	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

1. SFPUC supply increases as necessary to meet City demands up to the City total right of 14,100 AFY.

2. Water supplies based on 2015 Sunnyvale UWMP Table 6-2 and Table 7-5 and does not reflect the maximum supply available. Water supplies from Valley Water for 2040 were assumed to not change from 2035 supplies. Groundwater

3. The 2015 Sunnyvale UWMP identifies the City's safe yield for groundwater extraction is 8,000 AFY.

4. Water demands based on 2015 Sunnyvale UWMP and projected water demand for 2040 based on UWMP rate of annual water demand increase between 2030 and 2035.

5. Downtown Specific Plan Amendments Project Water Supply Assessment (Schaaf & Wheeler 2019)

Source: 2015 Sunnyvale UWMP Table 7-5 (City of Sunnyvale 2016)

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5 REPORT PREPARERS

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Kristen Stoner ..... Project Manager

Alyssa Way ..... Technical Review

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Appendix H

Lawrence Station Area Plan
Proposed Intuitive Surgical
Corporate Campus Project at
932, 945, 950, and 955 Kifer Road
(Office Expansion Buildout)
Infrastructure Impact Study,
June 22, 2020

LAWRENCE STATION AREA PLAN

PROPOSED INTUITIVE SURGICAL CORPORATE CAMPUS PROJECT AT 932, 945, 950, AND 955 KIFER ROAD (OFFICE EXPANSION BUILDOUT) INFRASTRUCTURE IMPACT STUDY

June 22, 2020

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

255 Shoreline Drive, Suite 200
Redwood City, CA 94065
650.482.6300

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APPENDICES

Appendix A – Block Book Pages for Lawrence Station Area Plan

Appendix B – LSAP Parcels with Development Assumptions

Appendix C – LSAP Potable Water Model Reports

Appendix D – LSAP Sewer Model Reports

Appendix E – Potable Water System Demand Calculations

Appendix F – Sanitary Sewer System Demand Calculations

SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Project Overview

The proposed Lawrence Station Area Plan (LSAP) Amendment Project (Project) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California and is approximately 252.09 acres. For the purposes of the infrastructure studies, the LSAP Update project is divided into two study areas: the Housing Expansion Study Area and the Proposed Intuitive Surgical Corporate Campus Project at 932, 945, 950, and 955 Kifer Road (herein referred to as the Office Expansion) Study Area. This Infrastructure Study will address the Office Expansion Study Area which composes of two parcels south of Kifer Road and one parcel north of Kifer Road. The north parcel is bounded by Central Expressway to the north, Texas Instruments campus to the east, Kifer Road to the south, and numerous commercial offices to the west. The south parcel is bounded by Kifer Road to the north, the proposed LSAP Housing Expansion to the east, railroad right of way (ROW) to the south, and two large commercial offices to the west. The project site is located in the far eastern area of the City of Sunnyvale northwest of the Lawrence Caltrain station.

The Office Expansion Study Area site is approximately 32.39 acres of industrial land owned by Intuitive Surgical, Inc. (ISI) that is proposed for redevelopment as office/research and development.

The Housing Expansion Study Area is approximately 219.70 acres encompassing existing developments, railroad ROW, and public ROW. The residential LSAP is bounded by the City of Santa Clara to the north and east, Reed Avenue, Aster Avenue, and the railroad ROW to the south, and the Intuitive Surgical offices to the west. Please refer to the Housing Expansion Buildout Infrastructure Impact Study for the infrastructure analysis associated with the proposed increase of allowable housing potential within the LSAP.

Figure 1.1 - Project Location - illustrates the regional location of the Project.

FIGURE 1.1 PROJECT LOCATION

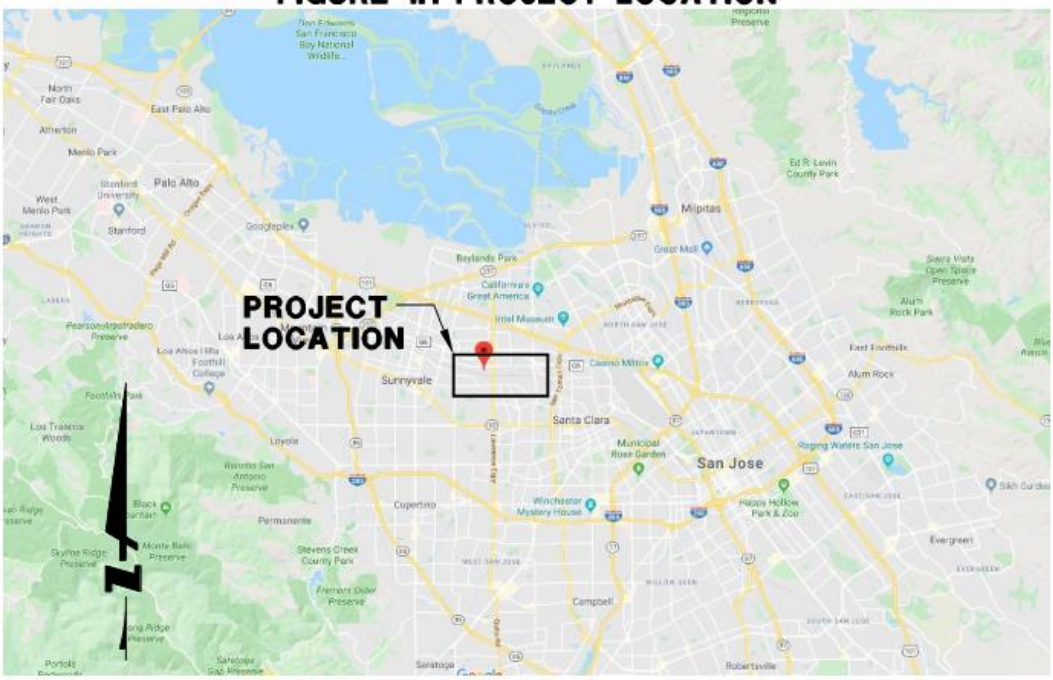
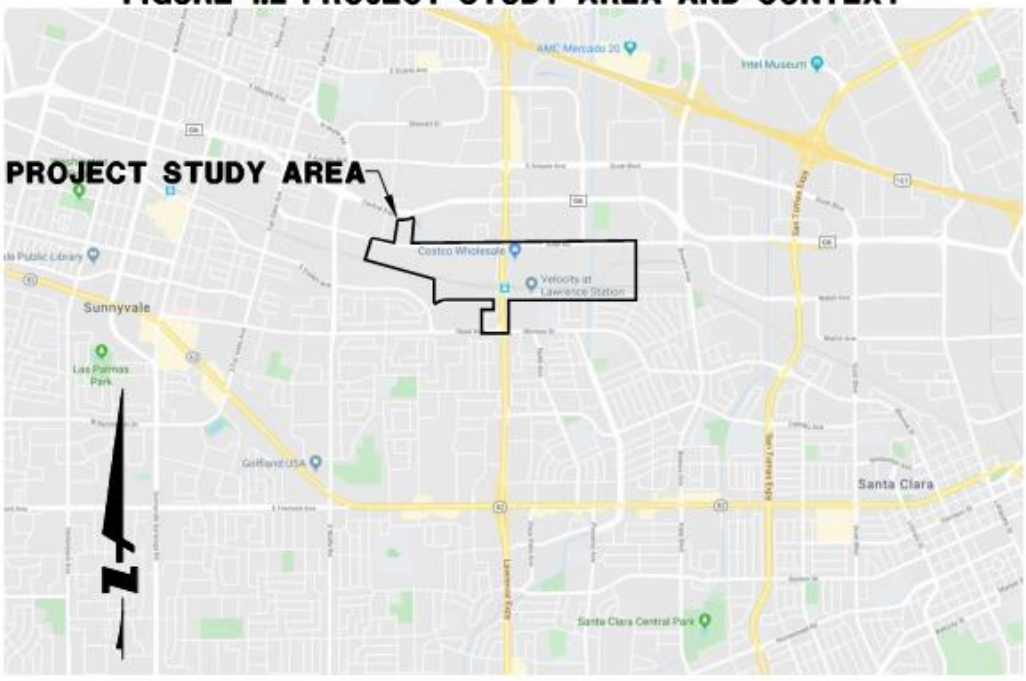


Figure 1.2 - Project Site and Context - illustrates the Study Area Boundaries and the location of the Project within the City.

FIGURE 1.2 PROJECT STUDY AREA AND CONTEXT



This study will discuss the office expansion located across three parcels. The Project includes two office/R&D buildings, a parking structure, an amenities building, and two central utility plants. Existing utility infrastructure requiring upgrades to serve the Project will be identified in this study.

1.2 Lawrence Station

1.2.1 Existing Conditions and Land Use

Existing conditions and Land Uses within the 32.39 acre office expansion LSAP includes an office/research building, an industrial building, a fitness center, an equipment enclosure, and a recreational park for employees. The ISI project site is currently designated for industrial uses in the City's General Plan.

1.2.2 Proposed ISI Project Component of the LSAP Update

The LSAP Update consists of two primary components: (1) modifications to the adopted LSAP (i.e. an increase in housing potential within the LSAP, expansion of the western LSAP boundary, and a Sense of Place Plan that would function as a policy document for LSAP area circulation, open space, and streetscape improvements) and (2) an office/research development (R&D) and manufacturing redevelopment project in the western LSAP boundary expansion area for the ISI project. This infrastructure study analyzes the second component of the LSAP update: the ISI project. A detailed breakdown of the land uses are shown in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). The proposed LSAP layout is shown in Figure 1.3 – Proposed Site Layout.

1.3 Project Datum

All elevations referenced herein are based on the following:

- Vertical datum used in the City of Sunnyvale's Utility and GIS Maps.

- Record drawings provided by the City for Aster Avenue and Willow Avenue
- Manhole survey data provided by the City for Lawrence Expressway

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CENTRAL EXPWY

CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

COMMERCIAL ST

945 KIFER

955 KIFER

KIFER RD

KIFER RD

932 KIFER

950 KIFER

JPB RIGHT-OF-WAY

MXD-II

SAN ZENO WAY

MXD-I

LAWRENCE EXPWY

MXD-I

LAWRENCE STATION RD

CALABAZAS CREEK

MXD-II

M-S/LSAP

URANIUM DR

SONORA CT

MXD-I

LAWRENCE VTA STATION

JPB RIGHT-OF-WAY

E EVELYN AVE

MXD-III

ASTER AVE

AGATE DR

EL CAMINO CHANNEL

WILLOW AVE

R-5

EL CAMINO CHANNEL

O-R

FRENCH ST

MONROE ST

REED AVE

CITY OF SUNNYVALE

CITY OF SANTA CLARA

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- PUBLIC RIGHT-OF-WAY

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE IMPACT STUDY

FIGURE 1.3 – PROPOSED LSAP STUDY AREA LAYOUT

DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Figure 1.3 – Proposed Site Layout.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

SECTION 2: POTABLE WATER SYSTEM

2.1 Potable Water System Design Criteria

The design criteria used for the office expansion development of the potable water model is based upon established industry operations standards and regulatory agency requirements. The potable water system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. Since the City of Sunnyvale does not have written standards for water generation, this report will use Redwood City's Design Standards to estimate project water demands. The intent of this study is to identify which existing City water mains will need to be upgraded in order to provide adequate water supply to the LSAP. All existing water mains are located within the City Right-of-Way.

The design criteria are dependent on the demand scenario. Table 2.1 – Potable Water System Demand and Peaking Factor presents the potable water system demand and peaking factor for the demand scenario. Assumed peaking factors for max day demand and peak hour demand scenarios are based on correspondence between BKF and the City of Sunnyvale.

Table 2.1
Potable Water System Demand and Peaking Factor

Parameter	Value
Average Day Demand (ADD)	262,812 gpd
Fire Flow Demands (FF)	4,500 gpm
Maximum Day Demand (MDD)	MDD = 2.0 ADD
Peak Hour Demand (PHD)	PHD = 3.0 ADD

Notes:
1. Fire flow demand based on an assumed R-2 Occupancy type building and construction Type III-A, assuming 25% fire flow reduction for sprinkling.
2. gpd = gallons per day
3. gpm = gallons per minute

Table 2.2 – Potable Water System Design Criteria presents the potable water system design criteria.

Table 2.2
Potable Water System Design Criteria

Parameter	Value
Pipe size	Pipe diameters of 8, 10, 12, and 16 inches shall be used for all distribution and feeder mains.
Pipe Material	For water mains 12-inches and smaller shall be C900 DR14 PVC pipe or AWWA C-151/A21.51 ductile iron pipe (DIP). Water mains larger than 12-inches shall be C905 DR14 PVC or AWWA C-151/A21.51 DIP.
Hazen Williams C-value for recommended pipes	140 for DIP, 150 for PVC
Maximum static pressure	120 psi
Maximum velocity during PHD	7 fps
Maximum velocity during MDD+FF	15 fps
Minimum system pressure during MDD+FF	20 psi

Notes:
fps = feet per second
psi = pounds per square inch

2.2 Potable Water System Layout

Potable water is supplied to the LSAP by the City of Sunnyvale through an existing 12-inch diameter cast iron pipe (CIP) in Kifer Road. Commercial Street also contains an existing 8-inch diameter CIP. Existing potable water system layout is shown on Figure 2.1 – LSAP Existing Potable Water System.

2.3 Upgraded Potable Water System

2.3.1 Proposed Water Demand Factors

The potable water demand factors used for the Project's various land uses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD). The total estimated water

demands for the Project land uses are shown on Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). Water demands are derived from Redwood City's Design Standards.

Table 2.3
LSAP Potable Water Demand Factors (ADD)

Land Use	Indoor Potable Water Demand Factors (ADD)	Outdoor Potable Water Demand Factors (ADD)	Total Water Demand (ADD)
Office/R&D	0.13 gpd/sf	0.072 gpd/sf	0.202 gpd/sf
Industrial	0.21 gpd/sf	0 gpd/sf	0.21 gpd/sf
Restaurant	30 gpd/seat	0 gpd/seat	30 gpd/seat

Note:
sf = square feet

2.3.2 Model Results Discussion

The existing potable water system is sufficient to supply the potable water demands as well as provide fire flow to the site. Under the scenario of max day demand and fire flow, the water model analysis determined that the flow demand would be at its highest of any scenario at 4,820 gpm as seen in Appendix C-3 – Model Scenario 3: Max Day Demand + Fire Flow. However, the existing potable water system is able to provide a flow of 6,000 gpm, which is well above the necessary flow to meet the demands in this scenario. Refer to Appendix C-3 – Model Scenario 3: Max Day Demand + Fire Flow for water model results. The overall proposed ISI development indicates that no improvements are required for the City's potable water system.

2.4 Potable Water System Model Water Demands

2.4.1 Sources of Land Use Water Demand Data

Potable water demand factors for the model analyses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and were applied to the project program to develop the project potable water demand total. Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) provides water demands by land use.

See Appendix E – Potable Water System Demand Calculations, for model demand calculations on a block by block basis. Total project development will not exceed the demands presented in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD).

2.4.2 Average Day Demand

The demand factors presented in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and the demand summaries presented in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) reflect average day demand (ADD) for the Office Expansion Study.

Table 2.4
Office Expansion Study LSAP Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Office/R&D	351,000	sf	0.202	70,902
Industrial	831,000	sf	0.21	174,510
Restaurant[1,3]	580	seat	30	17,400
			Total	262,812

Notes:

1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant space (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:
$$(29{,}000\ sf \times 0.5) \times (\frac{4\ seats}{100\ sf}) = 580\ seats$$
2. Block by block water demand calculations shown in Appendix E – Potable Water System Demand Calculations.
3. Restaurant is defined as employee amenity space.

2.4.3 Maximum Day Demand

Maximum Day Demand (MDD) represents the maximum volume of water used in a 24-hour period for the entire year. A water system is typically evaluated under a maximum day plus fire flow demand condition as this condition allows the system to be stressed at a higher demand rate to ascertain if pipeline carrying capacities are adequate in a fire emergency. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 2 was applied to ADD.

2.4.4 Peak Hour Demand

Peak Hour Demand (PHD) represents the highest hourly demand for the entire system, and simulates the highest flow rate expected. To determine the PHD, a peaking factor was applied to increase the ADD. Peaking factors represent the increase above ADD and are a statistical concept typically obtained from historical data. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 3 was applied to ADD.

2.4.5 Fire Flow Demand

The fire flow (FF) demand is assumed to be 4,500 gallons per minute (gpm) as noted in correspondence between the City of Sunnyvale, Ascent Environmental, and BKF Engineers.

2.5 Potable Water System Model Boundary Conditions

The recommended potable water system is modeled based on calibrated boundary conditions and fire hydrant flow data received from the City completed for the LSAP Project. Since the LSAP Project is redeveloping existing lots, the recommended water model is analyzing existing City water mains and identifying which water mains will need to be upgraded in order to provide adequate water supply for the redevelopment.

2.6 Potable Water System Model Scenario

The LSAP water model was created in Bentley Water CAD V8i SELECT series 1. A series of model scenarios were created to reflect the range of demand usage patterns and confirm conformance to the Potable Water System Design Criteria outline in Table 2.2 – Potable Water System Design Criteria. Three model runs are prepared for the ISI Project and are shown in Table 2.5 – LSAP Project Model Runs – Office Expansion Study.

Table 2.5
LSAP Project Model Runs – Office Expansion Study

Run	Description
1	Static Pressures
2	Peak Hour Demand
3	Maximum Day Demand + Fire Flow

See Appendix C – LSAP Potable Water Model Reports for model run results.

2.7 Potable Water System Recommendations

The existing potable water system, as shown in Appendix C – LSAP Potable Water Model Reports, is designed to meet the design criteria outlined in Table 2.2 – Potable Water System Design Criteria. Table 2.6 – Potable Water System Results for Office Expansion Study summarizes the pressure and velocity results for the referenced model scenarios listed in Table 2.5 – LSAP Project Model Runs – Office Expansion Study. Refer to Appendix C – LSAP Potable Water Demand Results for detailed results of model scenarios. In conclusion, no upgrades to the existing potable water system are required since the water model reflects the system being adequately supplied during maximum daily demand plus fire flow. A water supply analysis memorandum prepared by Ascent Environmental will follow this report and will similarly state that the existing potable water system is sufficient to meet proposed water and fire flow demands.

Table 2.6
Potable Water System Results for Office Expansion Study

Parameter	Requirement	Minimum	Maximum
Static ADD Pressure (psi)	120 max	75	77
PHD Velocity (fps)	7 max	-	1.73
MDD+FF Pressure (calculated system lower limit at total flow available) (psi)	20 min	73	-
MDD+FF Velocity (fps)	15 max	-	10.40

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CENTRAL EXPWY

COMMERCIAL ST

EX 8" PW

945 KIFER

CITY OF SUNNYVALE

CITY OF SANTA CLARA

955 KIFER

EX 12" PW

KIFER RD

EX 12" PW

EX 12" PW

EX 12" PW

932 KIFER

950 KIFER

JPB RIGHT-OF-WAY

EX 12" PW

SAN ZENO WAY

EX 10" PW

LAWRENCE EXPWY

EX 12" PW

EX 10" PW

SONORA CT

EX 10" PW

EX 10" PW

E EVELYN AVE

GRAPHIC SCALE

300 0 300

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Water\Office\Figure 2.1 - LSAP Existing Potable Water System.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

LEGEND

- CITY BOUNDARY
- OFFICE EXPANSION STUDY AREA
- EX 8" PW
- EX 10" PW
- EX 12" PW

DATE:	06/22/2020
SCALE:	1"=300'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 2.1 – EXISTING POTABLE WATER SYSTEM

SECTION 3: SANITARY SEWER SYSTEM

3.1 Sanitary Sewer System Design Criteria

The design criteria used for the office expansion development of the sanitary sewer model is based upon established industry operations standards and regulatory agency requirements. The sanitary sewer system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. At certain locations within the project area, City design guidelines were supplemented with updated pipe slope and invert information provided by the City. Sanitary sewer generation is assumed to be 95% of indoor potable water demands. This infrastructure study will identify which existing City sewer mains will need to be upgraded in order to support the anticipated sewer flows from the development within Office Expansion Study Area. All existing sewer mains are located within the City ROW. The pipe material of existing sewer mains is vitrified clay pipe (VCP). The design criteria are dependent on the demand scenario. Table 3.1 – Sanitary Sewer System Design Criteria presents the sanitary sewer system design criteria based on the supplemental information from the City.

Table 3.1
Sanitary Sewer System Design Criteria

Parameter	Value
Minimum pipe size	8-inch inside diameter
Pipe Material	PVC SDR-26 or better
Manning's coefficient, n, for recommended PVC pipes	0.01
Minimum Slope	0.5% (0.005 feet/feet) for sewer diameters 8-inches and smaller, 0.4% (0.004 feet/feet) for sewer diameters 10-inches and larger.
Maximum Slope	14.0% (0.14 feet/feet)
PWWF Maximum Pipe Flow Depth Ratio, *d/D*	0.5 for sewer diameters 10-inches and smaller, 0.75 for sewer diameters 12-inches and larger
Minimum Depth of Cover	5 feet below finished grade
Sewer Generation	95% of indoor potable water demand

Notes:
ADWF = Average Dry Weather Flow
PDWF = Peak Dry Weather Flow
PDWF = Peak Wet Weather Flow
d/D = ratio of depth of flow (*d*) to the pipe inside diameter (*D*)
fps = feet per second
PWWF = Peak Wet Weather Flow

Four flow conditions were analyzed:

1. ADWF in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. PWWF in Existing City Sewer System
4. PWWF in Recommended City Sewer System

The ADWF is based on the potable water average daily demand described in Section 2.4.2. To account for existing flows entering the project area from other areas of the City, existing sewer flows collected from flow monitoring sites at Lawrence Road north of Warburton Avenue, Kifer Road west of Lawrence Expressway, and Aster Avenue west of Willow Avenue were incorporated into the sanitary sewer model analysis. Existing sewer flow data collected from the flow monitoring cites were received from the City on February 6, 2020. According to the City of

Sunnyvale's Sanitary Sewer Systems Design Standards, the PDWF peaking factor is dependent upon ADWF. We have assumed a PDWF peaking factor that varies between 2.5 and 2.75 which is based on individual parcel demands. PWWF is based on PDWF and a design inflow and infiltration rate based on a 10-year storm event that is 65% of the ADWF. Table 3.2 – Sanitary Sewer System Peaking Factor summarizes the peaking factor to achieve PWWF based on the supplemental information from the City.

Table 3.2
Sanitary Sewer System Peaking Factor

Parameter	Value
Average Dry Weather Flow	225,663 gpd
PDWF[1]	PDWF = (varies between 2.5 and 2.75) * ADWF
PWWF	PWWF = ADWF * (PDWF peaking factor + 0.65)

Note:
PDWF peaking factor is dependent upon ADWF for each parcel.

3.2 Sanitary Sewer Collection System

3.2.1 Existing Sanitary Sewer Collection System

The existing sanitary sewer collection system within the vicinity of the LSAP consists of sewer mains that vary in size between 8-inches to 18-inches. Pipe material of the existing sewer mains is VCP. The existing sanitary sewer system within the LSAP boundary consists of a single drainage area. Sanitary sewer flows generally drain by gravity and ultimately drain to the existing 27-inch sanitary sewer main in Lawrence Expressway. All existing sewer mains are assumed to have adequate slope and that the pipe velocity can meet the minimum 2 fps. For 8-inch pipes, pipe slope was assumed to be 0.4%. Additional record drawings, manhole survey data, and construction documents were provided by the City to update pipe invert and slope information used in this sewer analysis model. Existing sanitary sewer system layout is shown on Figure 3.1 – LSAP Existing Sanitary Sewer System and existing manholes shown on Figure 3.2 – LSAP Existing Sanitary Sewer Manholes.

3.3 Sanitary Sewer System Model Sewer Flows

3.3.1 Land Use Sewer Generation Data

The sanitary sewer flows used are based on the indoor potable water for each land use. Outdoor water demands are not included in sanitary sewer flows because outdoor drains connect to the storm drain system.

3.3.2 Average Dry Weather Flow

The sanitary sewer ADWF is intended to be representative of the average day sanitary sewer generation. The sanitary sewer ADWF is a function of the indoor water use ADD. Table 3.3 – Office Expansion Study LSAP Sanitary Sewer Demand Summary represents indoor water use ADD for each land use shown in Table 2.4 – Office Expansion Study LSAP Potable Water Demand Summary (ADD). The sanitary sewer ADWF is based on 95% of the indoor potable water ADD. Total sewer demand use for each development is detailed in Appendix F – Sanitary Sewer System Demand Calculations. Sewer generation (gpm) that was calculated for each parcel was applied to each sewer line in the street that was adjacent to that particular parcel. This allows an even distribution of sewer generated for a particular parcel to account for existing sanitary sewer lines in the street.

Table 3.3
Office Expansion Study LSAP Sanitary Sewer Demand Summary

Land Use	Number	Unit	Indoor Domestic Water Demand (gpd)	Sanitary Sewer Demand (gpd)
Office/R&D	351,000	sf	45,630	43,349
Industrial	831,000	sf	174,510	165,784
Restaurant[1,2]	580	seat	17,400	16,530
Total	-	-	237,540	225,663

Notes:

1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:
$$(29{,}000\ sf \times 0.5) \times (\frac{4\ seats}{100\ sf}) = 580\ seats$$
2. Restaurant is defined as employee amenity space.

3.3.3 Peak Dry Weather Flow (PDWF)

The sanitary sewer PDWF is the highest sanitary sewer generation during the day due to diurnal peaks associated with higher water usage in the morning and early evening hours. PDWF is determined by applying a peaking factor to ADWF. City of Sunnyvale has varying peaking factors for PDWF which is dependent upon ADWF for each parcel. Peaking factors for the LSAP vary between 2.5 and 2.75.

3.3.4 Peak Wet Weather Flow (PWWF)

The sanitary sewer PWWF incorporates infiltration and inflow rate at 65% of the ADWF. This rate is added to the PDWF peaking factor.

Inflow is surface water that enters the wastewater system from yards, roof drains, downspouts, storm drain cross connections, or through manhole covers due to overland flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow typically occurs during heavy storm events or prolonged periods of precipitation.

Infiltration is groundwater that enters sewer facilities such as pipelines, laterals, and manholes through holes, breaks, joint/connection failures, and other openings. Infiltration is directly correlated to the total amount of piping and appurtenances in the ground. Infiltration quantities vary due to seasonal variation in the groundwater levels influenced by storm events, surface and soil conditions, condition of sanitary sewer systems, and type of pipe joints. The highest infiltration flows are typically observed following significant storm events and during the winter or peak precipitation months, when groundwater levels are high.

3.4 Sanitary Sewer Flow Distribution

Each parcel's total sanitary sewer generation was determined by reviewing the planned parcel land use and applying applicable land use sanitary sewer generation rate to it. The parcel land use summary is included in Appendix F – Sanitary Sewer System Demand Calculations for

reference.

Each parcel's total sanitary sewer flow was divided equally amongst the sanitary sewer manholes bordering the parcel as shown in Figure 3.2 – Existing Sanitary Sewer Manholes. The parcel flow entering a manhole represents a sanitary sewer lateral point of connection.

3.5 Hydraulic Grade Line Considerations

The analysis of the sanitary sewer system is assumed to be a free outfall condition.

3.6 Sanitary Sewer Boundary Conditions

In addition to the flow monitoring survey data provided by the City, the recommended sanitary sewer system is modeled based on boundary conditions taken from Technical Memorandum 7 attached to the City of Sunnyvale's 2015 Wastewater Collection System Master Plan. Since the LSAP Project is redeveloping existing lots, the recommended sewer model is analyzing existing City sewer mains and identifying which sewer mains will need to be upgraded in order to abide by City sanitary sewer standards.

3.7 Model Scenario Results and Analysis

The LSAP sanitary sewer model was created in Bentley StormCAD V8i SELECT series 5. The following sanitary sewer model flow conditions were developed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

Sanitary sewer model inside diameters were based on JM Eagle PVC Pipe Size for SDR 26 (160 psi).

3.7.1 Pipe Diameter

The sewer systems were modelled with the inside pipe diameters. Pipe diameters were reviewed based on the d/D exceeding the allowable depth of flow of 0.50 for pipe sizes 10-inches and smaller, and 0.75 for pipe sizes greater than 12-inches per the supplemental information from the City.

3.7.2 Flow Velocity

The flow velocities through the pipes were calculated using the Manning's equation. The Manning's equation calculates the flow velocities using the pipe's roughness coefficient, the hydraulic radius, and the slope of the pipe.

3.7.2.1 Average Dry Weather Flow (ADWF)

Figure 3.3 – LSAP Average Dry Weather Flow Pipe Velocity illustrates the ADWF pipe velocities for the sanitary sewer system. The sanitary sewer system ADWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The recommended system described falls under the housing expansion infrastructure impact study. The results of the analysis show LSAP ADWF velocities ranging from approximately 2.39 fps to 5.67 fps in the City's existing sewer system. ADWF velocities in the recommended City sewer system range from approximately 2.39 fps to 6.24 fps.

3.7.2.2 Peak Wet Weather Flow (PWWF)

Figure 3.4 – LSAP Peak Wet Weather Flow Pipe Velocity illustrates the PWWF pipe velocities for the sanitary sewer system. The sanitary sewer system PWWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The recommended system described falls under the housing expansion infrastructure impact study. The

results of the analysis show LSAP PWWF velocities ranging from approximately fps 3.21 to 7.84 fps in the City's existing sewer system. PWWF velocities in the recommended City sewer system range from approximately 3.21 fps to 8.20 fps.

3.8 Sanitary Sewer System Recommendations

The existing sanitary sewer system, as shown in Appendix D – LSAP Sewer Model Reports, is designed to meet the design criteria outlined in Table 3.1 – Sanitary Sewer System Design Criteria. Refer to Appendix D – LSAP Sewer Model Reports for detailed results of model scenarios. In conclusion, no upgrades to the existing sanitary sewer system are required since the model results display no issues with pipe capacity and flow under various demand scenarios and the existing pipe system abides by City design standards.

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CENTRAL EXPWY

COMMERCIAL ST

EX 8" VCP

945 KIFER

CITY OF SUNNYVALE

CITY OF SANTA CLARA

955 KIFER

KR-P1

EX 18" VCP

KR-P2

KR-P3

KIFER RD

KR-P4

EX 18" VCP

KR-P5

KR-P6

LE-P7

EX 27" VCP

932 KIFER

950 KIFER

JPB RIGHT-OF-WAY

SAN ZENO WAY

EX 10" VCP

LAWRENCE EXPWY

EX 10" VCP SONORA CT

EX 27" VCP

E EVELYN AVE

EX 15" VCP

GRAPHIC SCALE

300 0 300

NOTES:

1. PIPE LABELS SHOWN ON THIS SHEET REPRESENT THE PIPES USED IN THE SANITARY SEWER MODEL. THESE LABELS CORRESPOND TO THE MODEL RESULTS TABLE SHOWN IN APPENDIX D.

LEGEND

- CITY BOUNDARY
- OFFICE EXPANSION STUDY AREA
- EX 8" SEWER
- EX 10" SEWER
- EX 12" SEWER
- EX 15" SEWER
- EX 18" SEWER
- EX 24" SEWER
- EX 27" SEWER
- MANHOLE
- KR-P1 ← PIPE NUMBER
- STREET LOCATION

DATE:	06/22/2020
SCALE:	1"=300'
DESIGN:	BPB
DRAWN BY:	EYS
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.1 – EXISTING SANITARY SEWER SYSTEM

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.1 - LSAP Existing Sanitary Sewer System - Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

© BKF Engineers

CENTRAL EXPWY

COMMERCIAL ST

945 KIFER

955 KIFER

932 KIFER

950 KIFER

CITY OF SUNNYVALE
CITY OF SANTA CLARA

333–206

334–201

334–202

KIFER RD

335–201

335–202

KIFER RD

336–201

336–202

336–207

LAWRENCE EXPWY

SAN ZENO WAY

SONORA CT

JPB RIGHT-OF-WAY

E EVELYN AVE

GRAPHIC SCALE
300 0 300

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- EX SEWER
- EX MANHOLE

DATE:	06/22/2020
SCALE:	1"=300'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.2 – EXISTING SANITARY SEWER MANHOLES

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.2 – LSAP Existing Sanitary Sewer Manholes – Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

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CENTRAL EXPWY

COMMERCIAL ST

945 KIFER

CITY OF SUNNYVALE
CITY OF SANTA CLARA

955 KIFER

KIFER RD

KIFER RD

932 KIFER

950 KIFER

SAN ZENO WAY

LAWRENCE EXPWY

JPB RIGHT-OF-WAY

SONORA CT

E EVELYN AVE

GRAPHIC SCALE
300 0 300

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- EX SEWER

SS GRAVITY MAIN VELOCITY

- 2.00 FT/S TO 9.99 FT/S

DATE:	06/22/2020
SCALE:	1"=300'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.3 – LSAP AVERAGE DRY WEATHER FLOW PIPE VELOCITY

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.3 – LSAP Average Dry Weather Flow Pipe Velocity – Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

© BKF Engineers

CENTRAL EXPWY

COMMERCIAL ST

945 KIFER

CITY OF SUNNYVALE
CITY OF SANTA CLARA

955 KIFER

KIFER RD

KIFER RD

932 KIFER

950 KIFER

SAN ZENO WAY

LAWRENCE EXPWY

JPB ROW

SONORA CT

E EVELYN AVE

GRAPHIC SCALE
300 0 300

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- EX SEWER

SS GRAVITY MAIN VELOCITY

- 2.00 FT/S TO 9.99 FT/S

DATE:	06/22/2020
SCALE:	1"=300'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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650/482-6399 (FAX)

LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.4 – LSAP PEAK WET WEATHER FLOW PIPE VELOCITY

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Office\Figure 3.4 – LSAP Peak Wet Weather Flow Pipe Velocity – Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

SECTION 4: STORM DRAIN SYSTEM

4.1 Existing Storm Drain Layout

The existing storm drain for LSAP is shown on Figure 4.1 – LSAP Existing Storm Drain System. Existing storm drain mains are maintained by the City of Sunnyvale. The LSAP area is currently served by existing storm drain mains that vary in size between 18-inches to 30-inches.

4.2 Storm Drain System for Developed Projects

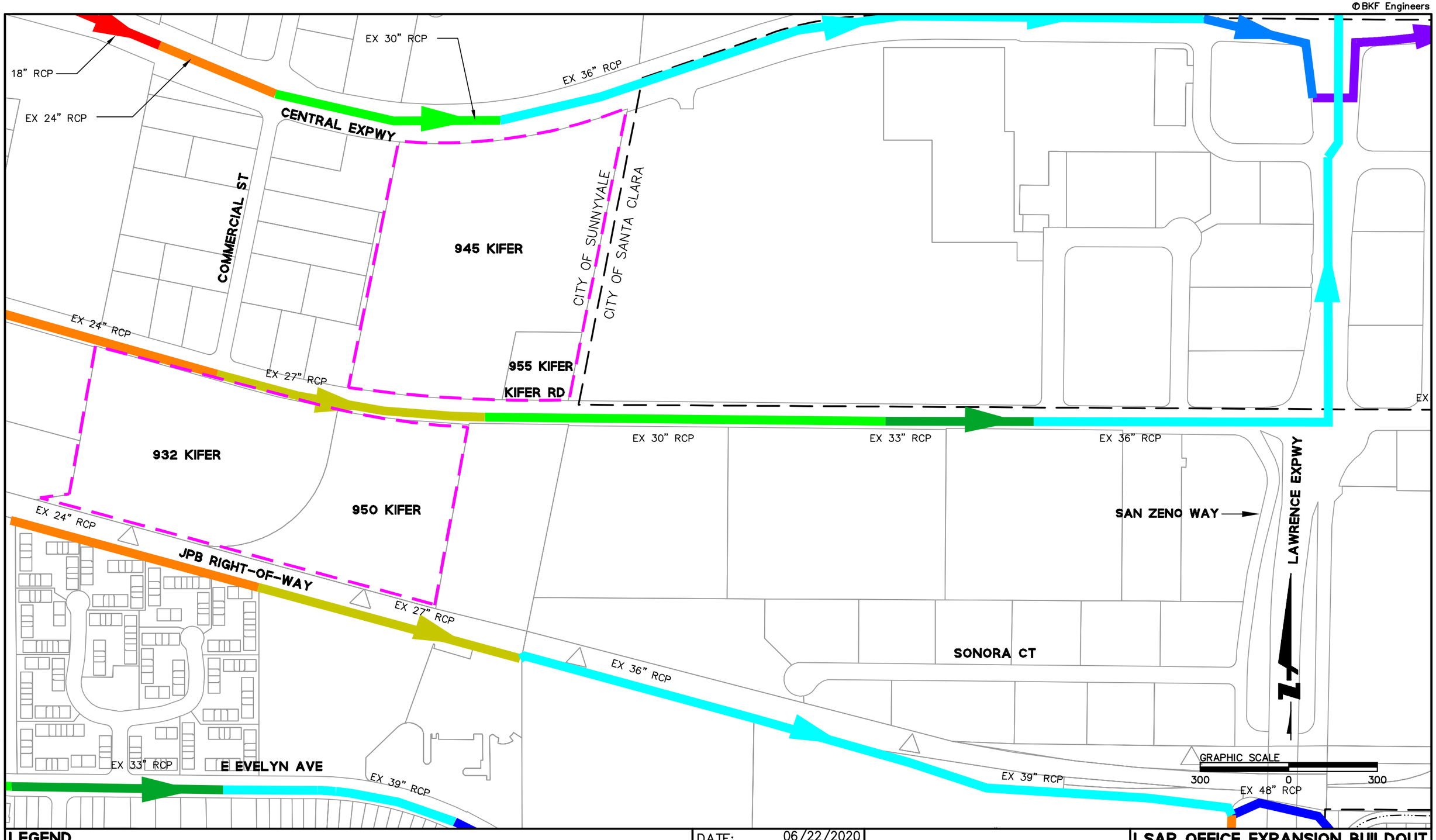
The existing site is approximately 719,000 sf (51%) of impervious surfaces and 692,100 sf (49%) of pervious surfaces. The north site, located at 945/955 Kifer Road, composes of 447,500 sf (66%) of pervious surfaces and 230,600 sf (34%) of impervious surface. The south site, located at 932/950 Kifer Road, composes of 244,600 sf (33%) of pervious surfaces and 488,400 sf (67%) of impervious surface.

The office expansion LSAP is proposed to have approximately 862,900 sf (61%) of impervious surfaces and 548,100 sf (39%) of pervious surface. The north site proposes 371,600 sf (55%) of pervious surfaces and 306,400 sf (45%) of impervious surface. The south site proposes 176,500 sf (24%) of pervious surfaces and 556,500 sf (76%) of impervious surface. The proposed developments abide by the City of Sunnyvale's Municipal Code requirements for a minimum of 20% landscaped surfaces for each development parcel. The north and south sites proposes bio-treatment areas on-site to treat impervious surfaces. The remainder of the pervious surfaces are assumed to be self-treating and infiltrate within their own development site.

4.3 Storm Drain System Recommendations

With on-site treatment areas for impervious surfaces and self-treating pervious surfaces elsewhere throughout the site, the proposed developments would abide by the City of Sunnyvale's Municipal Code requirements for a minimum of 20% landscaped surfaces for each parcel. Therefore, the proposed Office Expansion Study Area project assumes no increase in stormwater runoff to the existing storm drain system.

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LEGEND

- CITY BOUNDARY
- OFFICE EXPANSION STUDY AREA
- EX 18" STORM
- EX 24" STORM
- EX 27" STORM
- EX 30" STORM
- EX 36" STORM

DATE:	06/22/2020
SCALE:	1"=200'
DESIGN:	BPB
DRAWN BY:	EYS
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

LSAP OFFICE EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 4.1 – EXISTING STORM DRAIN SYSTEM

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Storm\Office\Figure 4.1 – Existing Storm System – Office.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

APPENDIX A

Block Book Pages for Lawrence Station Area Plan

APPENDIX A

Block Book Pages for Lawrence Station Area Plan

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

349	348	347
332	333	334
309	308	307

333

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

348	347	346
333	334	335
308	307	306

334

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

347	346	345
334	335	336
307	306	305

335

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

"	Flushing Inlet	S	Clean Out
2	Active Manhole	⁞	Active Plug
2	Abandoned Manhole	⁞	Abandoned Plug
2	Active Drop Manhole	)	Meter
2	Diversion Structure	Ů	Pump Station
<	Grade Break	T	Lift Station
1	Main Line Clean Out	S	Riser
%	Network Structure	"	Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

Ê

346	345	344
335	336	337
306	305	304

336

0 50 Feet

Nov 11, 2019

APPENDIX B

LSAP Parcels with Development Assumptions

Appendix B
Lawrence Station Area Plan
LSAP Parcels with Devleopment Assumptions
Received from George Schroeder of the City of Sunnyvale on March 16, 2020

Existing — Parcels highlighted in green will be analyzed as the existing condition.
Proposed — Parcels highlighted in blue will be analyzed as the proposed condition.

Proposed Intuitive Surgical Properties to add to LSAP Boundaries - nonresidential only. See GPA/RZ 2018-7723

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Existing FAR	Proposed Bldg Sq. Ft.
20540001, 20540002	945-955	Kifer	Rd	678048	15.57	2%	364,000
20549005, 20549012	932-950	Kifer	Rd	732897	16.83	22%	847,000
			Totals	**1410945**	**32.39**		

APPENDIX C

LSAP Potable Water Model Reports

CENTRAL EXPRESSWAY

KIFER ROAD

UPRR

MONROE STREET

LAWRENCE EXPRESSWAY

R-13
H-13
R-14
H-14
J-1
R-1
H-1
J-2
J-3
R-2
H-2
J-4
H-3
R-3
R-6
H-6
J-6
J-7
J-9
H-5
R-5
J-8
R-4
H-4
J-12
J-10
J-13
R-7
H-7
R-9
H-9
J-14
J-11
H-8
R-8
J-15
H-10
R-10
J-16
R-11
H-11
H-12
R-12

NOTE:

1. THE PRESENTED MODEL LAYOUT IS A FUNCTIONAL APPROXIMATION OF THE DOMESTIC WATER SYSTEM, BASED ON THE EXISTING PLANS. THIS EXHIBIT IS PROVIDED SOLELY FOR THE PURPOSE OF DOCUMENTATION FOR THIS HYDRAULIC MODELING STUDY.

2. SERVICE LATERALS ARE NOT SHOWN. LOSSES DUE TO METERS AND BACKFLOW PREVENTION DEVICES WILL OCCUR IN SERVICE LATERALS AND ARE NOT INCLUDED IN THE MODELING OF DOMESTIC WATER MAINS.

EXHIBIT 1. WaterCAD Model Layout

Lawrence Station Area Plan

Office Study Project

SCALE 1" = 800'

BKF No. 20180080-10

GRAPHIC SCALE

800 0 800 1600

LEGEND

- MODEL NODE
- MODEL RESERVOIR
- J-00 NODE ID
- H-00 HYDRANT ID
- HYDRANT LOCATION
- 12" CAST IRON PIPE (EXISTING)
- 12" DUCTILE IRON PIPE (EXISTING)
- 10" DUCTILE IRON PIPE (EXISTING)
- 8" DUCTILE IRON PIPE (EXISTING)

BkF 100+ YEARS

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APPENDIX C-1

Model Demand Scenario 1: Static

Node Report

Node ID	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
J-1	63.00	240.00	77
H-1	63.00	240.00	77
H-13	63.00	240.00	77
H-14	67.00	240.00	75

APPENDIX C-2

Model Demand Scenario 2: Peak Hour Demand

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ PHD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	500	1,000	76	1.73	TRUE
H-1	500	1,000	77	0.18	TRUE
H-13	500	1,000	77	0.29	TRUE
H-14	500	1,000	75	0.10	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX C-3

Model Demand Scenario 3: Max Day Demand + Fire Flow

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ MDD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	4,820	6,000	73	10.40	TRUE
H-1	4,820	6,000	76	1.06	TRUE
H-13	4,820	6,000	76	1.77	TRUE
H-14	4,820	6,000	75	0.59	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX D

LSAP Sewer Model Reports

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	**d/D**
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-KR-P1	333-206	334-201	**336.11**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
EX-KR-P2	334-201	334-202	**492.82**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
EX-KR-P3	334-202	335-201	**519.37**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
EX-KR-P4	335-201	335-202	**571.01**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.61	**0.32**
EX-KR-P5	335-202	336-201	**634.28**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
EX-KR-P6	336-201	336-202	**733.54**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.90	11.20	10.18	5.67	**0.32**
EX-LE-P7	336-202	336-207 (EX)	**3533.54**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	42.90	39.23	14.14	12.85	5.20	**0.43**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	**d/D**
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-KR-P1	333-206 (P)	334-201 (P)	**336.11**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
PR-KR-P2	334-201 (P)	334-202 (P)	**492.82**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
PR-KR-P3	334-202 (P)	335-201 (P)	**519.37**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
PR-KR-P4	335-201 (P)	335-202 (P)	**571.01**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.62	**0.32**
PR-KR-P5	335-202 (P)	336-201 (P)	**634.28**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
PR-KR-P6	336-201 (P)	336-202 (P)	**733.54**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.87	11.20	10.18	5.67	**0.32**
PR-LE-P7	336-202 (P)	336-207 (P)	**3533.54**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	42.87	39.08	14.17	12.58	6.24	**0.37**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-KR-P1	333-206	334-201	**957.91**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
EX-KR-P2	334-201	334-202	**1460.66**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
EX-KR-P3	334-202	335-201	**1557.58**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
EX-KR-P4	335-201	335-202	**1720.26**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
EX-KR-P5	335-202	336-201	**1940.67**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
EX-KR-P6	336-201	336-202	**2314.89**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.71	10.81	10.18	7.84	**0.58**
EX-LE-P7	336-202	336-207 (EX)	**9798.29**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	43.71	39.96	13.33	12.85	6.51	**0.79**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-KR-P1	333-206 (P)	334-201 (P)	**957.91**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
PR-KR-P2	334-201 (P)	334-202 (P)	**1460.66**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
PR-KR-P3	334-202 (P)	335-201 (P)	**1557.58**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
PR-KR-P4	335-201 (P)	335-202 (P)	**1720.26**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
PR-KR-P5	335-202 (P)	336-201 (P)	**1940.67**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
PR-KR-P6	336-201 (P)	336-202 (P)	**2314.89**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.53	10.81	10.18	7.84	**0.58**
PR-LE-P7	336-202 (P)	336-207 (P)	**9798.29**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	43.53	39.65	13.51	12.58	8.20	**0.63**

Note: EX-LE-P7 pipe segment is not within the office expansion scope. It is analyzed as part of the housing expansion scope.

APPENDIX E

Potable Water System Demand Calculations

Appendix E
Lawrence Station Area Plan
Potable Water System Demand Calculations

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
1 & 2	--	351,000	--	13,000	--	78,702	54.65
53	--	--	831,000	16,000	--	184,110	127.85
Subtotal	--	351,000	831,000	29,000	--	262,812	182.51

APPENDIX F

Sanitary Sewer System Demand Calculations

Appendix F
Lawrence Station Area Plan
Sanitary Sewer System Demand Calculations

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
1 & 2	--	351,000	--	13,000	--	50,759	35.25	96.93	119.85
53	--	--	831,000	16,000	--	174,905	121.46	303.65	382.60
Subtotal	--	351,000	831,000	29,000	--	225,663	156.71	400.59	502.45

Appendix I

Lawrence Station Area Plan
Proposed Increase In Housing
Potential Within the LSAP
(Housing Expansion Buildout)
Infrastructure Impact Study,
June 22, 2020

LAWRENCE STATION AREA PLAN

PROPOSED INCREASE IN HOUSING POTENTIAL WITHIN THE LSAP (HOUSING EXPANSION BUILDOUT) INFRASTRUCTURE IMPACT STUDY

June 22, 2020

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

255 Shoreline Drive, Suite 200
Redwood City, CA 94065
650.482.6300

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Appendix A – Block Book Pages for Lawrence Station Area Plan

Appendix B – LSAP Parcels with Development Assumptions

Appendix C – LSAP Potable Water Model Reports

Appendix D – LSAP Sewer Model Reports

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Appendix G – Cost Estimate for City Sanitary Sewer System Recommendations

SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Project Overview

The proposed Lawrence Station Area Plan (LSAP) Amendment Project (Project) is generally centered around a ½ mile radius of the existing Lawrence Caltrain Station at 137 San Zeno Way in Sunnyvale, California and is approximately 252.09 acres. The overall LSAP project is divided into two study areas: the Housing Expansion Study Area (i.e. proposed modifications to the adopted LSAP would allow for an addition of 3,612 net new units within portions of the adopted LSAP) and the Office Expansions Study Area. This Infrastructure Study will address the Housing Expansion Study Area which is bounded by the City of Santa Clara to the north and east, Reed Avenue, Aster Avenue, and the railroad right of way (ROW) to the south, and the Intuitive Surgical (ISI) offices to the west. The project site is located in the far eastern area of the City of Sunnyvale around the Lawrence Caltrain station. Figure 1.1 - Project Location - illustrates the regional location of the Project.

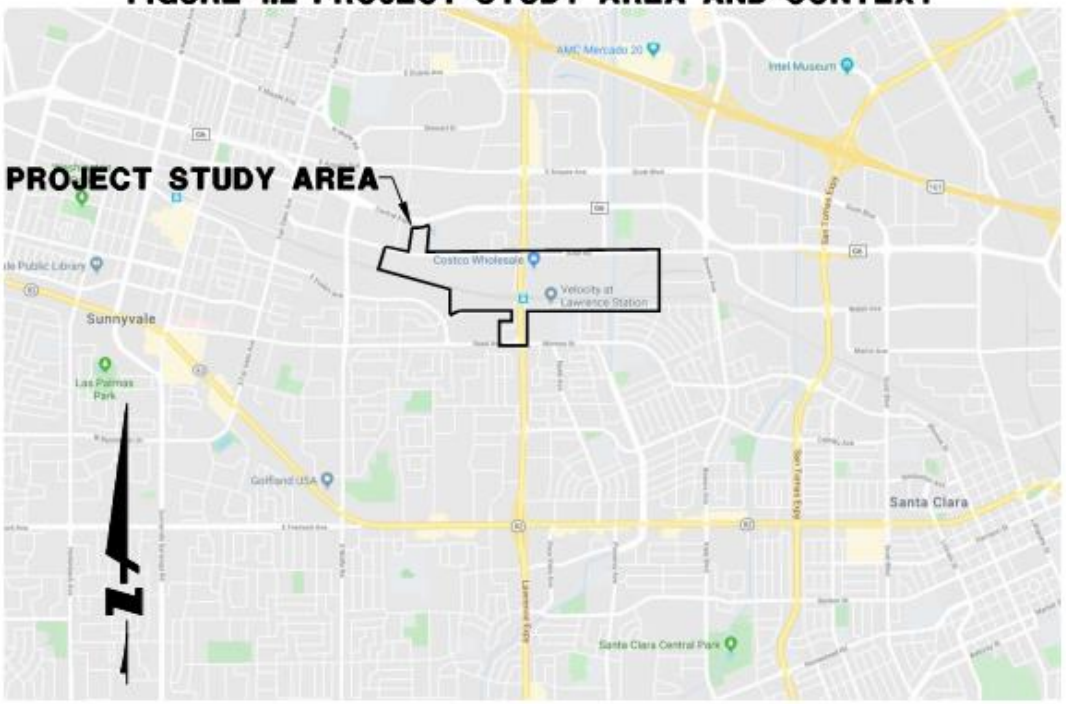
The Housing Expansion Study Area is approximately 219.70 acres that include 25.27 acres of public ROW, 17.94 acres of railroad ROW, and 176.49 acres of existing developments.

The Office Expansion Study Area is approximately 32.39 acres industrial land owned by ISI that is proposed for redevelopment as office/R&D that encompasses existing developments for ISI and an industrial site. The office LSAP is bounded by Central Expressway and Kifer Road to the north, City of Santa Clara and the Housing Expansion Study Area to the east, railroad ROW to the south, and commercial developments east of Commercial Street and San Lucar Court. Figure 1.2 - Project Study Area and Context - illustrates the Study Area Boundaries and the location of the Project within the City. Please refer to the Office Expansion Buildout Infrastructure Impact Study for analysis within the Office Expansion Study Area.

FIGURE 1.1 PROJECT LOCATION



FIGURE 1.2 PROJECT STUDY AREA AND CONTEXT



The housing expansion study area includes a mixed-use community with a wide range of residential, retail, and office. Existing utility infrastructure requiring upgrades to serve the

proposed increase in allowable housing potential within the adopted LSAP (i.e. the addition of 3,612 net new units within the LSAP) will be identified in this study.

1.2 Lawrence Station

1.2.1 Existing Conditions and Land Use

The LSAP area is approximately 252.09 acres. The study area includes portions of the Lawrence Caltrain station as well as existing commercial, industrial, and residential properties. Existing conditions and Land Uses within the LSAP include several development projects under construction, including new office buildings, mixed-use residential and retail, and self-storage.

1.2.2 Adopted LSAP Conditions

In December 2016, the Sunnyvale City Council approved the LSAP and its associated General Plan Amendment and Rezoning. The LSAP consisted of primarily residential redevelopment with office and research and development (R&D) developments interspersed. The adopted LSAP includes 2,323 residential units and 1,200,000 square feet (sf) of net new office/R&D development.

1.2.3 Proposed Conditions

At the time of the City's LSAP adoption (December 2016), the Sunnyvale City Council directed staff to return with a plan to study additional housing opportunities within the LSAP area. There are no planned increases to office/R&D development potential. The City Council subsequently selected a preferred land use alternative on June 26, 2018, which studies an increase in the residential density allowance for both MXD-I (Flexible Mixed-Use I) and MXD-II (Flexible Mixed-Use II) zoned areas, and expands the area where housing may be considered to the M-S/LSAP (Industrial and Service, LSAP Combining District) and O-R (Office/Retail) zoning districts.

Residential development capacity under the adopted LSAP allows for a maximum of 2,323 net new dwelling units under the plan's 'Estimated Likely Development Scenario'. A

total of 1,261 net new housing units have been approved by the City since the LSAP was adopted in December 2016; therefore, a balance of 1,062 net new housing units currently remains for buildout within the adopted LSAP. With implementation of the proposed LSAP Update, the addition of 3,612 net new units would be allowable within the plan area. In addition, the maximum density allowance (with incentives) for MXD-I and MXD-II zoned areas within the LSAP would increase from 68 dwelling units per acre (du/ac) to 100 du/ac. The project would also expand where new housing may be considered to the M-S/LSAP zoning district with a maximum density allowance (with incentives) of 100 du/ac and O-R zoning district with a maximum density allowance (with incentives) of 54 du/ac. The housing expansion study area for the LSAP update is shown in Figure 1.3 – Proposed LSAP Study Area Layout.

1.3 Project Datum

All elevations referenced herein are based on the following:

- Vertical datum used in the City of Sunnyvale's Utility and GIS Maps
- Record drawings provided by the City for Aster Avenue and Willow Avenue
- Manhole survey data provided by the City for Lawrence Expressway

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CENTRAL EXPWY

CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

COMMERCIAL ST

945 KIFER

955 KIFER

KIFER RD

KIFER RD

932 KIFER

950 KIFER

JPB RIGHT-OF-WAY

MXD-II

SAN ZENO WAY

MXD-I

LAWRENCE EXPWY

MXD-I

LAWRENCE STATION RD

CALABAZAS CREEK

MXD-II

M-S/LSAP

URANIUM DR

SONORA CT

MXD-I

LAWRENCE VTA STATION

JPB RIGHT-OF-WAY

E EVELYN AVE

MXD-III

ASTER AVE

AGATE DR

EL CAMINO CHANNEL

WILLOW AVE

R-5

EL CAMINO CHANNEL

O-R

FRENCH ST

MONROE ST

REED AVE

CITY OF SUNNYVALE

CITY OF SANTA CLARA

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- PUBLIC RIGHT-OF-WAY

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE IMPACT STUDY

FIGURE 1.3 – PROPOSED LSAP STUDY AREA LAYOUT

DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Figure 1.3 – Proposed Site Layout.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

SECTION 2: POTABLE WATER SYSTEM

2.1 Potable Water System Design Criteria

The design criteria used for the development of the potable water model is based upon established industry operations standards and regulatory agency requirements. The potable water system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water and fire codes and standards unless otherwise permitted. Since the City of Sunnyvale does not have written standards for water generation, this report will use Redwood City's Design Standards to estimate project water demands based on correspondence between the City and BKF. The one exception is that this analysis will calculate residential demand using 55 gallons per day per capita based on correspondence between BKF and the City of Sunnyvale. The intent of this study is to identify which existing City water mains will need to be upgraded in order to provide adequate water supply to the LSAP. All existing water mains are located within the City Right-of-Way except for an existing 12-inch main running between Kifer Road and Sonora Court located in a public utility easement.

The design criteria are dependent on the demand scenario. Table 2.1 – Potable Water System Demand and Peaking Factor presents the potable water system demand and peaking factor for the demand scenario. Assumed peaking factors for max day demand and peak hour demand scenarios are based on correspondence between BKF and the City of Sunnyvale.

Table 2.1
Potable Water System Demand and Peaking Factor

Parameter	Value
Average Day Demand (ADD)	1,319,228 gpd
Fire Flow Demand (FF)	4,500 gpm
Maximum Day Demand (MDD)	MDD = 2.0 ADD
Peak Hour Demand (PHD)	PHD = 3.0 ADD

Notes:
1. Fire flow demand based on an assumed R-2 Occupancy type building and construction Type III-A,

assuming 25% fire flow reduction for sprinkling.
2. gpd = gallons per day
3. gpm = gallons per minute

Table 2.2 – Potable Water System Design Criteria presents the potable water system design criteria.

Table 2.2
Potable Water System Design Criteria

Parameter	Value
Pipe size	Pipe diameters of 8, 10, 12, and 16 inches shall be used for all distribution and feeder mains.
Pipe Material	For water mains 12-inches and smaller shall be C900 DR14 PVC pipe or AWWA C-151/A21.51 ductile iron pipe (DIP). Water mains larger than 12-inches shall be C905 DR14 PVC or AWWA C-151/A21.51 DIP.
Hazen Williams C-value for recommended pipes	140 for DIP, 150 for PVC
Maximum static pressure	120 psi
Maximum velocity during PHD	7 fps
Maximum velocity during MDD+FF	15 fps
Minimum system pressure during MDD+FF	20 psi

Notes:
fps = feet per second
psi = pounds per square inch

2.2 Potable Water System Layout

Potable water is supplied to the LSAP by the City of Sunnyvale through an existing 12-inch diameter cast iron pipe (CIP) in Lawrence Expressway from the north and a 12-inch diameter asbestos-concrete pipe from the south. Additionally, there is an existing 12-inch diameter CIP in Kifer Road. Aster Avenue and Reed Avenue both contain existing 10-inch diameter CIPs. Existing potable water system layout is shown on Figure 2.1 – Existing Potable Water System.

2.3 Upgraded Potable Water System

2.3.1 Proposed Water Demand Factors

The potable water demand factors used for the Project's various land uses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD). The total estimated water demands for the Project land uses are shown on Table 2.4 – Total Buildout Potable Water Demand Summary (ADD). Water demands are derived from Redwood City's Design Standards with the exception of indoor water demands. Per capita demands for indoor residential demand was determined based on input from the City of Sunnyvale.

Table 2.3
LSAP Potable Water Demand Factors (ADD)

Land Use	Indoor Potable Water Demand Factors (ADD)	Outdoor Potable Water Demand Factors (ADD)	Total Water Demand (ADD)
Residential[1]	121 gpd/unit	37.4 gpd/unit	158.4 gpd/unit
Office/R&D	0.13 gpd/sf	0.072 gpd/sf	0.202 gpd/sf
Industrial	0.21 gpd/sf	0 gpd/sf	0.21 gpd/sf
Restaurant	30 gpd/seat	0 gpd/seat	30 gpd/seat
Storage Facility	0.003 gpd/sf	0 gpd/sf	0.003 gpd/sf

Notes:
1. Indoor potable water demand based on 55 gpd/person * 2.2 persons/unit. Outdoor potable water demand based on 17 gpd * 2.2 persons/unit. 55 gpd/person was determined after a phone conversation between BKF and Eric Evans with the City of Sunnyvale.
2. sf = square feet

2.3.2 Model Results Discussion

The existing potable water system is sufficient to supply the potable water demands as well as provide fire flow to the study area. Under the scenario of max day demand and fire flow, the water model analysis determined that the flow demand would be at its highest of any scenario at 4,820 gpm as seen in Appendix C-3 – Model Demand Scenario 3: Max Day Demand + Fire Flow. However, the existing potable water system is able to provide a flow between 5,000 and 6,000 gpm, which sufficiently meets the max day and fire flow demands. The impact of the proposed LSAP indicates that no improvements are required for the City's potable water system.

2.4 Potable Water System Model Water Demands

2.4.1 Sources of Land Use Water Demand Data

Potable water demand factors for the model analyses are shown in Table 2.3 – LSAP Potable Water Demand Factors (ADD) and were applied to the project program to develop the project potable water demand total. Table 2.4 – Total Buildout Potable Water Demand Summary (ADD) provides water demands by land use including proposed sites associated with the LSAP and existing parcels expected to remain within the LSAP area.

See Appendix E – Potable Water System Demand Calculations, for model demand calculations on a block by block basis. Total project development will not exceed the demands presented in Table 2.4 – Total Buildout Potable Water Demand Summary.

2.4.2 Average Day Demand (ADD)

The demand factors are presented in Table 2.3 – LSAP Project Potable Water Demand Factors (ADD). The demand summary for the overall LSAP Housing Expansion including proposed sites associated with the LSAP and existing parcels to remain is presented in Table 2.4 – Total Buildout Potable Water Demand Summary (ADD). Table 2.5 – Office Expansion Study LSAP Potable Water Demand Summary (ADD) reflects the average day demand for the Office Expansion Study.

Table 2.4
Total Buildout Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Residential	5,935	Units	158.4	940,104
Office/R&D	1,212,374	sf	0.202	244,900
Industrial	614,598	sf	0.21	129,065
Restaurant[1,2]	156	seat	30	4,680
Storage Facility	159,637	sf	0.003	532
			Total	1,319,281

Notes:

1. Existing restaurant located at 1210 Kifer Road is assumed to have 156 seats. This is based on the assumption that 50% of restaurant space (7,800 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:

$$(7{,}800\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 156\ seats$$

2. Restaurant is defined as employee amenity space.
3. The square footage numbers provided in this table present the project buildout numbers and the existing parcels expected to remain.

Table 2.5
Office Expansion Study LSAP Potable Water Demand Summary (ADD)

Land Use	Number	Unit	Demand/Unit (gpd)	Total (gpd)
Office/R&D	351,000	sf	0.202	70,902
Industrial	831,000	sf	0.21	174,510
Restaurant[1,3]	580	seat	30	17,400
			Total	262,812

Notes:

1. Total restaurant seating is assumed to be 580 seats. This is based on the assumption that 50% of restaurant space (29,000 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:

$$(29{,}000\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 580\ seats$$

2. Block by block water demand calculations shown in Appendix E.
3. Restaurant is defined as employee amenity space.

2.4.3 Maximum Day Demand

Maximum Day Demand (MDD) represents the maximum volume of water used in a 24-hour period for the entire year. A water system is typically evaluated under a maximum day plus fire flow demand condition as this condition allows the system to be stressed at a higher demand rate to ascertain if pipeline carrying capacities are adequate in a fire emergency. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 2 was applied to ADD.

2.4.4 Peak Hour Demand

Peak Hour Demand (PHD) represents the highest hourly demand for the entire system, and simulates the highest flow rate expected. To determine the PHD, a peaking factor was applied to increase the ADD. Peaking factors represent the increase above ADD and are a statistical concept typically obtained from historical data. As identified in Table 2.1 – Potable Water System Demand and Peaking Factor, a peaking factor of 3 was applied to ADD.

2.4.5 Fire Flow Demand

The fire flow (FF) demand is assumed to be 4,500 gallons per minute (gpm) based on correspondence between the City of Sunnyvale, Ascent Environmental, and BKF Engineers.

2.5 Potable Water System Model Boundary Conditions

The recommended potable water system is modeled based on calibrated boundary conditions and fire hydrant flow data received from the city completed for the LSAP Project. Since the LSAP Project is redeveloping existing lots, the recommended water model is analyzing existing City water mains and identifying which water mains will need to be upgraded in order to provide adequate water supply for the redevelopment.

2.6 Potable Water System Model Scenario

The LSAP water model was created in Bentley Water CAD V8i SELECT series 1. A series of model scenarios were created to reflect the range of demand usage patterns and confirm conformance to the Potable Water System Design Criteria outline in Table 2.2 – Potable Water System Design Criteria. Three model runs are prepared for the Housing Expansion Study Area and are shown in Table 2.6 – LSAP Project Model Runs – Housing Expansion Study.

Table 2.6
LSAP Project Model Runs – Housing Expansion Study

Run	Description
1	Static Pressures
2	Peak Hour Demand
3	Maximum Day Demand + Fire Flow

See Appendix C – LSAP Potable Water Model Reports for model run results.

2.7 Recommended Potable Water System Model Results

The existing potable water system, as shown in Appendix C – LSAP Potable Water Model Reports, is designed to meet the design criteria outlined in Table 2.2 – Potable Water System Design Criteria. Table 2.7 – Potable Water System Results for Housing Expansion Study summarizes the pressure and velocity results for the referenced model scenarios listed in Table 2.6 – LSAP Project Model Runs – Housing Expansion Study. Refer to Appendix C – LSAP Potable Water Model Reports for detailed results of model scenarios.

Table 2.7
Potable Water System Results for Housing Expansion Study

Parameter	Requirement	Minimum	Maximum
Static ADD Pressure (psi)	120 max	68	85
PHD Velocity (fps)	7 max	-	2.96
MDD+FF Pressure (calculated system lower limit at total flow available) (psi)	20 min	33	-
MDD+FF Velocity (fps)	15 max	-	< 15

Note:
MDD+FF pressure was 4,820 gpm, however the model was allowed to run with flows higher than 5,000 gpm, which resulted in it stopping at 15 fps.

2.8 Potable Water System Conclusion

Based on the results shown in Appendix C-2 – Model Demand Scenario: Peak Hour Demand and C-3 – Model Demand Scenario: Max Day Demand + Fire Flow, the existing potable water system is sufficient to meet proposed potable water and fire flow (FF) demands during average day demand (ADD), max day demand (MDD), and peak hour demand (PHD). No new upgrades to the potable water system were determined to be needed at this time. A water supply analysis will be prepared by Ascent Environmental.

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CENTRAL EXPWY
CITY OF SUNNYVALE
CITY OF SANTA CLARA
EX 8" PW
COMMERCIAL ST
EX 12" PW
KIFER RD
SAN ZENO WAY
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
EX 10" PW
SONORA CT
E EVELYN AVE
ASTER AVE
WILLOW AVE
EL CAMINO CHANNEL
REED AVE
AGATE DR
FRENCH ST
MONROE ST

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- EX 8" PW
- EX 10" PW
- EX 12" PW

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 2.1 – EXISTING POTABLE WATER SYSTEM

DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Water\Housing\Figure 2.1 – LSAP Existing Potable Water System.dwg
PLOT DATE: 06-19-20
PLOTTED BY: lnou

SECTION 3: SANITARY SEWER SYSTEM

3.1 Sanitary Sewer System Design Criteria

The design criteria used for the development of the sanitary sewer model is based upon established industry operations standards and regulatory agency requirements. The sanitary sewer system will be designed in accordance to the City of Sunnyvale's Standard Plans and Specifications and to applicable City, State, and Federal water codes and standards unless otherwise permitted. At certain locations within the project area, City design guidelines were supplemented with manhole survey data and record drawings provided by the City. Sanitary sewer generation is assumed to be 95% of indoor potable water demands. This infrastructure study will identify which existing City sewer mains will need to be upgraded in order to support the anticipated sewer flows from the development within Housing Expansion Study Area. All existing sewer mains are located within the City right-of-way. The pipe material of existing sewer mains is vitrified clay pipe (VCP). The design criteria are dependent on the demand scenario. Table 3.1 – Sanitary Sewer System Design Criteria presents the sanitary sewer system design criteria based on the supplemental information received from the City.

Table 3.1
Sanitary Sewer System Design Criteria

Parameter	Value
Minimum pipe size	8-inch inside diameter
Pipe Material	PVC SDR-26 or better
Manning's coefficient, n, for recommended PVC pipes	0.01
Minimum Slope	0.5% (0.005 feet/feet) for sewer diameters 8-inches and smaller, 0.4% (0.004 feet/feet) for sewer diameters 10-inches and larger.
Maximum Slope	14.0% (0.14 feet/feet)
PWWF Maximum Pipe Flow Depth Ratio, *d/D*	0.5 for sewer diameters 10-inches and smaller, 0.75 for sewer diameters 12-inches and larger
Minimum Depth of Cover	5 feet below finished grade
Sewer Generation	95% of indoor potable water demand

Notes
ADWF = Average Dry Weather Flow
d/D = ratio of depth of flow (*d*) to the pipe inside diameter (*D*)
fps = feet per second
PWWF = Peak Wet Weather Flow

Four flow conditions were analyzed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

The ADWF is 95% of the indoor potable water demand. To account for existing flows entering the project area from other areas of the city, existing sewer flows collected from flow monitoring sites at Lawrence Road north of Warburton Avenue, Kifer Road west of Lawrence Expressway, and Aster Avenue west of Willow Avenue were incorporated into the sanitary sewer model analysis. Existing sewer flow data collected from the flow monitoring sites were received

from the City on February 6, 2020. According to the City of Sunnyvale's Sanitary Sewer Systems Design Standards, the PDWF peaking factor is dependent upon ADWF. We have assumed a Peak Dry Weather Flow (PDWF) peaking factor that varies between 2.5 and 3.5 which is based on individual parcel demands. PWWF is based on PDWF and a design inflow and infiltration rate based on a 10-year storm event that is 65% of the ADWF. Table 3.2 – Sanitary Sewer System Peaking Factor summarizes the peaking factor to achieve PWWF based on the supplemental information received from the City.

Table 3.2
Sanitary Sewer System Peaking Factor

Parameter	Value
Indoor Potable Water Demand	1,010,021 gpd
Average Dry Weather Flow (95% of Indoor Water Demand)	959,520 gpd
PDWF[1]	PDWF = (varies between 2.5 and 3.5) * ADWF
PWWF	PWWF = ADWF * (PDWF peaking factor + 0.65)

Notes:
PDWF peaking factor is dependent upon ADWF for each parcel.
PDWF = Peak Dry Weather Flow
PWWF = Peak Wet Weather Flow
ADWF = Average Dry Weather Flow

3.2 Sanitary Sewer Collection System

3.2.1 Existing Sanitary Sewer Collection System

The existing sanitary sewer collection system within the vicinity of the LSAP consists of sewer mains that vary in size between 6-inches to 27-inches and a single lift station on Kifer Road located at the crossing over Calabazas Creek. Pipe material of the existing sewer mains is VCP. The lift station consists of a wet well system.

The existing sanitary sewer system within the LSAP boundary consists of a single drainage area. Sanitary sewer flows generally drain by gravity and ultimately drain to the existing 27-inch sanitary sewer main in Lawrence Expressway. The City provided BKF with record drawings, sewer manhole survey data and construction documents for sanitary

sewer mains in Lawrence Expressway, Willow Avenue, and Aster Avenue. A layout of the existing sanitary sewer system is shown on Figure 3.1 – Existing Sanitary Sewer System and existing sanitary sewer manholes are represented on Figure 3.2 – Existing Sanitary Sewer Manholes.

3.3 Recommended Sanitary Sewer System Layout

Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing and Figure 3.4 – Recommended Sanitary Sewer Model Pipe Labels shows the sanitary sewer system collection system with recommended sewer main upgrades required for the LSAP. Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing shows which existing sanitary sewer mains will require upgrades in order to handle the increased sanitary sewer demands from the proposed LSAP.

3.3.1 Kifer Road Lift Station

The analysis of the existing Kifer Lift Station involved reviewing the existing and proposed sanitary sewer ADWF flows into the lift station. The existing sanitary sewer flow during ADWF was determined to be 83 gpm as derived from the building square footages from the M-S/LSAP zone adjacent to Uranium Drive as shown on Figure 3.2 – Existing Sanitary Sewer Manholes. The proposed sanitary sewer ADWF flow into the lift station was determined to be 160 gpm based on the sewer analysis model used throughout this report. BKF provided the existing and proposed sewer flows to the city. The City reviewed the information provided and confirmed the existing Kifer Road Lift Station has enough capacity to serve the LSAP buildout condition.

3.4 Sanitary Sewer System Model Sewer Flows

3.4.1 Land Use Sewer Generation Data

The sanitary sewer flows used are based on the indoor potable water for each land use. Outdoor water demands are not included in sanitary sewer flows because outdoor drains connect to the storm drain system.

3.4.2 Average Dry Weather Flow

The sanitary sewer ADWF is intended to be representative of the average day sanitary sewer generation. The sanitary sewer ADWF is a function of the indoor water use ADD. Table 3.3 – Total Buildout Sanitary Sewer Demand Summary represents the indoor water use ADD and sanitary sewer demands generated for each land use shown in Table 2.4 – Total Buildout Potable Water Demand Summary (ADD) including proposed sites associated with the LSAP and existing parcels to remain. The sanitary sewer ADWF is based on 95% of the indoor potable water ADD. Total sewer demand use for each development is detailed in Appendix F - Sanitary Sewer Demand Calculations. Sewer generation (gpm) that was calculated for each parcel was applied to each sewer line in the street that was adjacent to that particular parcel. This allows an even distribution of sewer generated for a particular parcel to account for existing sanitary sewer lines in the street. Table 3.6 – Office Expansion Study LSAP Sanitary Sewer Demand Summary represents the indoor water use and sanitary sewer demands generated from the office expansion.

Table 3.3
Total Buildout Sanitary Sewer Demand Summary

Land Use[1]	Number	Unit	Indoor Domestic Water Demand (gpd)	Sanitary Sewer Demand (gpd)
Residential	5,935	sf	718,135	682,228
Office/R&D	1,212,374	sf	157,609	149,728
Industrial	614,598	sf	129,065	122,612
Restaurant[2]	156	seat	4,680	4,446
Storage Facility	159,637	sf	532	506
		Total	1,010,021	959,520

Notes:

1. Existing restaurant located at 1210 Kifer Road is assumed to have 156 seats. This is based on the assumption that 50% of restaurant space (7,800 sf total) is for patrons and one 10'x10' table has seating for 4 people. The calculation is as follows:

$$(7{,}800\ sf \times 0.5) \times \left(\frac{4\ seats}{100\ sf}\right) = 156\ seats$$

2. Restaurant is defined as employee amenity space.
3. The square footage numbers provided in this table represent project buildout numbers including nonresidential buildings expected to remain.

3.4.3 Peak Dry Weather Flow (PDWF)

The sanitary sewer PDWF is the highest sanitary sewer generation during the day due to diurnal peaks associated with higher water usage in the morning and early evening hours. PDWF is determined by applying a peaking factor to ADWF. City of Sunnyvale has varying peaking factors for PDWF which is dependent upon ADWF for each parcel. Peaking factors for the LSAP vary between 2.5 and 3.5.

3.3.3 Peak Wet Weather Flow (PWWF)

The sanitary sewer PWWF incorporates infiltration and inflow rate at 65% of the ADWF. This rate is added to the PDWF peaking factor.

Inflow is surface water that enters the wastewater system from yards, roof drains, downspouts, storm drain cross connections, or through manhole covers due to overland flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow

flow runoff. Similar to infiltration, inflow is a result of storm events, and peak inflow typically occurs during heavy storm events or prolonged periods of precipitation.

Infiltration is groundwater that enters sewer facilities such as pipelines, laterals, and manholes through holes, breaks, joint/connection failures, and other openings. Infiltration is directly correlated to the total amount of piping and appurtenances in the ground. Infiltration quantities vary due to seasonal variation in the groundwater levels influenced by storm events, surface and soil conditions, condition of sanitary sewer systems, and type of pipe joints. The highest infiltration flows are typically observed following significant storm events and during the winter or peak precipitation months, when groundwater levels are high.

3.5 Sanitary Sewer Flow Distribution

Each parcel's total sanitary sewer generation was determined by reviewing the planned parcel land use and applying applicable land use sanitary sewer generation. The parcel land use summary is included in Appendix F – Sanitary Sewer System Demand Calculations for reference. Sanitary sewer flows from the proposed LSAP Office Expansion (i.e. ISI project) was included in the model results due to the LSAP Office Expansion located within the LSAP Housing Expansion Buildout Infrastructure on Kifer Road. Refer to the Lawrence Station Area Plan Office Expansion Buildout Infrastructure Impact Study for a detailed analysis with the expanded office use.

Each parcel's total sanitary sewer flow was divided equally amongst the sanitary sewer manholes bordering the parcel as shown in Figures 3.2 – Existing Sanitary Sewer Manholes and 3.4 – Recommended Sanitary Sewer Model Pipe Labels. The parcel flow entering a manhole represents a sanitary sewer lateral point of connection.

3.6 Hydraulic Grade Line Considerations

The analysis of the sanitary sewer system is assumed to be a free outfall condition.

3.7 Sanitary Sewer Boundary Conditions

In addition to the flow monitoring survey data provided by the City, the recommended sanitary sewer system is modeled based on boundary conditions taken from Technical Memorandum 7 attached to the City of Sunnyvale's 2015 Wastewater Collection System Master Plan. Since the LSAP Project is redeveloping existing lots, the proposed sewer model is analyzing existing City sewer mains and identifying the sewer mains that will need to be upgraded in order to abide by supplemental information provided by the City.

3.8 Model Scenario Results and Analysis

The LSAP sanitary sewer model was created using a Bentley StormCAD V8i SELECT series 5.

The following sanitary sewer model flow conditions were developed:

1. Average Dry Weather Flow (ADWF) in Existing City Sewer System
2. ADWF in Recommended City Sewer System
3. Peak Wet Weather Flow (PWWF) in Existing City Sewer System
4. PWWF in Recommended City Sewer System

Sanitary sewer model inside diameters were based on JM Eagle PVC Pipe Size for SDR 26 (160 psi). Installation of the sewer system should be based on the modeling of the product.

3.8.1 Pipe Diameter

The recommended sanitary sewer pipe sizes are shown on Figure 3.3 – Recommended Sanitary Sewer Pipe Sizing. The recommended sanitary sewer system consists of 12-inch to 30-inch diameter pipes. Exhibits show nominal pipe diameters. The sewer systems were modelled with the inside pipe diameters. Pipe upgrades for portions of the sanitary sewer system were based on the d/D exceeding the allowable depth of flow of 0.50 for pipe sizes 10-inches and smaller, and 0.75 for pipe sizes greater than 12-inches per the supplemental information the City provided.

3.8.2 Flow Velocity

The flow velocities through the pipes were calculated using the Manning's equation. The Manning's equation calculates the flow velocities using the pipe's roughness coefficient, the hydraulic radius, and the slope of the pipe.

While most of the existing sewer mains are able to provide 2 fps during PWWF conditions, this was not achievable for all existing sewer mains. For sewer mains that flowed under 2 fps during PWWF conditions, these sewer mains are flowing at less than half pipe capacity. Therefore, these existing sewer mains will not be upgraded as it has sufficient capacity for future sewer demands and will achieve minimum 2 fps flow velocity requirements when flowing half-full. The existing sewer mains are upsized if found to be flowing greater than the d/D at PWWF requirements (0.5 or 0.75).

3.8.2.1 Average Dry Weather Flow (ADWF)

Figure 3.5 – Average Dry Weather Flow Pipe Velocity illustrates the ADWF pipe velocities for the sanitary sewer system. The sanitary sewer system ADWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The results of the analysis show LSAP ADWF velocities ranging from approximately 0.61 fps to 7.36 fps in the City's existing sewer system. ADWF velocities in the recommended City sewer system range from approximately 0.84 fps to 7.28 fps.

3.8.2.2 Peak Wet Weather Flow (PWWF)

Figure 3.6 – Peak Wet Weather Flow Pipe Velocity illustrates the PWWF pipe velocities for the sanitary sewer system. The sanitary sewer system PWWF pipe velocity results are detailed in Appendix D – LSAP Sewer Model Reports. The results shown in this appendix account for flows from the overall LSAP area including the office and housing expansion areas. The results of the analysis

show LSAP PWWF velocities ranging from approximately 0.25 fps to 11.04 fps in the City's existing sewer system. PWWF velocities in the recommended City sewer system range from approximately 1.27 fps to 10.94 fps.

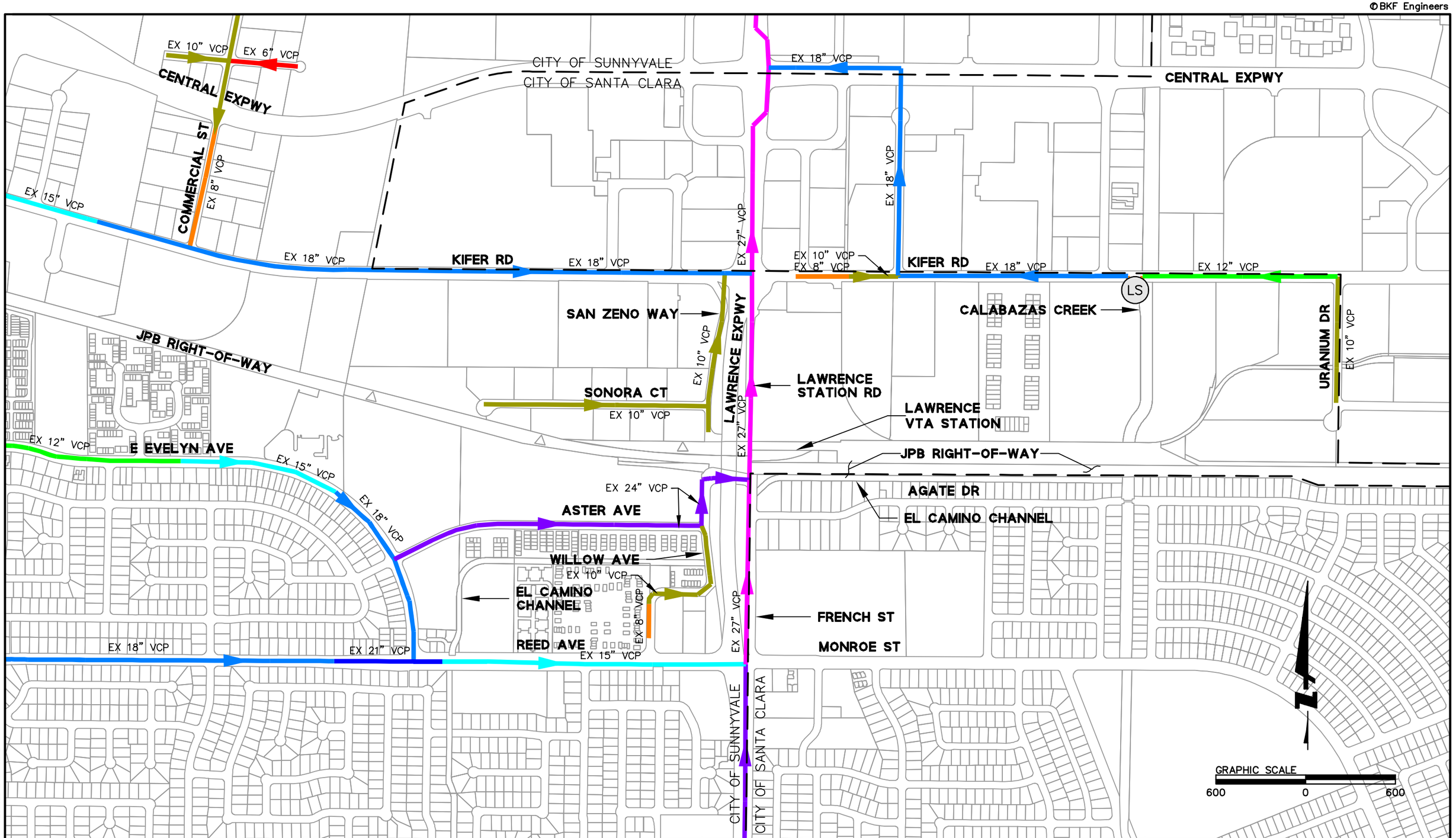
3.9 Sanitary Sewer System Conclusion

The existing Sanitary Sewer system had three pipes that did not meet design criteria based on the supplemental information provided by the City for maximum pipe flow depth (*d/D*). These pipes were the following:

- Existing 10-inch VCP sewer main located in San Zeno Way connecting into Kifer Road between manholes 305-201 and 336-201 has an existing pipe flow depth of 0.53 during PWWF conditions as seen in Appendix D – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 10-inches and smaller is 0.5. BKF recommends upsizing to 12-inch PVC sewer main to provide sufficient capacity.

- Existing 10-inch VCP sewer main located at the intersection of Willow Avenue and Aster Avenue between manholes 296-208 and 296-209 has an existing pipe flow depth of 1.06 during PWWF conditions as seen in Appendix D – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 10-inches and smaller is 0.5. BKF recommends upsizing to a 18-inch PVC sewer main to provide sufficient capacity.
- Existing 27-inch VCP sewer main is in Santa Clara, but the City of Sunnyvale has jurisdiction over the pipe segment. It is located in Lawrence Expressway north of Kifer Road between manholes 336-202 and 336-207. It has an existing pipe flow depth of 0.80 during PWWF conditions as seen in Appendix A – LSAP Sewer Model Reports. Per supplemental information provided by the City, maximum depth for pipes 12-inches and larger is 0.75. BKF recommends upsizing the existing 27-inch VCP to a 30-inch PVC sewer main to provide sufficient capacity.

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LEGEND

- CITY BOUNDARY
- EX 6" SEWER
- EX 8" SEWER
- EX 10" SEWER
- EX 12" SEWER
- EX 15" SEWER
- EX 18" SEWER
- EX 21" SEWER
- EX 24" SEWER
- EX 27" SEWER
- (LS) KIFER ROAD LIFT STATION

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	EYS
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.1 – EXISTING SANITARY SEWER SYSTEM

DRAWING NAME: \\bkf-fs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.1 – LSAP Existing Sanitary Sewer System – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

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CENTRAL EXPWY

CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

COMMERCIAL ST

333–206

334–201

334–202

KIFER RD

335–201

335–202

336–201

336–202

336–203

336–204

336–207

337–201

337–202

337–203

337–204

337–205

337–206

337–208

KIFER RD

338–201

338–202

338–203

338–207

338–209

339–201

339–202

339–203

LS

CALABAZAS CREEK

URANIUM DR

302–203

302–202

302–201

SAN ZENO WAY

305–201

305–202

305–203

305–204

305–205

305–206

305–207

305–208

305–209

LAWRENCE EXPWY

LAWRENCE STATION RD

LAWRENCE VTA STATION

JPB RIGHT-OF-WAY

JPB RIGHT-OF-WAY

MXD-II

MXD-I

MXD-I

MXD-II

M-S/LSAP

MXD-I

MXD-III

306–201

306–202

306–203

306–204

SONORA CT

E EVELYN AVE

296–201

296–202

296–203

296–204

296–205

296–206

296–207

296–208

296–209

296–210

296–211

296–212

296–213

AGATE DR

EL CAMINO CHANNEL

ASTER AVE

1 2 3 4 5 6 7 8 9

WILLOW AVE

294–206

294–207

295–201

295–202

R-5

O-R

266–204

266–205

266–210

EL CAMINO CHANNEL

REED AVE

265–204

265–206

FRENCH ST

MONROE ST

CITY OF SUNNYVALE

CITY OF SANTA CLARA

NODE IDENTIFICATION	
1	295–203
2	295–207
3	295–208
4	295–209
5	295–204
6	295–210
7	295–211
8	295–212
9	296–211

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- LS KIFER ROAD LIFT STATION
- EX SEWER
- EX MANHOLE

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.2 – EXISTING SANITARY SEWER MANHOLES

DRAWING NAME: \\bkf-rs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.2 – LSAP Proposed Sanitary Sewer Nodes – Housing.dwg
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CITY OF SANTA CLARA

CENTRAL EXPWY
EX 10" VCP
EX 6" VCP
COMMERCIAL ST
EX 8" VCP
EX 15" VCP
EX 18" VCP
EX 18" VCP
EX 18" VCP
CENTRAL EXPWY

REPLACE EX 27" VCP
WITH PR 30" PVC
EX 27" VCP
EX 18" VCP
EX 10" VCP
EX 8" VCP

KIFER RD
EX 18" VCP
KIFER RD
EX 18" VCP
EX 12" VCP

REPLACE EX 10" VCP
WITH PR 12" PVC
SAN ZENO WAY
EX 10" VCP
LAWRENCE EXPWY
EX 27" VCP

LS
CALABAZAS CREEK
URANIUM DR
EX 10" VCP

JPB RIGHT-OF-WAY
MXD-II
MXD-I
MXD-I
MXD-II
M-S/LSAP
LAWRENCE STATION RD
LAWRENCE VTA STATION
JPB RIGHT-OF-WAY

SONORA CT
MXD-I
EX 10" VCP

E EVELYN AVE
EX 12" VCP
EX 15" VCP
EX 18" VCP
MXD-III
EX 24" VCP
ASTER AVE
AGATE DR
EL CAMINO CHANNEL

REPLACE EX 10" VCP
WITH PR 18" PVC

WILLOW AVE
EX 10" VCP
R-5
EL CAMINO CHANNEL
EX 8" VCP
O-R
FRENCH ST
MONROE ST

EX 18" VCP
EX 21" VCP
REED AVE
EX 15" VCP
EX 27" VCP

CITY OF SUNNYVALE
CITY OF SANTA CLARA

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- (LS) KIFER ROAD LIFT STATION
- EX SEWER
- PR 12" SEWER
- PR 18" SEWER
- PR 30" SEWER

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
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650/482-6300
650/482-6399 (FAX)

LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.3 – RECOMMENDED SANITARY SEWER PIPE SIZING

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.3 - LSAP Proposed Sanitary Sewer Pipe Sizing - Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

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CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

COMMERCIAL ST

KIFER RD

PR-KR-P1
PR-KR-P2
PR-KR-P3
PR-KR-P4
PR-KR-P5
PR-KR-P6
PR-KR-P7
PR-KR-P8
PR-KR-P9
PR-KR-P10
PR-KR-P11
PR-KR-P12
PR-KR-P13
PR-KR-P14
PR-KR-P15
PR-KR-P16
PR-KR-P17
PR-KR-P18
PR-KR-P19

PR-LE-P7
PR-LE-P6
PR-LE-P5
PR-LE-P4
PR-LE-P3
PR-LE-P2
PR-LE-P1

PR-CR-P2
PR-CR-P1

PR-SZW-P5
PR-SZW-P4
PR-SZW-P3
PR-SZW-P2
PR-SZW-P1

PR-SC-P1
PR-SC-P2
PR-SC-P3
PR-SC-P4
PR-SC-P5

PR-AA-P1
PR-AA-P3
PR-AA-P4
PR-AA-P14

PR-WA-P1
PR-WA-P2
PR-WA-P3
PR-WA-P4
PR-WA-P5
PR-WA-P6
PR-WA-P7
PR-WA-P8
PR-WA-P9

PR-UD-P1
PR-UD-P2
PR-UD-P3
PR-UD-P4

SAN ZENO WAY
SONORA CT
LAWRENCE EXPWY
LAWRENCE STATION RD
LAWRENCE VTA STATION
CALABAZAS CREEK
URANIUM DR
JPB RIGHT-OF-WAY
E EVELYN AVE
ASTER AVE
WILLOW AVE
REED AVE
EL CAMINO CHANNEL
AGATE DR
FRENCH ST
MONROE ST
LS

MXD-I
MXD-II
MXD-III
M-S/LSAP
R-5
O-R

1 2 3 4 5 6 7 8 9

PIPE IDENTIFICATION	
1	PR-AA-P5
2	PR-AA-P6
3	PR-AA-P7
4	PR-AA-P8
5	PR-AA-P9
6	PR-AA-P10
7	PR-AA-P11
8	PR-AA-P12
9	PR-AA-P13

NOTES:

1. PIPE LABELS SHOWN ON THIS SHEET REPRESENT THE PIPES USED IN THE SANITARY SEWER MODEL. THESE LABELS CORRESPOND TO THE PROPOSED MODEL RESULTS TABLE SHOWN IN APPENDIX D.
2. REFER TO FIGURE 3.3 FOR RECOMMENDED SANITARY SEWER UPGRADES.

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- (LS) KIFER ROAD LIFT STATION
- SEWER MAIN
- MANHOLE
- PR-KR-P1 ← PIPE NUMBER
- STREET LOCATION PROPOSED

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.4 – RECOMMENDED SANITARY SEWER MODEL PIPE LABELS

DRAWING NAME: \\bkf-rs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.4 - LSAP Proposed Sanitary Sewer Pipes - Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

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CENTRAL EXPWY

COMMERCIAL ST

CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

KIFER RD

KIFER RD

LS

CALABAZAS CREEK

SAN ZENO WAY

MXD-II

MXD-I

JPB RIGHT-OF-WAY

LAWRENCE EXPWY

MXD-I

MXD-II

M-S/LSAP

URANIUM DR

LAWRENCE STATION RD

SONORA CT

LAWRENCE VTA STATION

MXD-I

JPB RIGHT-OF-WAY

E EVELYN AVE

MXD-III

AGATE DR

EL CAMINO CHANNEL

ASTER AVE

WILLOW AVE

R-5

EL CAMINO CHANNEL

O-R

FRENCH ST

REED AVE

MONROE ST

CITY OF SUNNYVALE

CITY OF SANTA CLARA

GRAPHIC SCALE

600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- (LS) KIFER ROAD LIFT STATION
- EX SEWER

SS GRAVITY MAIN VELOCITY

- 0.00 FT/S TO 1.99 FT/S
- 2.00 FT/S TO 9.99 FT/S

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.5 – AVERAGE DRY WEATHER FLOW PIPE VELOCITY

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Water Plan\Sewer\Housing\Figure 3.5 - LSAP Average Dry Weather Flow Pipe Velocity - Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

© BKF Engineers

CENTRAL EXPWY

COMMERCIAL ST

CITY OF SUNNYVALE
CITY OF SANTA CLARA

CENTRAL EXPWY

KIFER RD

KIFER RD

SAN ZENO WAY

MXD-II

MXD-I

JPB RIGHT-OF-WAY

LAWRENCE EXPWY

LS

CALABAZAS CREEK

URANIUM DR

MXD-I

MXD-II

M-S/LSAP

LAWRENCE STATION RD

SONORA CT

MXD-I

LAWRENCE VTA STATION

JPB RIGHT-OF-WAY

E EVELYN AVE

MXD-III

AGATE DR

EL CAMINO CHANNEL

ASTER AVE

WILLOW AVE

R-5

EL CAMINO CHANNEL

O-R

FRENCH ST

MONROE ST

REED AVE

CITY OF SUNNYVALE

CITY OF SANTA CLARA

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- HOUSING EXPANSION STUDY AREA
- OFFICE EXPANSION STUDY AREA
- (LS) KIFER ROAD LIFT STATION
- EX SEWER

SS GRAVITY MAIN VELOCITY

- 0.00 FT/S TO 1.99 FT/S
- 2.00 FT/S TO 9.99 FT/S
- 10.00 FT/S TO 11.99 FT/S

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	NRF
APPROVED:	TRM
JOB NO:	20180080

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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 3.6 – PEAK WET WEATHER FLOW PIPE VELOCITY

DRAWING NAME: \\bkf-rs\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Sewer\Housing\Figure 3.6 – LSAP Peak Wet Weather Flow Pipe Velocity – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

SECTION 4: CONSTRUCTION COSTS

4.1 Sanitary Sewer System Construction Costs

The associated construction costs to complete the recommended pipe upsizing upgrades are based off of the cost estimates prepared by Schaaf & Wheeler for the Downtown Specific Study prepared in September 2019. The anticipated construction cost based on linear footage has been prepared in Table 4.1 – Anticipated Construction Cost. The unit cost provided includes the costs associated with mobilization, demobilization, traffic control, shoring, trenching, manholes, laterals, bypass pumping, offhaul and disposal.

Table 4.1
Anticipated Construction Cost

Pipe Diameter	Recommended Costs ($/LF)[2]
12" PVC pipe	$700
18" PVC pipe	$900
30" PVC pipe[1]	$2000

Note:
1. The 30" PVC pipe recommended unit cost has been adjusted to account increased costs for construction work required on Lawrence Expressway including sewer bypass pumping, expressway traffic control, and pavement thickness.
2. Unit cost values are derived from 2019 Downtown Specific Plan Amendments Utility Impact Study.

Total project construction was estimated by factoring expected additional costs related to construction contingency, design, inspection, miscellaneous costs, and city administration. These additional project costs have been provided in Table 4.2 – Additional Project Costs shown below.

Table 4.2
Additional Project Costs

Project Item	Percentage of Total Cost
Construction Contingency	25%
Design	20%
Inspection	10%
Miscellaneous Costs	10%
City Administration	5%

The sewer analysis model finds that a total of 671 linear feet of 27-inch VCP sewer pipe in Lawrence Expressway must be upsized to a 30-inch PVC sewer pipe, which creates an estimated cost of $1,342,000. With additional costs, the total cost for upsizing sewer pipe in Lawrence Expressway amounts to $2,214,300. The model concludes that a total of 324 linear feet of 10-inch VCP sewer pipe in San Zeno Way must be upsized to a 12-inch PVC sewer pipe, which creates an estimated cost of $226,800. With additional costs, the total cost for upsizing the sewer pipe in San Zeno Way amounts to $374, 220. For Willow Avenue, a total of 69 linear feet of 10-inch VCP sewer pipe must be upsized to 18-inch PVC sewer pipe, which creates an estimated cost of $62,100. With additional costs, the total cost for upsizing the sewer pipe in Willow Avenue amounts to $102,465. The total cost associated with the recommended sewer upgrades for the LSAP Housing Expansion is $2,690,985. A detailed breakdown of the project's cost estimate can be seen in Appendix G – Cost Estimate for City Sanitary Sewer System Upgrades.

SECTION 5: STORM DRAIN SYSTEM

5.1 Existing Storm Drain Layout

The existing storm drain for LSAP is shown on Figure 4.1 – Existing Storm Drain System. Existing storm drain mains are maintained by the City of Sunnyvale. The LSAP area is currently served by existing storm drain mains that vary in size between 12-inches to 60-inches. Within the vicinity of the LSAP, there are four points where the existing storm drain system discharges into a City flood easement (El Camino Channel) listed below.

- Discharge point #1 located near Reed Avenue and East Evelyn Avenue
- Discharge point #2 located at Aster Avenue east of East Evelyn Avenue
- Discharge point #3 located at French Street south of Agate Drive
- Discharge point #4 located at the intersection of French Street and Willow Avenue.

There are also two points where the existing storm drain system discharges into Calabazas Creek at Kifer Road coming from the West and East (Discharge points #5 and #6 respectively). Discharge points are shown in Figure 4.1 – Existing Storm Drain System.

5.2 Storm Drain System Conclusion

While the project does not have pervious/impervious areas of the existing developments, it is assumed that the pervious areas in the existing development are below 20% pervious. The existing LSAP site, using Google Earth aerial images, show significant impervious surfaces throughout the project area consisting primarily of existing buildings and surface parking for each lot. While the project does not have a pervious/impervious area breakdown for the proposed development, the City of Sunnyvale's Municipal Code requires a minimum of 20% landscaping for each development parcel. It is also assumed that stormwater flows from the proposed developments within the LSAP will be designed to infiltrate within their own development site. Therefore, the proposed Housing Expansion Study Area project assumes no increase in stormwater runoff to the existing storm drain system.

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CENTRAL EXPWY
EX 18" RCP
EX 24" RCP
EX 30" RCP
EX 36" RCP
CITY OF SUNNYVALE
CITY OF SANTA CLARA
EX 39" RCP
EX 42" RCP
EX 54" RCP
EX 60" RCP
CENTRAL EXPWY
COMMERCIAL ST
EX 24" RCP
EX 27" RCP
KIFER RD
EX 30" RCP
EX 33" RCP
EX 36" RCP
DISCHARGE POINT #6
DISCHARGE POINT #5
EX 27" RCP
EX 18" RCP
KIFER RD EX 30" RCP
EX 33" RCP
EX 27" RCP
EX 18" RCP
SAN ZENO WAY
CALABAZAS CREEK
URANIUM DR
EX 24" RCP
JPB RIGHT-OF-WAY
EX 27" RCP
EX 36" RCP
LAWRENCE EXPWY
LAWRENCE STATION RD
SONORA CT
LAWRENCE VTA STATION
EX 48" RCP
EX 33" RCP
EX 30" RCP
E EVELYN AVE
EX 39" RCP
JPB RIGHT-OF-WAY
EX 60" RCP
EX 48" RCP
EX 24" RCP
EX 18" RCP
ASTER AVE
AGATE DR
EL CAMINO CHANNEL
DISCHARGE POINT #4
DISCHARGE POINT #3
WILLOW AVE
EX 42" CMP
DISCHARGE POINT #2
EL CAMINO CHANNEL
EX 30" RCP
EX 39" RCP
FRENCH ST
MONROE ST
EX 42" RCP
EX 48" RCP
EX 54" CMP
REED AVE
EX 12" RCP
EX 24" RCP
DISCHARGE POINT #1
CITY OF SUNNYVALE
CITY OF SANTA CLARA

GRAPHIC SCALE
600 0 600

LEGEND

- CITY BOUNDARY
- EX 12" STORM
- EX 18" STORM
- EX 21" STORM
- EX 24" STORM
- EX 27" STORM
- EX 30" STORM
- EX 33" STORM
- EX 36" STORM
- EX 39" STORM
- EX 42" STORM
- EX 48" STORM
- EX 54" STORM
- EX 60" STORM
- CHANNEL/CREEK

DATE:	06/22/2020
SCALE:	1"=600'
DESIGN:	BPB
DRAWN BY:	EYS
APPROVED:	TRM
JOB NO:	20180080

BKF ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE SUITE 200
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LSAP HOUSING EXPANSION BUILDOUT INFRASTRUCTURE REPORT

FIGURE 4.1 – EXISTING STORM DRAIN SYSTEM

DRAWING NAME: \\bkf-rc\VOL4\2018\180080_LSAP_Housing\ENG\EXHIBITS\Master Plan\Storm\Residential\Figure 4.1 – Existing Storm Syatem – Housing.dwg
PLOT DATE: 06-19-20
PLOTTED BY: Inou

APPENDIX A

Block Book Pages for Lawrence Station Area Plan

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

349	348	347
332	333	334
309	308	307

333

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

348	347	346
333	334	335
308	307	306

334

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

347	346	345
334	335	336
307	306	305

335

0 50 Feet

Nov 11, 2019

NATIONAL SEMICONDUCTOR

CITY OF SANTA CLARA

SUNNYVALE CITY LIMITS

TAHOE WAY

SEMICONDUCTOR DRIVE

KIFER ROAD

KIFER ROAD

204 R=55.56

48.91

10" VCP

10"

31'

31'

51.46

301' 8" VCP

301'

203 R=58.3

10' P.U.E.

10'

10'

37' 37'

930' 18" VCP 0.3%

51.29 201 R=64.5

900' 18" VCP 0.3%

48.59

202 R=61.2

18" VCP 0.3%

8" VCP

6" VCP

18'

43'

47'

43'

47'

43'

24

23

25

26

27

30

29

28

1050

1090

1130

14

1

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

"	Flushing Inlet	S	Clean Out
2	Active Manhole	⁞	Active Plug
2	Abandoned Manhole	⁞	Abandoned Plug
2	Active Drop Manhole	)	Meter
2	Diversion Structure	Ů	Pump Station
<	Grade Break	T	Lift Station
1	Main Line Clean Out	S	Riser
%	Network Structure	"	Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

Ê

346	345	344
335	336	337
306	305	304

336

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
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- Others Main
- Active Sunnyvale Lateral
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- Active Private Lateral
- Active Force Main
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- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid
- City Boundary

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

345	344	343
336	337	338
305	304	303

337

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
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Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

- Easement
- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	BORREGAS AVENUE	- Street Name
6"	- Diameter	129	- Lot Number
VCP	- Material	1405	- Address Number
0.2%	- Slope	ONSITE PRIVATE SYSTEM	- Miscellaneous Annotation
US=19.48	- Upstream Elevation		
DS=18.48	- Downstream Elevation		
209	- Manhole Number		
R=23.58	- Rim Elevation		
6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		

344	343	
337	338	339
304	303	302

338

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

Legend

Lines

- Active Sunnyvale Main
- Abandoned Sunnyvale Main
- Active Private Main
- Others Main
- Active Sunnyvale Lateral
- Abandoned Sunnyvale Lateral
- Active Private Lateral
- Active Force Main
- Abandoned Force Main
- Active Santa Clara Main
- Active Cupertino Main

Points

- Flushing Inlet
- Active Manhole
- Abandoned Manhole
- Active Drop Manhole
- Diversion Structure
- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

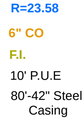
- Easement
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid
- City Boundary

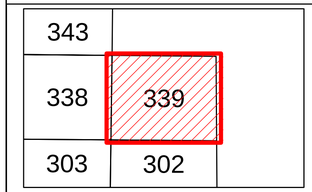
Basemap

- Constructed Centerline
- Street Centerline
- Parcel

Annotation

365'	- Pipe Length	**BORREGAS AVENUE**	- Street Name
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10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		





339

0 50 Feet

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CITY OF SANTA CLARA

324' 12" VCP 0.27%

326' 12" VCP 0.27%

202
R=47.6

10" VCP
DS=36.12

10" VCP

10" VCP 0.32%

May be disconnected

35.05 35.15

201
R=49.2

258

112

36.02

203

5'

5'

5'

20'

20'

23'

43'

66'

KIFER ROAD SUNNYVALE CITY LIMITS

33'

37

30'

URANIUM AVENUE

30' P.U.E.

CITY LIMITS

10" VCP 0.32%

237

30' U.E.

CITY OF SANTA CLARA

1450-52

1484

33

SUNNYVALE - SEWER
Appendix A

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- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

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- Steel Casing
- Detail Polygon
- Blockgrid
- City Boundary

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- Street Centerline
- Parcel

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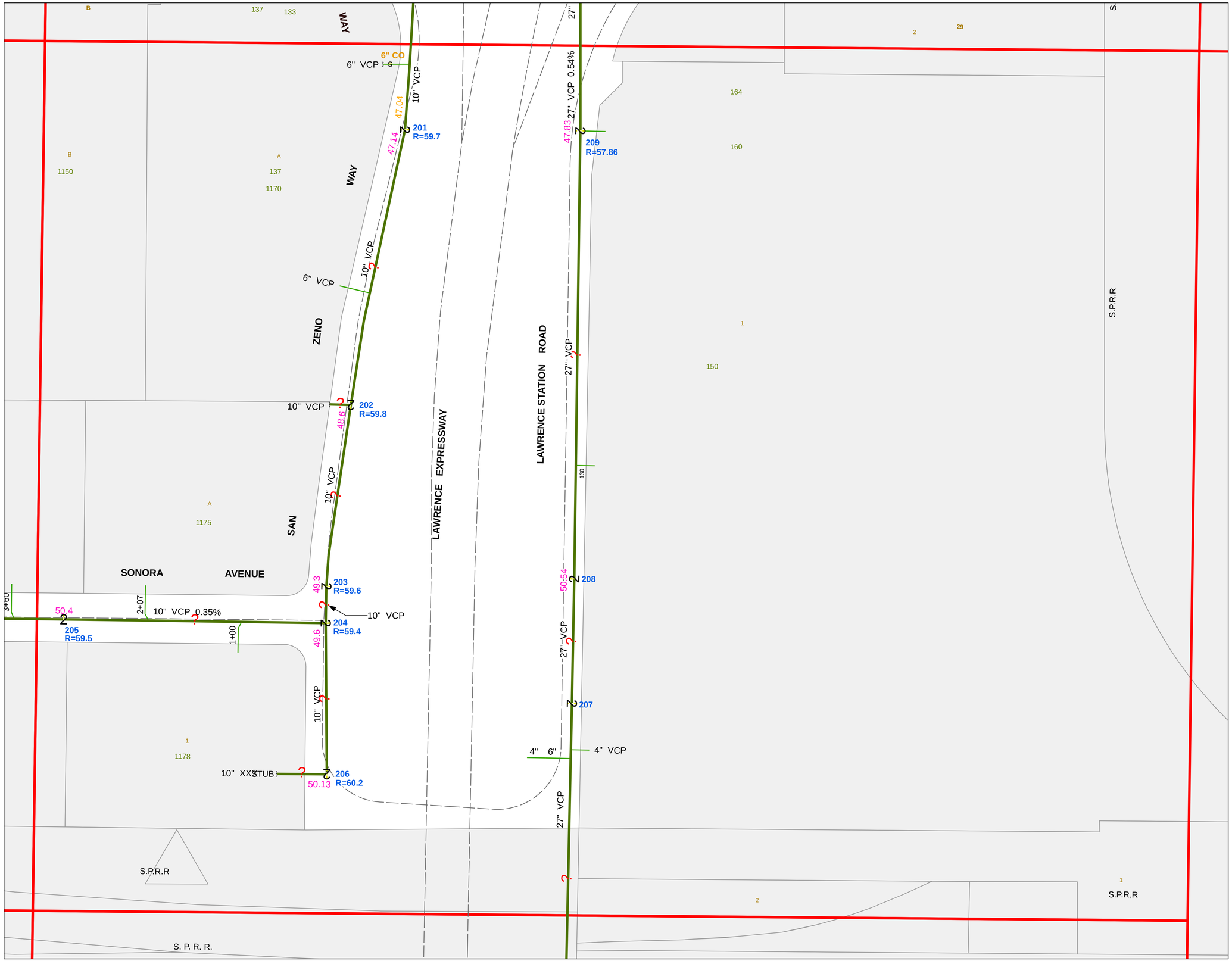
334	335	336
307	306	305
294	295	296

306

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A



Legend

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Points

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2	Active Manhole	⁞	Active Plug
2	Abandoned Manhole	⁞	Abandoned Plug
2	Active Drop Manhole	)	Meter
2	Diversion Structure	Ú	Pump Station
<	Grade Break	T	Lift Station
1	Main Line Clean Out	S	Riser
%	Network Structure	"	Drain Inlet

Polygons

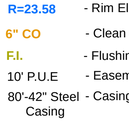
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- City Boundary
- Concrete Casing
- Steel Casing
- Detail Polygon
- Blockgrid

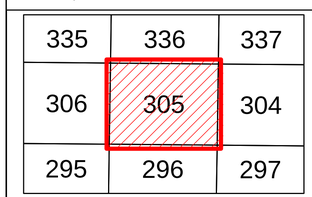
Basemap

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6" CO	- Clean Out Annotation		
F.I.	- Flushing Inlet Annotation		
10' P.U.E	- Easement Annotation		
80'-42" Steel Casing	- Casing Annotation		





305

0 50 Feet

Nov 11, 2019

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Appendix A

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Points

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- Abandoned Manhole
- Active Drop Manhole
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- Grade Break
- Main Line Clean Out
- Network Structure
- Clean Out
- Active Plug
- Abandoned Plug
- Meter
- Pump Station
- Lift Station
- Riser
- Drain Inlet

Polygons

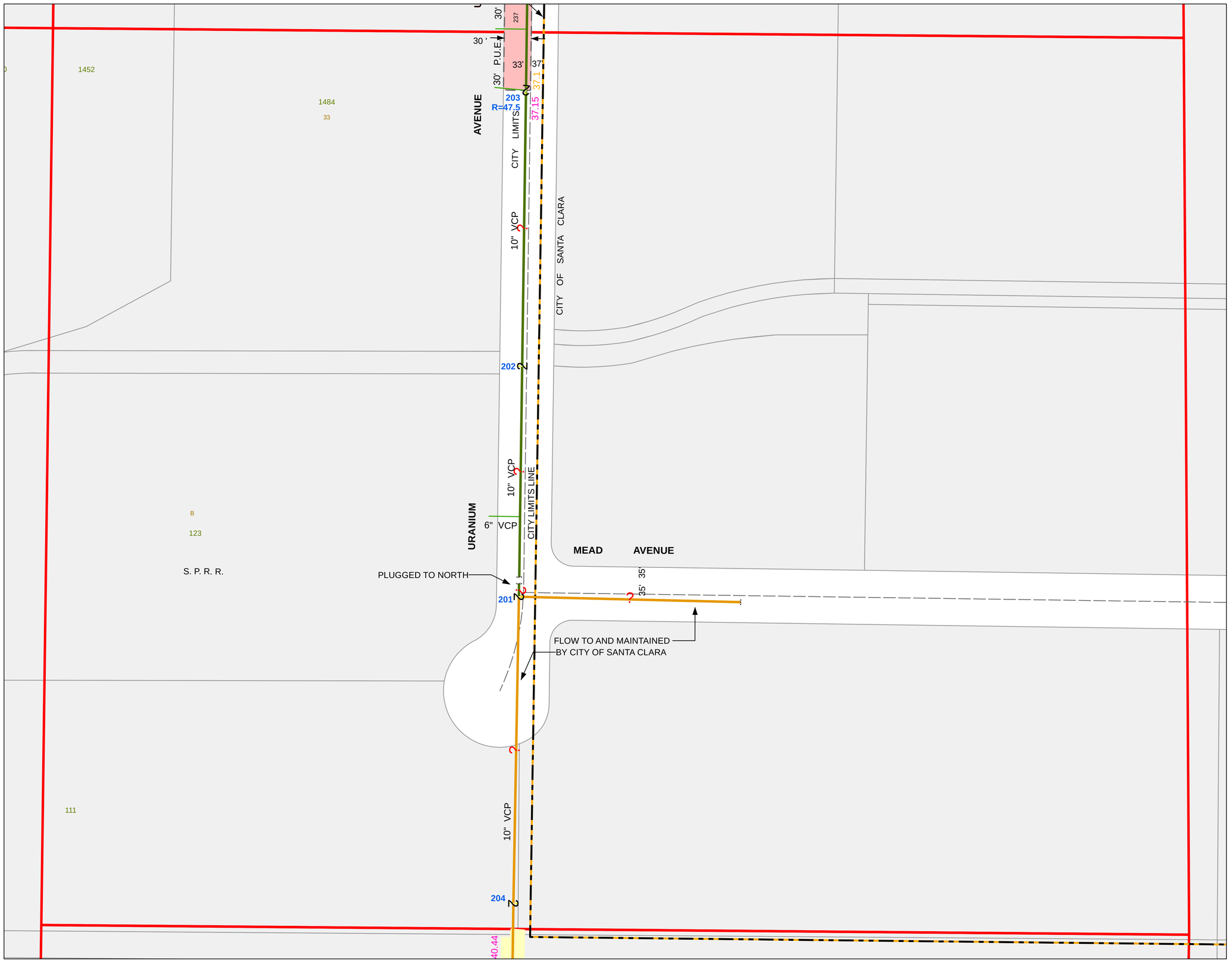
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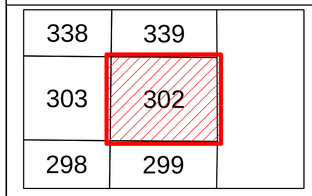
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0 50 Feet

Nov 11, 2019

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308	307	306
293	294	295
268	267	266

294

0 50 Feet

Nov 11, 2019

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307	306	305
294	295	296
267	266	265

295

0 50 Feet

Nov 11, 2019

S. P. R. R.

S. P. R. R.

PM 1033

1175

A= 24" VCP 0.35% US=52.62
B= 24" VCP 0.35% DS=52.03
C= 131' 24" VCP 0.35% US=52.03 DS=51.57
D= 20' 24" VCP 0.35% US=51.57 DS=51.5
E= 111' 24" VCP 0.35% US=51.5 DS=51.15
F= 131' 24" VCP 0.35% US=51.15 DS=50.69
G= 59' 24" VCP 0.35% US=50.69 DS=50.48

ASTER AVENUE

24" VCP 0.3% 57.72 — 201 R=69.2

24" VCP 0.3% 56.82 — 202 R=67.3

24" VCP 0.3% 55.92 — 203 R=62.64 — 207

208 R=61.5 — 209 R=61.3 — 204 R=61.5 — 210 R=61.3 — 211 R=60.4 — 212 R=60.33

6" PVC — 6" CO — 33' — 18' — 28' — 27' — 13' — 24'

TERRACE SWEETWOOD — TERRACE OAK — TERRACE TREE — TEERACE TEAK

PM 1088

P.U.E. EXCLUSION — 1122 — P.U.E. EXCLUSION — 1134

TRACT 9758

1156

R/S 591

S. C. C. FLOOD CONTROL

TR. 5987

1041 1043 1045

R/S : 591

6" CAS — 205 — 6" CAS

8" CAS

1038 1047 1042 1049

1095 1093

1119 1121 1123

SUNNYVALE MEADOWS

TR. 5049

1115 1117 1125 1127 1129 1131 1133 1135

1168 1172 1176

1159

F.I.

SUNNYVALE - SEWER
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306	305	304
295	296	297
266	265	

296

0 50 Feet

Nov 11, 2019

SUNNYVALE - SEWER
Appendix A

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294	295	296
267	266	265
254	255	256

266

0 50 Feet

Nov 11, 2019

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295	296	297
266	265	
255	256	

265

0 50 Feet

Nov 11, 2019

APPENDIX B

LSAP Parcels with Development Assumptions

Appendix B
Lawrence Station Area Plan
LSAP Parcels with Devleopment Assumptions
Received from George Schroeder of the City of Sunnyvale on March 16, 2019

Residential development cap under the adopted LSAP (net new dwelling units)	**2,323**		
Net new housing units approved by the City since LSAP adoption in 2016	**1261**	**Addition of net new units proposed within the adopted LSAP**	**Total net new housing unit cap proposed with implementation of LSAP update**
Balance of net new housing units that currently remain for buildout within the adopted LSAP	**1,062**	**3,612**	**5,935**

Existing — Parcels highlighted in green will be analyzed as the existing condition.
Proposed — Parcels highlighted in blue will be analyzed as the proposed condition.

Parcels not expected to redevelop to residential or change (Caltrain properties also excluded)

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District
20549008	960	Kifer	Rd	214,751	4.93	MXD-2
20550001	1016-1020	Kifer	Rd	344,734	7.91	MXD-2
20550036	1050-1090	Kifer	Rd	426,364	9.79	MXD-1
20550029	1127	Sonora	Ct	175,982	4.04	MXD-2
20550004	1120-1130	Kifer	Rd	348,698	8.01	MXD-1
21627018	1202	Kifer	Rd	21,621	0.50	MXD-1
21627053	1210	Kifer	Rd	69,696	1.60	MXD-1
21627052	150	Lawrence Station	Rd	561,052	12.88	MXD-1
21627059	106	Lawrence Station	Rd	321,037	7.37	MXD-2
Various	1286-1298	Kifer	Rd	501,498	11.51	MXD-2
Various	1171-1193	Buttercup	Tr	32,800	0.75	R5
21301034	1155	Aster	Av	708,198	16.26	MXD-3
21301032	"	"		7,841	0.18	MXD-3
21301033	"	"		21,344	0.49	MXD-3

East of Calbazas Creek - 50% of these sites developed at 100 du/ac

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Existing or Approved Land Use	Existing SF (Nonres)	Estimated Units for Proposed LSAP
21627023	1484	Kifer	Rd	207,781	4.77	MS/LSAP	Industrial	128,628	382
21627068	1382-1388	Kifer	Rd	155,191	3.56	MS/LSAP	Office	88,222	338
21627069	1400	Kifer	Rd	276,231	6.34	MS/LSAP	Industrial	76,905	634
21627033				30,492	0.70	MS/LSAP	N/A, Rail Spur	N/A	0
21627035				43,124	0.99	MS/LSAP	N/A. Rail Spur	N/A	0
21627044	1450	Kifer	Rd	234,353	5.38	MS/LSAP	Office	78,000	0
21627045	123	Uranium	Dr	250,470	5.75	MS/LSAP	Industrial	105,000	0
21627047	111	Uranium	Dr	252,212	5.79	MS/LSAP	Industrial	126,788	328
21627048				16,117	0.37	MS/LSAP	N/A, Rail Spur	N/A	0
					Total of all sites				
					50% of total				

Lawrence/Reed/Willow - developed at 54 du/ac

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Existing or Approved Land Use	Existing SF (Nonres)	Estimated Units for Proposed LSAP	Estimated Retail under Proposed LSAP (SF)
21301001	1170	Willow	Av	10,550	0.24	OR	Commercial	19,145	13	1000
21301002	1165	Reed	Av	41,700	0.96	OR	Commercial	16,750	52	2000
21301003	1155	Reed	Av	67,082	1.54	OR	Commercial	11,448	83	2000
21301004	1164	Willow	Av	14,849	0.34	OR	Commercial	6,500	18	2000
					Total of all sites				**166**	**7,000**

Kifer/Sonora - developed at 100 du/ac

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Adopted LSAP DEC 2016 Existing Max @ 68 du/ac	Delta	Existing or Approved Land Use	Existing SF (Nonres)	Estimated Units for Proposed LSAP	Estimated Retail under Proposed LSAP (SF)
20550013	1178	Sonora	Ct	54,886	1.26	86	40	Industrial	19,440	126	1000
20550014	1170	Sonora	Ct	47,480	1.09	74	35	Industrial	14,850	109	N/A
20550015	1162	Sonora	Ct	51,401	1.18	80	38	Industrial	19,463	0	N/A
20550016	1154	Sonora	Ct	82,328	1.89	129	60	Industrial	41,062	168	N/A
20550017	1146	Sonora	Ct	32,670	0.75	51	24	Industrial	11,055	0	N/A
20550019	1175	Sonora	Ct	57,064	1.31	89	42	Industrial	19,098	111	N/A
20550022	1151	Sonora	Ct	55,757	1.28	87	41	Industrial	19,512	0	N/A
20550024	1171	Sonora	Ct	56,628	1.30	88	42	Industrial	19,512	130	N/A
20550025	1159	Sonora	Ct	49,658	1.14	78	36	Industrial	16,830	0	N/A
20550026	1145	Sonora	Ct	54,450	1.25	85	40	Industrial	19,990	0	N/A
20550028	1135	Sonora	Ct	64,033	1.47	100	47	Industrial	24,000	125	N/A
20550034	1150	Kifer	Rd	114,127	2.62	178	84	Office	46,849	262	2500
20550035	1170	Kifer	Rd	139,392	3.20	218	102	Office	57,649	320	2500
21627037	1360	Kifer	Rd	635,105	14.58	991	467	Industrial	286,800	1458	N/A
21627042	1256	Kifer	Rd	182,516	4.19	285	134	Industrial	61,758	0	N/A
21627043	1272	Kifer	Rd	426,452	9.79	666	313	Industrial	147,842	0	N/A
21627067	1242	Kifer	Rd	297,384	6.83	464	218	Office	152,758	0	N/A
					Total of all sites	**3,749**	**1,764**			**2,810**	**6,000**

R-5 Site - no change, 16 units allowed

APN	Addr #	Street	St. Type	Lot Sq. Ft.	Lot Acres	Zoning District	Estimated Units for Proposed LSAP
21301023	1159	Willow	Av	20708	0.48	R5	16

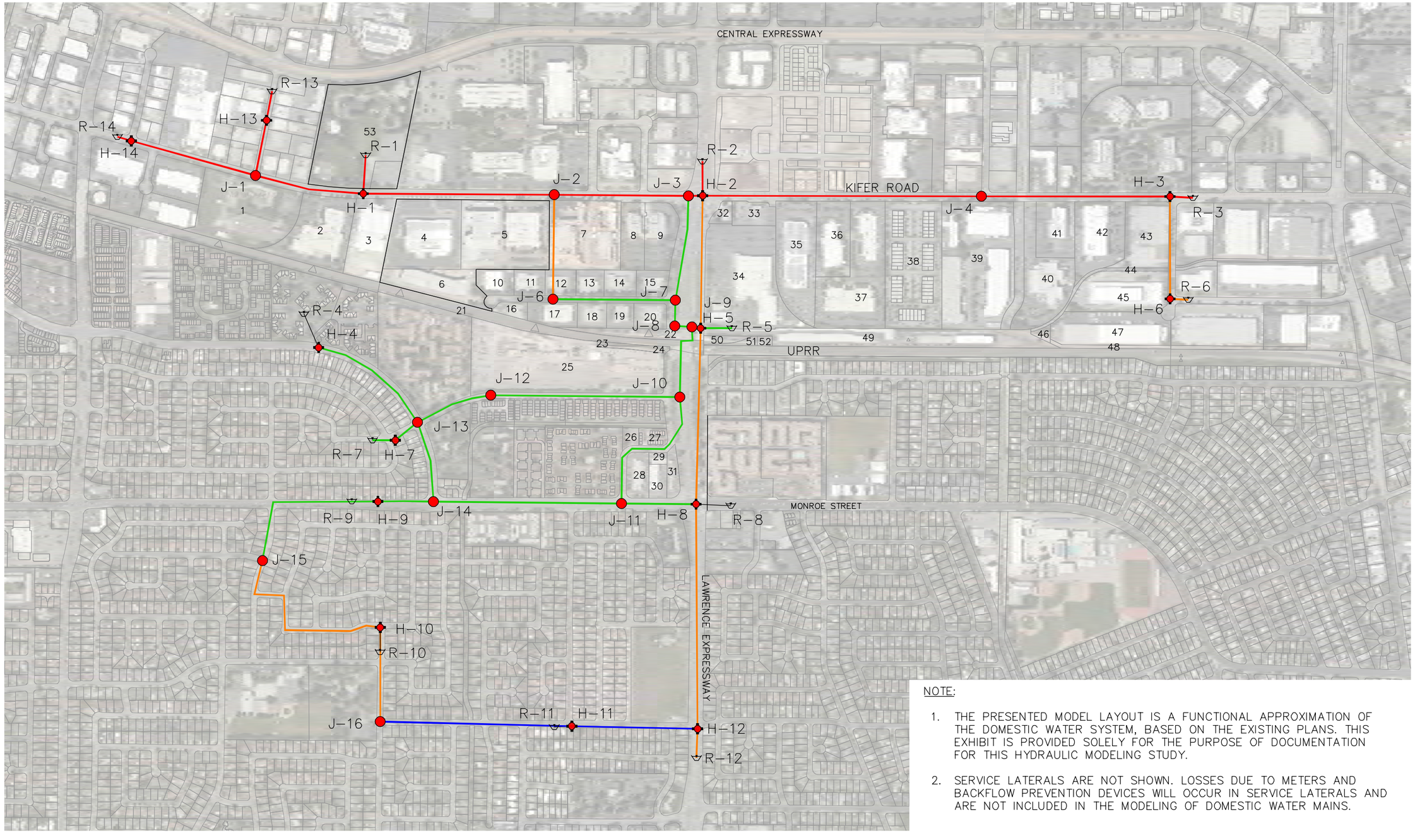
Railroad Properties

APN	Lot Sq. Ft.	Lot Acres
21627058	10,019	0.23
21627056	23,522	0.54
21627057	13,939	0.32
20550038	N/A	N/A
20550039	N/A	N/A
20550040	N/A	N/A
20550043	532,739	12.23
20550032	111,514	2.56

Note:
1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.

APPENDIX C

LSAP Potable Water Model Reports



NOTE:

1. THE PRESENTED MODEL LAYOUT IS A FUNCTIONAL APPROXIMATION OF THE DOMESTIC WATER SYSTEM, BASED ON THE EXISTING PLANS. THIS EXHIBIT IS PROVIDED SOLELY FOR THE PURPOSE OF DOCUMENTATION FOR THIS HYDRAULIC MODELING STUDY.
2. SERVICE LATERALS ARE NOT SHOWN. LOSSES DUE TO METERS AND BACKFLOW PREVENTION DEVICES WILL OCCUR IN SERVICE LATERALS AND ARE NOT INCLUDED IN THE MODELING OF DOMESTIC WATER MAINS.

EXHIBIT 1. WaterCAD Model Layout

Lawrence Station Area Plan

Housing Study Project

SCALE 1" = 800'

BKF No. 20180080-10

GRAPHIC SCALE

800 0 800 1600

LEGEND

- MODEL NODE
- MODEL RESERVOIR
- J-00 NODE ID
- H-00 HYDRANT ID
- HYDRANT LOCATION
- 12" CAST IRON PIPE (EXISTING)
- 12" DUCTILE IRON PIPE (EXISTING)
- 10" DUCTILE IRON PIPE (EXISTING)
- 8" DUCTILE IRON PIPE (EXISTING)

BkF 100+ YEARS

ENGINEERS . SURVEYORS . PLANNERS

APPENDIX C-1

Model Demand Scenario 1: Static

Node Report

Node ID	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
J-1	63.00	240.00	77
J-2	60.00	240.00	78
J-3	57.00	240.00	79
J-4	49.24	240.00	83
J-6	61.00	240.00	77
J-7	61.00	240.00	77
J-8	61.00	240.00	77
J-9	61.00	240.00	77
J-10	65.00	240.00	76
J-11	68.00	240.00	74
J-12	69.95	240.00	74
J-13	72.00	240.00	73
J-14	77.00	240.00	71
J-15	83.00	240.00	68
J-16	83.00	240.00	68
H-1	63.00	240.00	77
H-2	57.00	240.00	79
H-3	44.00	240.00	85
H-4	72.00	240.00	73
H-5	61.00	240.00	77
H-6	50.00	240.00	82
H-7	72.00	240.00	73
H-8	68.00	240.00	74
H-9	77.00	240.00	71
H-10	83.00	240.00	68
H-11	82.00	240.00	68
H-12	77.00	240.00	71
H-13	63.00	240.00	77
H-14	67.00	240.00	75

APPENDIX C-2

Model Demand Scenario 2: Peak Hour Demand

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ PHD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	500	1,000	76	1.73	TRUE
J-2	500	1,000	77	1.32	TRUE
J-3	500	1,000	79	1.87	TRUE
J-4	500	1,000	80	1.57	TRUE
J-6	500	1,000	76	1.80	TRUE
J-7	500	1,000	77	2.03	TRUE
J-8	500	1,000	77	2.66	TRUE
J-9	500	1,000	77	0.80	TRUE
J-10	500	1,000	75	1.86	TRUE
J-11	500	1,000	74	1.87	TRUE
J-12	500	1,000	72	2.55	TRUE
J-13	500	1,000	72	1.85	TRUE
J-14	500	1,000	70	1.84	TRUE
J-15	500	1,000	67	1.69	TRUE
J-16	500	1,000	66	2.96	TRUE
H-1	500	1,000	77	0.18	TRUE
H-2	500	1,000	79	0.42	TRUE
H-3	500	1,000	85	0.06	TRUE
H-4	500	1,000	73	0.14	TRUE
H-5	500	1,000	77	0.29	TRUE
H-6	500	1,000	82	0.26	TRUE
H-7	500	1,000	73	0.38	TRUE
H-8	500	1,000	74	0.30	TRUE
H-9	500	1,000	71	0.08	TRUE
H-10	500	1,000	68	0.15	TRUE
H-11	500	1,000	68	0.36	TRUE
H-12	500	1,000	71	0.06	TRUE
H-13	500	1,000	77	0.29	TRUE
H-14	500	1,000	75	0.10	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX C-3

Model Demand Scenario 3: Max Day Demand + Fire Flow

Node Report

Label	Demand (gpm)	Available Flow with System-wide Constraint * (gpm)	Minimum Residual Pressure @ MDD (psi)	Maximum Pipe Velocity (ft/s)	Satisfies Criteria?
J-1	4,820	6,000	73	10.40	TRUE
J-2	4,820	6,000	61	7.93	TRUE
J-3	4,820	6,000	74	11.25	TRUE
J-4	4,820	5,788	38	9.09	TRUE
J-6	4,820	6,000	56	10.78	TRUE
J-7	4,820	6,000	68	12.17	TRUE
J-8	4,820	5,648	70	15.00	TRUE
J-9	4,820	6,000	74	4.80	TRUE
J-10	4,820	6,000	62	11.16	TRUE
J-11	4,820	6,000	63	11.23	TRUE
J-12	4,820	5,881	49	15.00	TRUE
J-13	4,820	6,000	68	11.10	TRUE
J-14	4,820	6,000	62	11.02	TRUE
J-15	4,820	6,000	47	10.12	TRUE
J-16	4,820	5,065	33	15.00	TRUE
H-1	4,820	6,000	76	1.06	TRUE
H-2	4,820	6,000	78	2.50	TRUE
H-3	4,820	6,000	85	0.33	TRUE
H-4	4,820	6,000	72	0.87	TRUE
H-5	4,820	6,000	77	1.75	TRUE
H-6	4,820	6,000	82	1.56	TRUE
H-7	4,820	6,000	72	2.30	TRUE
H-8	4,820	6,000	74	1.80	TRUE
H-9	4,820	6,000	70	0.45	TRUE
H-10	4,820	6,000	68	0.90	TRUE
H-11	4,820	6,000	67	2.15	TRUE
H-12	4,820	6,000	70	0.33	TRUE
H-13	4,820	6,000	76	1.77	TRUE
H-14	4,820	6,000	75	0.59	TRUE

* Available flow reported is based on system-wide constraint of 20 psi and 15 fps applied every where in the system. During simulation, if the pressure were to drop below 20 psi or velocity exceed 15 fps at any location system-wide due to demand placed at that specific node in question, then the simulation ends and the resulting flow calculated at the end of that simulation is reported for that node in question.

APPENDIX D

LSAP Sewer Model Reports

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-AA-P1	294-206	294-207	**1173.61**	6027.72	24	278.00	0.004	0.013	59.36	58.38	73.50	71.62	59.96	58.98	13.54	12.14	3.31	**0.30**
EX-AA-P2	294-207	295-201	**1173.61**	6002.76	24	320.40	0.003	0.013	58.38	57.26	71.62	69.20	58.98	57.86	12.64	11.24	3.30	**0.30**
EX-AA-P3	295-201	295-202	**1173.61**	5982.64	24	293.80	0.003	0.013	57.26	56.24	69.20	67.30	57.86	56.85	11.34	9.94	3.29	**0.30**
EX-AA-P4	295-202	295-203	**1203.25**	6012.36	24	305.10	0.004	0.013	56.24	55.17	67.30	62.64	56.85	55.78	10.45	9.06	3.33	**0.31**
EX-AA-P5	295-203	295-207	**1203.25**	5946.41	24	29.20	0.003	0.013	55.17	55.07	62.64	62.42	55.78	55.68	6.86	5.47	3.30	**0.31**
EX-AA-P6	295-207	295-208	**1203.25**	6011.31	24	119.80	0.004	0.013	55.07	54.65	62.42	61.50	55.68	55.26	6.74	5.35	3.33	**0.31**
EX-AA-P7	295-208	295-209	**1203.25**	6015.10	24	131.10	0.004	0.013	54.65	54.19	61.50	61.30	55.26	54.79	6.24	4.85	3.33	**0.31**
EX-AA-P8	295-209	295-204	**1203.25**	6076.51	24	19.50	0.004	0.013	54.19	54.12	61.30	61.50	54.79	54.73	6.51	5.11	3.36	**0.30**
EX-AA-P9	295-204	295-210	**1203.25**	6012.78	24	111.20	0.004	0.013	54.12	53.73	61.50	61.30	54.73	54.34	6.77	5.38	3.33	**0.31**
EX-AA-P10	295-210	295-211	**1203.25**	6020.16	24	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.34	53.87	6.96	5.57	3.33	**0.31**
EX-AA-P11	295-211	295-212	**1203.25**	6063.28	24	58.90	0.004	0.013	53.27	53.06	60.40	60.33	53.87	53.67	6.53	5.13	3.35	**0.30**
EX-AA-P12	295-212	296-211	**1203.25**	5948.20	24	81.60	0.003	0.013	53.06	52.78	60.33	59.45	53.67	53.39	6.66	5.27	3.30	**0.31**
EX-AA-P13	296-211	296-212	**1232.89**	6020.30	24	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.39	52.93	6.06	4.67	3.36	**0.31**
EX-AA-P14	296-212	296-209	**1232.89**	6030.04	24	90.70	0.004	0.013	52.32	52.00	59.45	63.00	52.93	52.58	6.52	5.13	3.36	**0.31**
EX-CR-P1	337-202	337-201	**24.75**	8049.63	10	5.00	0.670	0.013	44.81	41.45	54.00	54.00	44.91	41.89	9.09	8.36	7.36	**0.12**
EX-CR-P2	337-201	337-206 (EX)	**338.45**	1786.38	18	348.20	0.001	0.013	41.45	40.95	54.00	53.00	41.89	41.27	12.11	11.05	1.73	**0.29**
EX-KR-P1	333-206	334-201	**336.11**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
EX-KR-P2	334-201	334-202	**492.82**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
EX-KR-P3	334-202	335-201	**519.37**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
EX-KR-P4	335-201	335-202	**571.01**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.61	**0.32**
EX-KR-P5	335-202	336-201	**634.28**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
EX-KR-P6	336-201	336-202	**733.54**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.90	11.20	10.18	5.67	**0.32**
EX-KR-P7	336-203	336-204	**3.09**	296.15	8	335.40	0.003	0.013	46.80	45.80	55.00	56.50	46.85	45.90	8.15	7.53	0.61	**0.08**
EX-KR-P8	336-204	337-202	**16.19**	538.35	10	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.90	44.91	10.60	9.87	0.98	**0.12**
EX-KR-P9	337-203	337-201	**313.70**	1858.32	18	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.38	41.89	10.42	9.34	1.74	**0.28**
EX-KR-P10	337-204	337-203	**293.22**	1764.29	18	328.50	0.001	0.013	42.52	42.06	52.50	52.80	42.93	42.38	9.57	8.48	1.65	**0.27**
EX-KR-P11	337-208	337-204	**276.10**	1963.22	18	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.15	42.93	9.25	8.13	1.75	**0.25**
EX-KR-P12	337-205	337-208	**276.10**	1686.94	18	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.49	43.15	8.71	7.62	1.57	**0.27**
EX-KR-P13	338-201	337-205	**276.10**	1765.25	18	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.04	43.49	7.46	6.36	1.62	**0.27**
EX-KR-P14	338-202	338-201	**159.71**	1758.45	18	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.42	44.04	6.58	5.39	1.38	**0.21**
EX-KR-P15	338-203	338-204 (EX)	**159.71**	5139.47	12	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.43	29.82	18.57	17.82	6.61	**0.25**
EX-KR-P16	338-207	338-203	**159.71**	783.86	12	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.42	32.43	16.38	15.69	1.75	**0.31**
EX-KR-P17	338-209	338-207	**82.12**	828.07	12	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.29	33.42	15.31	14.52	1.50	**0.21**
EX-KR-P18	339-201	338-209	**71.31**	828.61	12	324.00	0.003	0.013	35.05	34.18	49.20	49.60	35.25	34.34	13.95	13.15	1.44	**0.20**
EX-KR-P19	339-202	339-201	**56.02**	825.85	12	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.20	35.29	11.40	10.58	1.34	**0.18**
EX-LE-P1	265-204	296-203	**1539.58**	10356.75	27	706.10	0.006	0.013	56.12	52.20	67.83	69.82	56.75	52.79	11.08	9.46	4.16	**0.28**
EX-LE-P2	296-203	296-202	**1539.58**	10321.07	27	526.00	0.006	0.013	52.20	49.30	69.82	61.19	52.83	50.15	16.99	15.37	4.15	**0.28**
EX-LE-P3	296-202	305-207	**2787.60**	9722.92	27	400.60	0.005	0.013	49.30	47.34	61.19	60.50	50.15	48.16	11.04	9.64	4.70	**0.38**
EX-LE-P4	305-207	305-208	**2787.60**	10276.48	27	142.70	0.005	0.013	47.34	46.56	60.50	58.98	48.19	47.41	12.31	10.91	4.90	**0.38**
EX-LE-P5	305-208	305-209	**2793.45**	10397.94	27	512.90	0.006	0.013	46.56	43.69	58.98	56.98	47.41	44.54	11.57	10.17	4.94	**0.38**
EX-LE-P6	305-209	336-202	**2799.30**	10219.40	27	323.70	0.005	0.013	43.69	41.94	56.98	57.04	44.54	42.90	12.44	11.04	4.88	**0.38**
EX-LE-P7	336-202	336-207 (EX)	**3533.54**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	42.90	39.23	14.14	12.85	5.20	**0.43**
EX-SC-P1	306-201	306-202	**9.98**	982.14	10	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.84	53.87	8.06	7.29	1.30	**0.07**
EX-SC-P2	306-202	306-203	**14.28**	616.32	10	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.87	52.73	8.53	7.79	1.04	**0.11**
EX-SC-P3	306-203	306-204	**30.39**	595.79	10	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.73	51.64	8.12	7.42	1.28	**0.16**
EX-SC-P4	306-204	305-205	**35.42**	595.39	10	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.64	50.58	9.16	8.47	1.33	**0.17**
EX-SC-P5	305-205	305-204	**54.50**	507.31	10	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.58	49.77	8.92	8.27	1.35	**0.22**
EX-SZW-P1	305-206	305-204	**10.14**	544.00	10	173.20	0.003	0.013	50.13	49.60	60.20	59.40	50.21	49.77	9.99	9.24	0.86	**0.10**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	**d/D**
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-SZW-P2	305-204	305-203	**73.50**	832.77	10	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.77	49.50	9.63	8.97	2.10	**0.20**
EX-SZW-P3	305-203	305-202	**73.50**	568.08	10	209.70	0.003	0.013	49.30	48.60	59.60	59.80	49.50	48.79	10.10	9.47	1.60	**0.24**
EX-SZW-P4	305-202	305-201	**73.50**	663.21	10	321.00	0.005	0.013	48.60	47.14	59.80	59.70	48.79	47.31	11.01	10.37	1.79	**0.23**
EX-SZW-P5	305-201	336-201	**86.38**	602.90	10	324.50	0.004	0.013	47.04	45.82	59.70	57.50	47.25	46.30	12.45	11.83	1.75	**0.25**
EX-UD-P1	302-201	302-202	**26.18**	563.71	10	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.01	38.27	10.99	10.28	1.17	**0.14**
EX-UD-P2	302-202	302-203	**40.73**	553.58	10	306.10	0.003	0.013	38.12	37.15	49.00	47.50	38.27	37.28	10.73	10.05	1.32	**0.18**
EX-UD-P3	302-203	339-203	**56.02**	566.65	10	295.10	0.003	0.013	37.10	36.12	47.50	47.60	37.28	36.27	10.22	9.57	1.48	**0.22**
EX-UD-P4	339-203	339-202	**56.02**	972.06	10	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.27	36.20	11.33	10.65	2.16	**0.18**
EX-WA-P1	266-210	266-204	**6.80**	342.80	8	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.34	55.35	11.66	11.06	0.86	**0.11**
EX-WA-P2	266-204	266-205	**6.80**	627.96	10	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.35	55.11	11.65	10.88	0.84	**0.07**
EX-WA-P3	266-205	265-206	**8.08**	622.31	10	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.11	53.93	10.89	10.13	0.88	**0.08**
EX-WA-P4	265-206	296-207	**14.01**	617.62	10	114.10	0.004	0.013	53.84	53.39	65.00	62.50	53.93	53.48	11.07	10.33	1.04	**0.11**
EX-WA-P5	296-207	296-213	**15.13**	633.75	10	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.48	53.33	9.02	8.28	1.08	**0.11**
EX-WA-P6	296-213	296-208	**15.13**	620.62	10	326.40	0.004	0.013	53.24	51.94	61.40	63.60	53.33	52.40	8.07	7.33	1.07	**0.11**
EX-WA-P7	296-208	296-209	**15.13**	628.88	10	34.20	0.004	0.013	51.94	51.80	63.60	63.00	52.40	52.40	11.20	10.83	1.07	**0.55**
EX-WA-P8	296-209	296-201	**1248.02**	6427.38	24	309.40	0.004	0.013	51.80	50.56	63.00	62.00	52.40	51.16	10.60	9.20	3.53	**0.30**
EX-WA-P9	296-201	296-202	**1248.02**	6413.14	24	315.80	0.004	0.013	50.56	49.30	62.00	61.19	51.16	50.15	10.84	9.44	3.52	**0.30**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-AA-P1	294-206 (P)	294-207 (P)	**1173.61**	6028.52	24.00	278.00	0.004	0.013	59.36	58.38	73.50	71.62	59.96	58.98	13.54	12.14	3.31	**0.30**
PR-AA-P2	294-207 (P)	295-201 (P)	**1173.61**	6003.00	24.00	320.40	0.003	0.013	58.38	57.26	71.62	69.20	58.98	57.86	12.64	11.24	3.30	**0.30**
PR-AA-P3	295-201 (P)	295-202 (P)	**1173.61**	5982.68	24.00	293.80	0.003	0.013	57.26	56.24	69.20	67.30	57.86	56.85	11.34	9.94	3.29	**0.30**
PR-AA-P4	295-202 (P)	295-203 (P)	**1203.25**	6012.41	24.00	305.10	0.004	0.013	56.24	55.17	67.30	62.64	56.85	55.78	10.45	9.06	3.33	**0.31**
PR-AA-P5	295-203 (P)	295-207 (P)	**1203.25**	5946.35	24.00	29.20	0.003	0.013	55.17	55.07	62.64	62.42	55.78	55.68	6.86	5.47	3.30	**0.31**
PR-AA-P6	295-207 (P)	295-208 (P)	**1203.25**	6011.14	24.00	119.80	0.004	0.013	55.07	54.65	62.42	61.50	55.68	55.25	6.74	5.35	3.33	**0.31**
PR-AA-P7	295-208 (P)	295-209 (P)	**1203.25**	6079.61	24.00	131.10	0.004	0.013	54.65	54.18	61.50	61.30	55.25	54.80	6.25	4.85	3.36	**0.30**
PR-AA-P8	295-209 (P)	295-204 (P)	**1203.25**	5624.90	24.00	19.50	0.003	0.013	54.18	54.12	61.30	61.50	54.80	54.73	6.50	5.12	3.17	**0.31**
PR-AA-P9	295-204 (P)	295-210 (P)	**1203.25**	6012.26	24.00	111.20	0.004	0.013	54.12	53.73	61.50	61.30	54.73	54.34	6.77	5.38	3.33	**0.31**
PR-AA-P10	295-210 (P)	295-211 (P)	**1203.25**	6020.88	24.00	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.34	53.87	6.96	5.57	3.33	**0.31**
PR-AA-P11	295-211 (P)	295-212 (P)	**1203.25**	6062.16	24.00	58.90	0.004	0.013	53.27	53.06	60.40	60.33	53.87	53.67	6.53	5.13	3.35	**0.30**
PR-AA-P12	295-212 (P)	296-211 (P)	**1203.25**	5948.96	24.00	81.60	0.003	0.013	53.06	52.78	60.33	59.45	53.67	53.39	6.66	5.27	3.30	**0.31**
PR-AA-P13	296-211 (P)	296-212 (P)	**1232.89**	6020.86	24.00	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.39	52.93	6.06	4.67	3.36	**0.31**
PR-AA-P14	296-212 (P)	296-209 (P)	**1232.89**	6040.64	24.00	90.40	0.004	0.013	52.32	52.00	59.45	63.00	52.93	52.58	6.52	5.13	3.36	**0.31**
PR-CR-P1	337-202 (P)	337-201 (P)	**24.75**	7952.27	10.00	5.10	0.654	0.013	44.81	41.45	54.00	54.00	44.91	41.89	9.09	8.36	7.28	**0.12**
PR-CR-P2	337-201 (P)	337-206 (P)	**338.45**	1789.33	18.00	347.10	0.001	0.013	41.45	40.95	54.00	53.00	41.89	41.27	12.11	11.05	1.73	**0.29**
PR-KR-P1	333-206 (P)	334-201 (P)	**336.11**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	57.84	56.04	10.02	8.87	2.39	**0.23**
PR-KR-P2	334-201 (P)	334-202 (P)	**492.82**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.04	54.54	10.66	9.61	2.45	**0.30**
PR-KR-P3	334-202 (P)	335-201 (P)	**519.37**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.54	51.77	11.26	10.22	2.55	**0.31**
PR-KR-P4	335-201 (P)	335-202 (P)	**571.01**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	51.77	49.06	12.73	11.71	2.62	**0.32**
PR-KR-P5	335-202 (P)	336-201 (P)	**634.28**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.06	46.30	12.14	11.11	2.99	**0.31**
PR-KR-P6	336-201 (P)	336-202 (P)	**733.54**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.30	42.87	11.20	10.18	5.67	**0.32**
PR-KR-P7	336-203 (P)	336-204 (P)	**3.09**	529.77	8.00	335.40	0.010	0.013	49.00	45.80	55.00	56.50	49.04	45.90	5.96	5.33	0.92	**0.06**
PR-KR-P8	336-204 (P)	337-202 (P)	**16.19**	538.33	10.00	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.90	44.91	10.60	9.87	0.98	**0.12**
PR-KR-P9	337-203 (P)	337-201 (P)	**313.70**	1858.54	18.00	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.38	41.89	10.42	9.34	1.74	**0.28**
PR-KR-P10	337-204 (P)	337-203 (P)	**293.22**	1764.27	18.00	328.50	0.001	0.013	42.52	42.06	52.50	52.80	42.93	42.38	9.57	8.48	1.65	**0.27**
PR-KR-P11	337-208 (P)	337-204 (P)	**276.10**	1963.59	18.00	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.15	42.93	9.25	8.13	1.75	**0.25**
PR-KR-P12	337-205 (P)	337-208 (P)	**276.10**	1686.95	18.00	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.49	43.15	8.71	7.62	1.57	**0.27**
PR-KR-P13	338-201 (P)	337-205 (P)	**276.10**	1765.17	18.00	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.04	43.49	7.46	6.36	1.62	**0.27**
PR-KR-P14	338-202 (P)	338-201 (P)	**159.71**	1758.49	18.00	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.42	44.04	6.58	5.39	1.38	**0.21**
PR-KR-P15	338-203 (P)	Kifer Lift Station	**159.71**	5132.80	12.00	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.43	29.82	18.57	17.82	6.60	**0.25**
PR-KR-P16	338-207 (P)	338-203 (P)	**159.71**	783.86	12.00	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.42	32.43	16.38	15.69	1.75	**0.31**
PR-KR-P17	338-209 (P)	338-207 (P)	**82.12**	828.11	12.00	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.29	33.42	15.31	14.52	1.50	**0.21**
PR-KR-P18	339-201 (P)	338-209 (P)	**71.31**	827.69	12.00	324.70	0.003	0.013	35.05	34.18	49.20	49.60	35.25	34.34	13.95	13.15	1.44	**0.20**
PR-KR-P19	339-202 (P)	339-201 (P)	**56.02**	825.91	12.00	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.20	35.29	11.40	10.58	1.34	**0.18**
PR-LE-P1	265-204 (P)	296-203 (P)	**1539.58**	10360.63	27.00	705.50	0.006	0.013	56.12	52.20	67.83	69.82	56.75	52.79	11.08	9.46	4.17	**0.28**
PR-LE-P2	296-203 (P)	296-202 (P)	**1539.58**	10316.94	27.00	526.40	0.006	0.013	52.20	49.30	69.82	61.19	52.83	50.15	16.99	15.37	4.15	**0.28**
PR-LE-P3	296-202 (P)	305-207 (P)	**2787.60**	9715.82	27.00	401.10	0.005	0.013	49.30	47.34	61.19	60.50	50.15	48.16	11.04	9.64	4.70	**0.38**
PR-LE-P4	305-207 (P)	305-208 (P)	**2787.60**	10306.34	27.00	141.90	0.005	0.013	47.34	46.56	60.50	58.98	48.19	47.41	12.31	10.91	4.91	**0.38**
PR-LE-P5	305-208 (P)	305-209 (P)	**2793.45**	10400.80	27.00	512.60	0.006	0.013	46.56	43.69	58.98	56.98	47.41	44.54	11.57	10.17	4.94	**0.38**
PR-LE-P6	305-209 (P)	336-202 (P)	**2799.30**	10208.66	27.00	324.40	0.005	0.013	43.69	41.94	56.98	57.04	44.54	42.87	12.44	11.04	4.88	**0.38**
PR-LE-P7	336-202 (P)	336-207 (P)	**3533.54**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	42.87	39.08	14.17	12.58	6.24	**0.37**
PR-SC-P1	306-201 (P)	306-202 (P)	**9.98**	982.15	10.00	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.84	53.87	8.06	7.29	1.30	**0.07**
PR-SC-P2	306-202 (P)	306-203 (P)	**14.28**	616.25	10.00	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.87	52.73	8.53	7.79	1.04	**0.11**
PR-SC-P3	306-203 (P)	306-204 (P)	**30.39**	595.86	10.00	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.73	51.64	8.12	7.42	1.28	**0.16**
PR-SC-P4	306-204 (P)	305-205 (P)	**35.42**	595.40	10.00	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.64	50.58	9.16	8.47	1.33	**0.17**
PR-SC-P5	305-205 (P)	305-204 (P)	**54.50**	507.29	10.00	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.58	49.77	8.92	8.27	1.35	**0.22**
PR-SZW-P1	305-206 (P)	305-204 (P)	**10.14**	707.09	10.00	173.20	0.003	0.010	50.13	49.60	60.20	59.40	50.20	49.77	10.00	9.24	1.04	**0.08**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Average Dry Weather Flow (ADWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-SZW-P2	305-204 (P)	305-203 (P)	**73.50**	833.08	10.00	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.77	49.50	9.63	8.97	2.10	**0.20**
PR-SZW-P3	305-203 (P)	305-202 (P)	**73.50**	568.20	10.00	209.60	0.003	0.013	49.30	48.60	59.60	59.80	49.50	48.79	10.10	9.47	1.60	**0.24**
PR-SZW-P4	305-202 (P)	305-201 (P)	**73.50**	662.80	10.00	321.40	0.005	0.013	48.60	47.14	59.80	59.70	48.79	47.31	11.01	10.37	1.78	**0.23**
PR-SZW-P5	305-201 (P)	336-201 (P)	**86.38**	1148.49	11.54	324.50	0.004	0.010	47.04	45.82	59.70	57.50	47.22	46.30	12.48	11.70	2.07	**0.19**
PR-UD-P1	302-201 (P)	302-202 (P)	**26.18**	563.74	10.00	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.01	38.27	10.99	10.28	1.17	**0.14**
PR-UD-P2	302-202 (P)	302-203 (P)	**40.73**	567.61	10.00	306.10	0.003	0.013	38.12	37.10	49.00	47.50	38.27	37.28	10.73	10.05	1.35	**0.18**
PR-UD-P3	302-203 (P)	339-203 (P)	**56.02**	566.91	10.00	294.90	0.003	0.013	37.10	36.12	47.50	47.60	37.28	36.27	10.22	9.57	1.48	**0.22**
PR-UD-P4	339-203 (P)	339-202 (P)	**56.02**	975.12	10.00	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.27	36.20	11.33	10.65	2.16	**0.18**
PR-WA-P1	266-210 (P)	266-204 (P)	**6.80**	342.80	8.00	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.34	55.35	11.66	11.06	0.86	**0.11**
PR-WA-P2	266-204 (P)	266-205 (P)	**6.80**	628.19	10.00	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.35	55.11	11.65	10.88	0.84	**0.07**
PR-WA-P3	266-205 (P)	265-206 (P)	**8.08**	622.28	10.00	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.11	53.93	10.89	10.13	0.88	**0.08**
PR-WA-P4	265-206 (P)	296-207 (P)	**14.01**	617.62	10.00	114.10	0.004	0.013	53.84	53.39	65.00	62.50	53.93	53.48	11.07	10.33	1.04	**0.11**
PR-WA-P5	296-207 (P)	296-213 (P)	**15.13**	634.18	10.00	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.48	53.33	9.02	8.28	1.08	**0.11**
PR-WA-P6	296-213 (P)	296-208 (P)	**15.13**	620.91	10.00	326.10	0.004	0.013	53.24	51.94	61.40	63.60	53.33	52.40	8.07	7.33	1.07	**0.11**
PR-WA-P7	296-208 (P)	296-209 (P)	**15.13**	3466.83	17.20	34.30	0.004	0.010	51.94	51.80	63.60	63.00	52.40	52.40	11.20	10.23	1.19	**0.32**
PR-WA-P8	296-209 (P)	296-201 (P)	**1248.02**	6431.76	24.00	309.00	0.004	0.013	51.80	50.56	63.00	62.00	52.40	51.16	10.60	9.20	3.53	**0.30**
PR-WA-P9	296-201 (P)	296-202 (P)	**1248.02**	6424.85	24.00	314.70	0.004	0.013	50.56	49.30	62.00	61.19	51.16	50.15	10.84	9.44	3.53	**0.30**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-AA-P1	294-206	294-207	**3110.07**	6027.72	24	278.00	0.004	0.013	59.36	58.38	73.50	71.62	60.38	59.40	13.12	12.14	4.31	**0.51**
EX-AA-P2	294-207	295-201	**3110.07**	6002.76	24	320.40	0.003	0.013	58.38	57.26	71.62	69.20	59.40	58.28	12.22	11.24	4.30	**0.51**
EX-AA-P3	295-201	295-202	**3110.07**	5982.64	24	293.80	0.003	0.013	57.26	56.24	69.20	67.30	58.28	57.28	10.92	9.94	4.28	**0.51**
EX-AA-P4	295-202	295-203	**3203.44**	6012.36	24	305.10	0.004	0.013	56.24	55.17	67.30	62.64	57.28	56.21	10.02	9.06	4.33	**0.52**
EX-AA-P5	295-203	295-207	**3203.44**	5946.41	24	29.20	0.003	0.013	55.17	55.07	62.64	62.42	56.21	56.11	6.43	5.47	4.30	**0.52**
EX-AA-P6	295-207	295-208	**3203.44**	6011.31	24	119.80	0.004	0.013	55.07	54.65	62.42	61.50	56.11	55.69	6.31	5.35	4.33	**0.52**
EX-AA-P7	295-208	295-209	**3203.44**	6015.10	24	131.10	0.004	0.013	54.65	54.19	61.50	61.30	55.69	55.22	5.81	4.85	4.33	**0.52**
EX-AA-P8	295-209	295-204	**3203.44**	6076.51	24	19.50	0.004	0.013	54.19	54.12	61.30	61.50	55.22	55.16	6.08	5.11	4.37	**0.52**
EX-AA-P9	295-204	295-210	**3203.44**	6012.78	24	111.20	0.004	0.013	54.12	53.73	61.50	61.30	55.16	54.77	6.34	5.38	4.33	**0.52**
EX-AA-P10	295-210	295-211	**3203.44**	6020.16	24	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.77	54.30	6.53	5.57	4.34	**0.52**
EX-AA-P11	295-211	295-212	**3203.44**	6063.28	24	58.90	0.004	0.013	53.27	53.06	60.40	60.33	54.30	54.11	6.10	5.13	4.36	**0.51**
EX-AA-P12	295-212	296-211	**3203.44**	5948.20	24	81.60	0.003	0.013	53.06	52.78	60.33	59.45	54.11	53.84	6.22	5.27	4.30	**0.52**
EX-AA-P13	296-211	296-212	**3296.81**	6020.30	24	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.84	53.37	5.61	4.67	4.37	**0.53**
EX-AA-P14	296-212	296-209	**3296.81**	6030.04	24	90.70	0.004	0.013	52.32	52.00	59.45	63.00	53.37	52.96	6.08	5.13	4.37	**0.52**
EX-CR-P1	337-202	337-201	**94.00**	8049.63	10	5.00	0.670	0.013	44.81	41.45	54.00	54.00	45.01	42.32	8.99	8.36	11.04	**0.24**
EX-CR-P2	337-201	337-206 (EX)	**1147.19**	1786.38	18	348.20	0.001	0.013	41.45	40.95	54.00	53.00	42.32	41.56	11.68	11.05	2.39	**0.58**
EX-KR-P1	333-206	334-201	**957.91**	2809.64	18	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
EX-KR-P2	334-201	334-202	**1460.66**	2505.53	18	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
EX-KR-P3	334-202	335-201	**1557.58**	2582.18	18	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
EX-KR-P4	335-201	335-202	**1720.26**	2582.16	18	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
EX-KR-P5	335-202	336-201	**1940.67**	2982.83	18	692.00	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
EX-KR-P6	336-201	336-202	**2314.89**	6905.33	18	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.71	10.81	10.18	7.84	**0.58**
EX-KR-P7	336-203	336-204	**12.81**	296.15	8	335.40	0.003	0.013	46.80	45.80	55.00	56.50	46.89	45.99	8.11	7.53	0.94	**0.14**
EX-KR-P8	336-204	337-202	**60.63**	538.35	10	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.99	45.01	10.51	9.87	1.46	**0.23**
EX-KR-P9	337-203	337-201	**1053.19**	1858.32	18	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.77	42.32	10.03	9.34	2.42	**0.54**
EX-KR-P10	337-204	337-203	**978.43**	1764.29	18	328.50	0.001	0.013	42.52	42.06	52.50	52.80	43.31	42.77	9.19	8.48	2.28	**0.53**
EX-KR-P11	337-208	337-204	**915.93**	1963.22	18	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.48	43.31	8.92	8.13	2.43	**0.47**
EX-KR-P12	337-205	337-208	**915.93**	1686.94	18	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.86	43.48	8.34	7.62	2.17	**0.52**
EX-KR-P13	338-201	337-205	**915.93**	1765.25	18	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.40	43.86	7.10	6.36	2.25	**0.51**
EX-KR-P14	338-202	338-201	**549.31**	1758.45	18	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.69	44.40	6.31	5.39	1.96	**0.39**
EX-KR-P15	338-203	338-204 (EX)	**549.31**	5139.47	12	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.65	29.92	18.35	17.82	9.51	**0.47**
EX-KR-P16	338-207	338-203	**549.31**	783.86	12	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.73	32.65	16.07	15.69	2.41	**0.62**
EX-KR-P17	338-209	338-207	**285.50**	828.07	12	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.49	33.73	15.11	14.52	2.13	**0.41**
EX-KR-P18	339-201	338-209	**246.06**	828.61	12	324.00	0.003	0.013	35.05	34.18	49.20	49.60	35.42	34.49	13.78	13.15	2.05	**0.37**
EX-KR-P19	339-202	339-201	**194.09**	825.85	12	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.35	35.42	11.25	10.58	1.91	**0.33**
EX-LE-P1	265-204	296-203	**4079.89**	10356.75	27	706.10	0.006	0.013	56.12	52.20	67.83	69.82	57.16	53.18	10.67	9.46	5.46	**0.46**
EX-LE-P2	296-203	296-202	**4079.89**	10321.07	27	526.00	0.006	0.013	52.20	49.30	69.82	61.19	53.24	50.77	16.58	15.37	5.44	**0.46**
EX-LE-P3	296-202	305-207	**7437.78**	9722.92	27	400.60	0.005	0.013	49.30	47.34	61.19	60.50	50.77	48.76	10.42	9.64	6.00	**0.65**
EX-LE-P4	305-207	305-208	**7437.78**	10276.48	27	142.70	0.005	0.013	47.34	46.56	60.50	58.98	48.76	47.98	11.74	10.91	6.27	**0.63**
EX-LE-P5	305-208	305-209	**7459.14**	10397.94	27	512.90	0.006	0.013	46.56	43.69	58.98	56.98	47.98	45.12	11.00	10.17	6.34	**0.63**
EX-LE-P6	305-209	336-202	**7480.50**	10219.40	27	323.70	0.005	0.013	43.69	41.94	56.98	57.04	45.12	43.71	11.86	11.04	6.25	**0.64**
EX-LE-P7	336-202	336-207 (EX)	**9798.29**	10208.70	27	671.10	0.005	0.013	41.94	38.32	57.04	54.28	43.71	39.96	13.33	12.85	6.51	**0.79**
EX-SC-P1	306-201	306-202	**38.92**	982.14	10	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.91	53.95	7.99	7.29	1.95	**0.16**
EX-SC-P2	306-202	306-203	**56.77**	616.32	10	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.95	52.85	8.45	7.79	1.57	**0.20**
EX-SC-P3	306-203	306-204	**116.94**	595.79	10	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.85	51.77	8.00	7.42	1.89	**0.30**
EX-SC-P4	306-204	305-205	**137.81**	595.39	10	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.77	50.78	9.03	8.47	1.98	**0.32**
EX-SC-P5	305-205	305-204	**212.52**	507.31	10	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.78	49.95	8.72	8.27	1.98	**0.46**
EX-SZW-P1	305-206	305-204	**39.56**	544.00	10	173.20	0.003	0.013	50.13	49.60	60.20	59.40	50.28	49.95	9.92	9.24	1.29	**0.18**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Existing System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
EX-SZW-P2	305-204	305-203	**286.64**	832.77	10	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.95	49.72	9.45	8.97	3.08	**0.42**
EX-SZW-P3	305-203	305-202	**286.64**	568.08	10	209.70	0.003	0.013	49.30	48.60	59.60	59.80	49.72	48.98	9.88	9.47	2.33	**0.50**
EX-SZW-P4	305-202	305-201	**286.64**	663.21	10	321.00	0.005	0.013	48.60	47.14	59.80	59.70	48.98	47.49	10.82	10.37	2.61	**0.46**
EX-SZW-P5	305-201	336-201	**330.43**	602.90	10	324.50	0.004	0.013	47.04	45.82	59.70	57.50	47.48	46.69	12.22	11.83	2.52	**0.53**
EX-UD-P1	302-201	302-202	**89.02**	563.71	10	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.11	38.41	10.89	10.28	1.68	**0.26**
EX-UD-P2	302-202	302-203	**142.12**	553.58	10	306.10	0.003	0.013	38.12	37.15	49.00	47.50	38.41	37.44	10.59	10.05	1.89	**0.35**
EX-UD-P3	302-203	339-203	**194.09**	566.65	10	295.10	0.003	0.013	37.10	36.12	47.50	47.60	37.44	36.41	10.06	9.57	2.10	**0.41**
EX-UD-P4	339-203	339-202	**194.09**	972.06	10	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.41	36.35	11.19	10.65	3.10	**0.35**
EX-WA-P1	266-210	266-204	**26.51**	342.80	8	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.40	55.41	11.60	11.06	1.30	**0.19**
EX-WA-P2	266-204	266-205	**26.51**	627.96	10	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.41	55.17	11.59	10.88	1.27	**0.14**
EX-WA-P3	266-205	265-206	**31.81**	622.31	10	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.17	54.01	10.83	10.13	1.33	**0.16**
EX-WA-P4	265-206	296-207	**56.42**	617.62	10	114.10	0.004	0.013	53.84	53.39	65.00	62.50	54.01	53.56	10.99	10.33	1.57	**0.20**
EX-WA-P5	296-207	296-213	**61.08**	633.75	10	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.56	53.42	8.94	8.28	1.64	**0.20**
EX-WA-P6	296-213	296-208	**61.08**	620.62	10	326.40	0.004	0.013	53.24	51.94	61.40	63.60	53.42	52.83	7.98	7.33	1.61	**0.22**
EX-WA-P7	296-208	296-209	**61.08**	628.88	10	34.20	0.004	0.013	51.94	51.80	63.60	63.00	52.83	52.83	10.77	10.83	0.25	**1.07**
EX-WA-P8	296-209	296-201	**3357.89**	6427.38	24	309.40	0.004	0.013	51.80	50.56	63.00	62.00	52.83	51.59	10.17	9.20	4.61	**0.52**
EX-WA-P9	296-201	296-202	**3357.89**	6413.14	24	315.80	0.004	0.013	50.56	49.30	62.00	61.19	51.59	50.77	10.41	9.44	4.60	**0.52**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-AA-P1	294-206 (P)	294-207 (P)	**3110.07**	6028.52	24.00	278.00	0.004	0.013	59.36	58.38	73.50	71.62	60.38	59.40	13.12	12.14	4.31	**0.51**
PR-AA-P2	294-207 (P)	295-201 (P)	**3110.07**	6003.00	24.00	320.40	0.003	0.013	58.38	57.26	71.62	69.20	59.40	58.28	12.22	11.24	4.30	**0.51**
PR-AA-P3	295-201 (P)	295-202 (P)	**3110.07**	5982.68	24.00	293.80	0.003	0.013	57.26	56.24	69.20	67.30	58.28	57.28	10.92	9.94	4.28	**0.51**
PR-AA-P4	295-202 (P)	295-203 (P)	**3203.44**	6012.41	24.00	305.10	0.004	0.013	56.24	55.17	67.30	62.64	57.28	56.21	10.02	9.06	4.33	**0.52**
PR-AA-P5	295-203 (P)	295-207 (P)	**3203.44**	5946.35	24.00	29.20	0.003	0.013	55.17	55.07	62.64	62.42	56.21	56.11	6.43	5.47	4.30	**0.52**
PR-AA-P6	295-207 (P)	295-208 (P)	**3203.44**	6011.14	24.00	119.80	0.004	0.013	55.07	54.65	62.42	61.50	56.11	55.68	6.31	5.35	4.33	**0.52**
PR-AA-P7	295-208 (P)	295-209 (P)	**3203.44**	6079.61	24.00	131.10	0.004	0.013	54.65	54.18	61.50	61.30	55.68	55.24	5.82	4.85	4.37	**0.52**
PR-AA-P8	295-209 (P)	295-204 (P)	**3203.44**	5624.90	24.00	19.50	0.003	0.013	54.18	54.12	61.30	61.50	55.24	55.16	6.06	5.12	4.12	**0.53**
PR-AA-P9	295-204 (P)	295-210 (P)	**3203.44**	6012.26	24.00	111.20	0.004	0.013	54.12	53.73	61.50	61.30	55.16	54.77	6.34	5.38	4.33	**0.52**
PR-AA-P10	295-210 (P)	295-211 (P)	**3203.44**	6020.88	24.00	130.80	0.004	0.013	53.73	53.27	61.30	60.40	54.77	54.30	6.53	5.57	4.34	**0.52**
PR-AA-P11	295-211 (P)	295-212 (P)	**3203.44**	6062.16	24.00	58.90	0.004	0.013	53.27	53.06	60.40	60.33	54.30	54.11	6.10	5.13	4.36	**0.51**
PR-AA-P12	295-212 (P)	296-211 (P)	**3203.44**	5948.96	24.00	81.60	0.003	0.013	53.06	52.78	60.33	59.45	54.11	53.84	6.22	5.27	4.30	**0.52**
PR-AA-P13	296-211 (P)	296-212 (P)	**3296.81**	6020.86	24.00	130.80	0.004	0.013	52.78	52.32	59.45	59.45	53.84	53.37	5.61	4.67	4.37	**0.53**
PR-AA-P14	296-212 (P)	296-209 (P)	**3296.81**	6040.64	24.00	90.40	0.004	0.013	52.32	52.00	59.45	63.00	53.37	52.96	6.08	5.13	4.38	**0.52**
PR-CR-P1	337-202 (P)	337-201 (P)	**94.00**	7952.27	10.00	5.10	0.654	0.013	44.81	41.45	54.00	54.00	45.01	42.32	8.99	8.36	10.94	**0.24**
PR-CR-P2	337-201 (P)	337-206 (P)	**1147.19**	1789.33	18.00	347.10	0.001	0.013	41.45	40.95	54.00	53.00	42.32	41.56	11.68	11.05	2.39	**0.58**
PR-KR-P1	333-206 (P)	334-201 (P)	**957.91**	2809.84	18.00	534.90	0.004	0.013	57.49	55.59	67.86	66.70	58.09	56.41	9.77	8.87	3.21	**0.40**
PR-KR-P2	334-201 (P)	334-202 (P)	**1460.66**	2505.44	18.00	534.60	0.003	0.013	55.59	54.08	66.70	65.80	56.41	54.92	10.29	9.61	3.28	**0.55**
PR-KR-P3	334-202 (P)	335-201 (P)	**1557.58**	2582.15	18.00	930.00	0.003	0.013	54.08	51.29	65.80	64.50	54.92	52.19	10.88	10.22	3.41	**0.56**
PR-KR-P4	335-201 (P)	335-202 (P)	**1720.26**	2582.22	18.00	900.00	0.003	0.013	51.29	48.59	64.50	61.20	52.19	49.47	12.31	11.71	3.48	**0.60**
PR-KR-P5	335-202 (P)	336-201 (P)	**1940.67**	2981.31	18.00	692.70	0.004	0.013	48.59	45.82	61.20	57.50	49.47	46.69	11.73	11.11	4.00	**0.59**
PR-KR-P6	336-201 (P)	336-202 (P)	**2314.89**	6904.37	18.00	180.90	0.021	0.013	45.82	41.94	57.50	57.04	46.69	43.53	10.81	10.18	7.84	**0.58**
PR-KR-P7	336-203 (P)	336-204 (P)	**12.81**	529.77	8.00	335.40	0.010	0.013	49.00	45.80	55.00	56.50	49.08	45.99	5.92	5.33	1.42	**0.12**
PR-KR-P8	336-204 (P)	337-202 (P)	**60.63**	538.33	10.00	330.30	0.003	0.013	45.80	44.81	56.50	54.00	45.99	45.01	10.51	9.87	1.46	**0.23**
PR-KR-P9	337-203 (P)	337-201 (P)	**1053.19**	1858.54	18.00	328.20	0.002	0.013	41.96	41.45	52.80	54.00	42.77	42.32	10.03	9.34	2.42	**0.54**
PR-KR-P10	337-204 (P)	337-203 (P)	**978.43**	1764.27	18.00	328.50	0.001	0.013	42.52	42.06	52.50	52.80	43.31	42.77	9.19	8.48	2.28	**0.53**
PR-KR-P11	337-208 (P)	337-204 (P)	**915.93**	1963.59	18.00	86.50	0.002	0.013	42.77	42.62	52.40	52.50	43.48	43.31	8.92	8.13	2.43	**0.47**
PR-KR-P12	337-205 (P)	337-208 (P)	**915.93**	1686.95	18.00	242.10	0.001	0.013	43.08	42.77	52.20	52.40	43.86	43.48	8.34	7.62	2.17	**0.52**
PR-KR-P13	338-201 (P)	337-205 (P)	**915.93**	1765.17	18.00	328.10	0.001	0.013	43.64	43.18	51.50	52.20	44.40	43.86	7.10	6.36	2.25	**0.51**
PR-KR-P14	338-202 (P)	338-201 (P)	**549.31**	1758.49	18.00	265.90	0.001	0.013	44.11	43.74	51.00	51.50	44.69	44.40	6.31	5.39	1.96	**0.39**
PR-KR-P15	338-203 (P)	Kifer Lift Station	**549.31**	5132.80	12.00	28.20	0.088	0.012	32.18	29.70	51.00	49.00	32.65	29.92	18.35	17.82	9.50	**0.47**
PR-KR-P16	338-207 (P)	338-203 (P)	**549.31**	783.86	12.00	387.00	0.002	0.013	33.11	32.18	49.80	51.00	33.73	32.65	16.07	15.69	2.41	**0.62**
PR-KR-P17	338-209 (P)	338-207 (P)	**285.50**	828.11	12.00	324.40	0.003	0.013	34.08	33.21	49.60	49.80	34.49	33.73	15.11	14.52	2.13	**0.41**
PR-KR-P18	339-201 (P)	338-209 (P)	**246.06**	827.69	12.00	324.70	0.003	0.013	35.05	34.18	49.20	49.60	35.42	34.49	13.78	13.15	2.05	**0.37**
PR-KR-P19	339-202 (P)	339-201 (P)	**194.09**	825.91	12.00	326.10	0.003	0.013	36.02	35.15	47.60	49.20	36.35	35.42	11.25	10.58	1.91	**0.33**
PR-LE-P1	265-204 (P)	296-203 (P)	**4079.89**	10360.63	27.00	705.50	0.006	0.013	56.12	52.20	67.83	69.82	57.16	53.18	10.67	9.46	5.46	**0.46**
PR-LE-P2	296-203 (P)	296-202 (P)	**4079.89**	10316.94	27.00	526.40	0.006	0.013	52.20	49.30	69.82	61.19	53.24	50.77	16.58	15.37	5.44	**0.46**
PR-LE-P3	296-202 (P)	305-207 (P)	**7437.78**	9715.82	27.00	401.10	0.005	0.013	49.30	47.34	61.19	60.50	50.77	48.76	10.42	9.64	6.00	**0.65**
PR-LE-P4	305-207 (P)	305-208 (P)	**7437.78**	10306.34	27.00	141.90	0.005	0.013	47.34	46.56	60.50	58.98	48.76	47.98	11.74	10.91	6.29	**0.63**
PR-LE-P5	305-208 (P)	305-209 (P)	**7459.14**	10400.80	27.00	512.60	0.006	0.013	46.56	43.69	58.98	56.98	47.98	45.12	11.00	10.17	6.34	**0.63**
PR-LE-P6	305-209 (P)	336-202 (P)	**7480.50**	10208.66	27.00	324.40	0.005	0.013	43.69	41.94	56.98	57.04	45.12	43.53	11.86	11.04	6.25	**0.64**
PR-LE-P7	336-202 (P)	336-207 (P)	**9798.29**	17889.16	30.19	670.50	0.005	0.010	41.94	38.32	57.04	54.28	43.53	39.65	13.51	12.58	8.20	**0.63**
PR-SC-P1	306-201 (P)	306-202 (P)	**38.92**	982.15	10.00	300.70	0.010	0.013	56.78	53.78	64.90	62.40	56.91	53.95	7.99	7.29	1.95	**0.16**
PR-SC-P2	306-202 (P)	306-203 (P)	**56.77**	616.25	10.00	300.40	0.004	0.013	53.78	52.60	62.40	60.85	53.95	52.85	8.45	7.79	1.57	**0.20**
PR-SC-P3	306-203 (P)	306-204 (P)	**116.94**	595.86	10.00	299.60	0.004	0.013	52.60	51.50	60.85	60.80	52.85	51.77	8.00	7.42	1.89	**0.30**
PR-SC-P4	306-204 (P)	305-205 (P)	**137.81**	595.40	10.00	300.00	0.004	0.013	51.50	50.40	60.80	59.50	51.77	50.78	9.03	8.47	1.98	**0.32**
PR-SC-P5	305-205 (P)	305-204 (P)	**212.52**	507.29	10.00	300.60	0.003	0.013	50.40	49.60	59.50	59.40	50.78	49.95	8.72	8.27	1.98	**0.46**
PR-SZW-P1	305-206 (P)	305-204 (P)	**39.56**	707.09	10.00	173.20	0.003	0.010	50.13	49.60	60.20	59.40	50.26	49.95	9.94	9.24	1.56	**0.16**

Appendix D
Lawrence Station Area Plan
Sanitary Sewer - Peak Wet Weather Flow (PWWF) Hydraulics - Proposed System

Pipe [5] #	Upstream Node	Downstream Node	Total Flow (gpm)	Capacity @ Constructed Slope (gpm)	Pipe Size (inches)	Length (feet)	Constructed Slope (ft/ft)	Pipe Roughness (Mannings n)	Invert Elevation		Ground/Rim Elevation		HGL Elevation		Upstream Freeboard [2] (feet)	Upstream Cover (feet)	Velocity (ft/s)	d/D
									Upstream	Downstream	Upstream	Downstream	Upstream	Downstream				
PR-SZW-P2	305-204 (P)	305-203 (P)	**286.64**	833.08	10.00	41.80	0.007	0.013	49.60	49.30	59.40	59.60	49.95	49.72	9.45	8.97	3.09	**0.42**
PR-SZW-P3	305-203 (P)	305-202 (P)	**286.64**	568.20	10.00	209.60	0.003	0.013	49.30	48.60	59.60	59.80	49.72	48.98	9.88	9.47	2.33	**0.50**
PR-SZW-P4	305-202 (P)	305-201 (P)	**286.64**	662.80	10.00	321.40	0.005	0.013	48.60	47.14	59.80	59.70	48.98	47.49	10.82	10.37	2.61	**0.46**
PR-SZW-P5	305-201 (P)	336-201 (P)	**330.43**	1148.49	11.54	324.50	0.004	0.010	47.04	45.82	59.70	57.50	47.40	46.69	12.30	11.70	3.04	**0.37**
PR-UD-P1	302-201 (P)	302-202 (P)	**89.02**	563.74	10.00	234.30	0.003	0.013	38.89	38.12	50.00	49.00	39.11	38.40	10.89	10.28	1.68	**0.26**
PR-UD-P2	302-202 (P)	302-203 (P)	**142.12**	567.61	10.00	306.10	0.003	0.013	38.12	37.10	49.00	47.50	38.40	37.44	10.60	10.05	1.93	**0.34**
PR-UD-P3	302-203 (P)	339-203 (P)	**194.09**	566.91	10.00	294.90	0.003	0.013	37.10	36.12	47.50	47.60	37.44	36.41	10.06	9.57	2.10	**0.41**
PR-UD-P4	339-203 (P)	339-202 (P)	**194.09**	975.12	10.00	10.20	0.010	0.013	36.12	36.02	47.60	47.60	36.41	36.35	11.19	10.65	3.11	**0.35**
PR-WA-P1	266-210 (P)	266-204 (P)	**26.51**	342.80	8.00	245.30	0.004	0.013	56.27	55.29	68.00	67.00	56.40	55.41	11.60	11.06	1.30	**0.19**
PR-WA-P2	266-204 (P)	266-205 (P)	**26.51**	628.19	10.00	61.30	0.004	0.013	55.29	55.04	67.00	66.00	55.41	55.17	11.59	10.88	1.27	**0.14**
PR-WA-P3	266-205 (P)	265-206 (P)	**31.81**	622.28	10.00	299.60	0.004	0.013	55.04	53.84	66.00	65.00	55.17	54.01	10.83	10.13	1.33	**0.16**
PR-WA-P4	265-206 (P)	296-207 (P)	**56.42**	617.62	10.00	114.10	0.004	0.013	53.84	53.39	65.00	62.50	54.01	53.56	10.99	10.33	1.57	**0.20**
PR-WA-P5	296-207 (P)	296-213 (P)	**61.08**	634.18	10.00	36.10	0.004	0.013	53.39	53.24	62.50	61.40	53.56	53.42	8.94	8.28	1.64	**0.20**
PR-WA-P6	296-213 (P)	296-208 (P)	**61.08**	620.91	10.00	326.10	0.004	0.013	53.24	51.94	61.40	63.60	53.42	52.83	7.98	7.33	1.61	**0.22**
PR-WA-P7	296-208 (P)	296-209 (P)	**61.08**	3466.83	17.20	34.30	0.004	0.010	51.94	51.80	63.60	63.00	52.83	52.83	10.77	10.23	1.82	**0.62**
PR-WA-P8	296-209 (P)	296-201 (P)	**3357.89**	6431.76	24.00	309.00	0.004	0.013	51.80	50.56	63.00	62.00	52.83	51.59	10.17	9.20	4.61	**0.52**
PR-WA-P9	296-201 (P)	296-202 (P)	**3357.89**	6424.85	24.00	314.70	0.004	0.013	50.56	49.30	62.00	61.19	51.59	50.77	10.41	9.44	4.61	**0.52**

Note:
The system accounts for flows from the overall LSAP area including the existing areas to remain for the proposed housing expansion scenario.

APPENDIX E

Potable Water System Demand Calculations

LSAP Housing Expansion Study

Lot[3]	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
3	--	--	96,000	--	--	20,160	14.00
4	--	154,540	--	--	--	31,217	21.68
5	--	602,173	--	--	--	121,639	84.47
6	--	--	--	--	--	--	--
7	520	7,400	--	--	--	83,863	58.24
8	262	2,500	--	--	--	42,006	29.17
9	320	2,500	--	--	--	51,193	35.55
10	125	--	--	--	--	19,800	13.75
11	--	--	19,990	--	--	4,198	2.92
12	--	--	19,512	--	--	4,098	2.85
13	--	--	16,830	--	--	3,534	2.45
14	130	--	--	--	--	20,592	14.30
15	111	--	--	--	--	17,582	12.21
16	--	--	11,055	--	--	2,322	1.61
17	168	--	--	--	--	26,611	18.48
18	--	--	19,463	--	--	4,087	2.84
19	109	--	--	--	--	17,266	11.99
20	126	1,000	--	--	--	20,160	14.00
21	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--
25	741	1,500	--	--	--	117,677	81.72
26	16	--	--	--	--	2,534	1.76
27	16	--	--	--	--	--	--
28	83	2,000	--	--	--	13,551	9.41
29	18	2,000	--	--	--	3,255	2.26
30	52	2,000	--	--	--	8,641	6.00
31	13	1,000	--	--	--	2,261	1.57
32	--	8,156	--	--	--	1,648	1.14
33	--	--	--	7,800	--	4,680	3.25
34	--	136,438	--	--	--	27,560	19.14
35	--	152,758	--	--	--	30,857	21.43
36	--	--	61,758	--	--	12,969	9.01
37	--	--	147,842	--	--	31,047	21.56
38	--	136,409	39,148	--	--	35,776	24.84
39	1,458	--	--	--	--	230,947	160.38
40	634	--	--	--	--	100,426	69.74
41	338	--	--	--	--	53,539	37.18
42	--	--	78,000	--	--	16,380	11.38
43	383	--	--	--	--	60,667	42.13
44	--	--	--	--	--	--	--
45	--	--	105,000	--	--	22,050	15.31

Appendix E
Lawrence Station Area Plan
Potable Water System Demand Calculations

Lot[3]	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
46	--	--	--	--	--	--	--
47	328	--	--	--	--	51,955	36.08
48	--	--	--	--	--	--	--
49	--	--	--	--	159,637	532	0.37
50	--	--	--	--	--	--	--
51	--	--	--	--	--	--	--
52	--	--	--	--	--	--	--
Subtotal	5,935	1,212,374	614,598	7,800	159,637	1,319,281	916.17

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	LPW (GPD)	LPW (GPM)
1 & 2	--	351,000	--	13,000	--	78,702	54.65
53	--	--	831,000	16,000	--	184,110	127.85
Subtotal	--	351,000	831,000	29,000	--	262,812	182.51

Note:

1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.
2. Residential units within Lot 27 existed prior to the LSAP and have not been included within the total residential numbers.
3. Lots 11, 12, 13, 16, 18, 35, 36, 37, 42, and 45 are existing parcels within the LSAP area expected to remain.

Abbreviations:

Symbol	Description
GPD	gallons per day
GPM	gallons per minute
LPW	low pressure water
sf	square footage

APPENDIX F

Sanitary Sewer System Demand Calculations

LSAP Housing Expansion Study

Lot[3]	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
3	--	--	96,000	--	--	19,152	13.30	39.90	48.55
4	--	154,540	--	--	--	19,086	13.25	39.76	48.38
5	--	602,173	--	--	--	74,368	51.64	129.11	162.68
6	--	--	--	--	--	--	--	--	--
7	520	7,400	--	--	--	60,688	42.14	115.90	143.29
8	262	2,500	--	--	--	30,426	21.13	63.39	77.12
9	320	2,500	--	--	--	37,093	25.76	70.84	87.58
10	125	--	--	--	--	14,369	9.98	32.43	38.92
11	--	--	19,990	--	--	3,988	2.77	9.69	11.49
12	--	--	19,512	--	--	3,893	2.70	9.46	11.22
13	--	--	16,830	--	--	3,358	2.33	8.16	9.68
14	130	--	--	--	--	14,944	10.38	33.73	40.47
15	111	--	--	--	--	12,759	8.86	28.80	34.56
16	--	--	11,055	--	--	2,205	1.53	5.36	6.36
17	168	--	--	--	--	19,312	13.41	40.23	48.95
18	--	--	19,463	--	--	3,883	2.70	9.44	11.19
19	109	--	--	--	--	12,530	8.70	28.28	33.93
20	126	1,000	--	--	--	14,607	10.14	32.97	39.56
21	--	--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--	--
25	741	1,500	--	--	--	85,363	59.28	148.20	186.73
26	16	--	--	--	--	1,839	1.28	4.47	5.30
27	16	--	--	--	--	--	--	--	--
28	83	2,000	--	--	--	9,788	6.80	22.09	26.51
29	18	2,000	--	--	--	2,316	1.61	5.63	6.67
30	52	2,000	--	--	--	6,224	4.32	15.13	17.94
31	13	1,000	--	--	--	1,618	1.12	3.93	4.66
32	--	8,156	--	--	--	1,007	0.70	2.45	2.90
33	--	--	--	7,800	--	4,446	3.09	10.81	12.81
34	--	136,438	--	--	--	16,850	11.70	35.10	42.71
35	--	152,758	--	--	--	18,866	13.10	39.30	47.82
36	--	--	61,758	--	--	12,321	8.56	27.81	33.37
37	--	--	147,842	--	--	29,494	20.48	61.45	74.76
38	--	136,409	39,148	--	--	24,657	17.12	51.37	62.50
39	1,458	--	--	--	--	167,597	116.39	290.97	366.62
40	634	--	--	--	--	72,878	50.61	139.18	172.07
41	338	--	--	--	--	38,853	26.98	74.20	91.74

Appendix F
Lawrence Station Area Plan
Sanitary Sewer System Demand Calculations

Lot[3]	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
42	--	--	78,000	--	--	15,561	10.81	32.42	39.44
43	383	--	--	--	--	44,026	30.57	84.08	103.95
44	--	--	--	--	--	--	--	--	--
45	--	--	105,000	--	--	20,948	14.55	43.64	53.10
46	--	--	--	--	--	--	--	--	--
47	328	--	--	--	--	37,704	26.18	72.00	89.02
48	--	--	--	--	--	--	--	--	--
49	--	--	--	--	159,637	506	0.35	1.23	1.46
50	--	--	--	--	--	--	--	--	--
51	--	--	--	--	--	--	--	--	--
52	--	--	--	--	--	--	--	--	--
Subtotal	5,935	1,212,374	614,598	7,800	159,637	959,520	666.33	1,862.89	2,296.00

LSAP Office Expansion Study

Lot	Residential Units	Commercial/Office/ Retail (sf)	Industrial (sf)	Restaurant (sf)	Storage Facility (sf)	SS (GPD)	SS (GPM)	SS PDWF (GPM)	SS PWWF (GPM)
1 & 2	--	351,000	--	13,000	--	50,759	35.25	96.93	119.85
53	--	--	831,000	16,000	--	174,905	121.46	303.65	382.60
Subtotal	--	351,000	831,000	29,000	--	225,663	156.71	400.59	502.45

Note:
1. The square footage numbers provided in these tables represent project buildout numbers including nonresidential buildings expected to remain.
2. Residential units within Lot 27 existed prior to the LSAP and have not been included within the total residential numbers.
3. Lots 11, 12, 13, 16, 18, 35, 36, 37, 42, and 45 are existing parcels within the LSAP area expected to remain.

Abbreviations:

Symbol	Description
GPD	gallons per day
GPM	gallons per minute
LPW	low pressure water
PDWF	peak dry weather flow
PWWF	peak wet weather flow
sf	square footage

APPENDIX G

Cost Estimate for City Sanitary Sewer System Recommendations

BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, California 94065

APPENDIX G
ESTIMATE OF CONSTRUCTION
COSTS FOR CITY SANITARY SEWER UPGRADES

LAWRENCE EXPRESSWAY SANITARY SEWER IMPROVEMENTS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT COST[5]**	**TOTAL COST**
1	Replace existing 27" VCP main with proposed 30" PVC SS main	671	LF	$2,000.00	$1,342,000
				LAWRENCE EXPRESSWAY SUBTOTAL	**$1,342,000**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF LAWRENCE EXPRESSWAY SUBTOTAL)			
ITEM	**DESCRIPTION**	**QUANTITY**	**TOTAL COST**
1	Construction Fees	25%	$335,500
2	Design Fees	20%	$268,400
3	Inspection Fees	10%	$134,200
4	Miscellaneous Costs	5%	$67,100
5	City Administration Fees	5%	$67,100
		ADDITIONAL COSTS SUBTOTAL	**$872,300**
		LAWRENCE EXPRESSWAY TOTAL	**$2,214,300**

SAN ZENO WAY SANITARY SEWER IMPROVEMENTS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT COST**	**TOTAL COST**
1	Replace existing 10" VCP main with proposed 12" PVC SS main	324	LF	$700.00	$226,800
				SAN ZENO WAY SUBTOTAL	**$226,800**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF SAN ZENO WAY SUBTOTAL)			
ITEM	**DESCRIPTION**	**QUANTITY**	**TOTAL COST**
1	Construction Fees	25%	$56,700
2	Design Fees	20%	$45,360
3	Inspection Fees	10%	$22,680
4	Miscellaneous Costs	5%	$11,340
5	City Administration Fees	5%	$11,340
		ADDITIONAL COSTS SUBTOTAL	**$147,420**
		SAN ZENO WAY TOTAL	**$374,220**

WILLOW AVENUE SANITARY SEWER IMPROVEMENTS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT COST**	**TOTAL COST**
1	Replace existing 10" VCP main with proposed 18" PVC SS main	69	LF	$900.00	$62,100
				WILLOW AVENUE SUBTOTAL	**$62,100**

ADDITIONAL PROJECT COSTS (PERCENTAGE OF WILLOW AVENUE SUBTOTAL)			
ITEM	**DESCRIPTION**	**QUANTITY**	**TOTAL COST**
1	Construction Fees	25%	$15,525
2	Design Fees	20%	$12,420
3	Inspection Fees	10%	$6,210
4	Miscellaneous Costs	5%	$3,105
5	City Administration Fees	5%	$3,105
		ADDITIONAL COSTS SUBTOTAL	**$40,365**
		WILLOW AVENUE TOTAL	**$102,465**

LSAP HOUSING TOTAL	**$2,690,985**

Abbreviations:

Symbol	Description
PVC	polyvinyl chloride
VCP	vitrified clay pipe

Notes:

1. For location of Sanitary Sewer improvements, refer to Figure 3.3 - LSAP Proposed Sanitary Sewer Pipe Sizing.
2. This cost estimate does not include the costs associated with the installation of intermediary manholes for segments of sanitary sewer main that violate City requirements for running length of sewer mains between manholes.
3. Unit cost values are derived from 2019 Downtown Specific Plan Amendments Utility Impact Study.
4. Unit cost for the sewer main upgrades includes cost for mobilization, demobilization, traffic control, shoring, trenching, manholes, laterals, bypass pumping, offhaul, and disposal.
5. Unit cost for sewer main upgrade within Lawrence Expressway has been adjusted to account higher anticipated costs for increased pavement thickness, expressway traffic control, bypass pumping, and tunneling in addition to the costs listed in Note 4.
6. This cost estimate is approximate and may not be representative of actual construction costs.

BKF Job No.: 20180080
Estimate Date: 05/19/2020