November 8, 2018 | Public Review Draft Initial Study

The Cupertino Village Hotel Project

for the City of Cupertino

Image Credit: Hornberger + Worstell, July 27, 2018.

Prepared By:

PlaceWorks
1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815
510.848.4315 (f)

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1. Introduction

This document is an Initial Study for the Cupertino Village Hotel Project (“proposed project”) prepared by the City of Cupertino (City) to determine if the proposed project may have a significant effect on the environment as defined in the California Environmental Quality Act (CEQA) (Public Resources Code sections 21000 et seq.). Pursuant to section 15051 of the State CEQA Guidelines, the City is the Lead Agency for the proposed project.

The project site is located on a 1.72-acre site at 10765 - 10801 North Wolfe Road, which is currently developed with an existing restaurant building, Duke of Edinburgh Pub and Restaurant, and a vacant commercial building. The proposed project would involve demolishing the two commercial buildings and constructing a new 185-room boutique hotel including event meeting rooms and a restaurant. The project site is assigned Assessor’s Parcel Number (APN) 316-45-017 and is currently zoned Planned Development with General Commercial and Residential (P(CG, Res)) and located within the Commercial/Residential General Plan land use designation. Under the current zoning and land use designations, the permitted maximum height is 60 feet. The proposed project would require an amendment to the General Plan to increase the hotel room development allocation to 185 hotel rooms in the North Vallco Area to allow for the construction and operation of the proposed hotel.

1.1 INITIAL STUDY

Pursuant to Section 15063 of the CEQA Guidelines,[1] an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining what form of environmental review is required for a project. The CEQA Guidelines require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project’s consistency with existing and applicable land use controls, and the name of persons who prepared the study.

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects that implement the program. This Initial Study incorporates by reference the discussions in the City’s General Plan Amendment, Housing Element Update, and associated Rezoning Project Environmental Impact Report (EIR) that was certified by the Cupertino City Council in December 2014,[2] the addendum to that

[1] The CEQA Guidelines are found in California Code of Regulations, Title, 14, Section 15000 *et seq*.

[2] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014.

EIR that was approved by the City Council in October 2015,[3] together hereinafter "General Plan EIR," and the Vallco Special Area Specific Plan EIR, hereinafter "Vallco Specific Plan EIR" that was certified by the Cupertino City Council in September 2018.[4] The analysis in this Initial Study concentrates on project-specific issues of the Cupertino Village Hotel project. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered document by eliminating repetitive analyses of issues that were adequately addressed in the program EIRs and by incorporating those analyses by reference.

All documents cited in this report and used in its preparation are hereby incorporated by reference into this Initial Study. Copies of documents referenced herein are available for review at the City of Cupertino Community Development Department at 10300 Torre Avenue, Cupertino, California 95014.

1.2 REPORT ORGANIZATION

This Initial Study is organized into the following chapters:

Chapter 1: Introduction. This chapter provides an introduction and overview of the Initial Study document.

Chapter 2: Initial Study Checklist. This chapter summarizes pertinent details for the proposed project, including lead agency contact information, proposed project location, and General Plan and Zoning designations.

Chapter 3: Project Description. This chapter describes the location and setting of the proposed project, along with its principal components, as well as a description of the policy setting and implementation process for the proposed project.

Chapter 4: Environmental Analysis. Making use of the CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, this chapter identifies and discusses anticipated impacts from the proposed project, providing substantiation of the findings made.

Chapter 5: Mitigation Monitoring and Reporting Program. This chapter lists the impacts found to be significant and identifies the recommended mitigation measures categorized by impact area.

Chapter 6: Organizations and Persons Consulted. This chapter presents a list of City and other agencies and consultant team members that contributed to the preparation of the Initial Study.

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[3] City of Cupertino, approved General Plan Amendment, Housing Element Update, and Associated Rezoning EIR Final Addendum, State Clearinghouse Number 2014032007. December 4, 2014.

[4] City of Cupertino, certified Vallco Special Area Specific Plan EIR, State Clearinghouse Number 2018022021. September 19, 2018.

2. *Initial Study Checklist*

1.	Project Title:	The Cupertino Village Hotel Project
2.	Lead Agency Name and Address:	City of Cupertino Community Development Department 10300 Torre Avenue Cupertino, CA 95014
3.	Contact Person and Phone Number:	Erick Serrano Associate Planner 408-777-3205
4.	Location:	10765-10801 North Wolfe Road Cupertino, CA 95014
5.	Applicant's Name and Address:	Kimco Realty Corporation 15 Southgate Avenue, Suite 201 Daly City, CA 94015
6.	General Plan Land Use Designations:	Commercial / Residential
7.	Zoning:	Planned Development with General Commercial and Residential P(CG/RES)
8.	Description of Project:	See Chapter 3, Project Description
9.	Surrounding Land Uses and Setting:	See page 3-6 of Chapter 3, Project Description
10.	Other Required Approvals:	See page 3-34 of Chapter 3, Project Description

11. **Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?:** The City has not received any request from any Tribes in the geographic area with which they are traditionally and culturally affiliated with or otherwise to be notified about projects in Cupertino.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a Potentially Significant Impact, as shown in Chapter 4 of this Initial Study.

❐ Aesthetics	❐ Agriculture & Forestry Resources	❐ Air Quality
❐ Biological Resources	❐ Cultural Resources	❐ Tribal Cultural Resources
❐ Geology & Soils	❐ Greenhouse Gas Emissions	❐ Hazards & Hazardous Materials
❐ Hydrology & Water Quality	❐ Land Use & Planning	❐ Mineral Resources
❐ Noise	❐ Population & Housing	❐ Public Services
❐ Parks & Recreation	❐ Transportation & Circulation	❐ Utilities & Service Systems
❐ Mandatory Findings of Significance		

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Approved by:____________________________________ ____________________

Aarti Shrivastava, Date

Community Development Director/Assistant City Manager

City of Cupertino Community Development Department

3. Project Description

Kimco Realty, the project applicant, is proposing the Cupertino Village Hotel Project (“proposed project”) that would involve the construction of a boutique hotel on a 1.72-acre site. The site is currently developed with two commercial buildings, one of which is occupied. The proposed project would involve demolishing the existing commercial buildings and redeveloping the site with a new 185-room boutique hotel, including event meeting rooms and a restaurant. The proposed project would establish a five-story hotel with below-grade parking.

This chapter provides a detailed description of the proposed project, including the location, setting, and characteristics of the project site, the principal project features, construction phasing and schedule, as well as a list of the required permits and approvals.

3.1 PROJECT LOCATION AND SITE CHARACTERISTICS

3.1.1 REGIONAL LOCATION

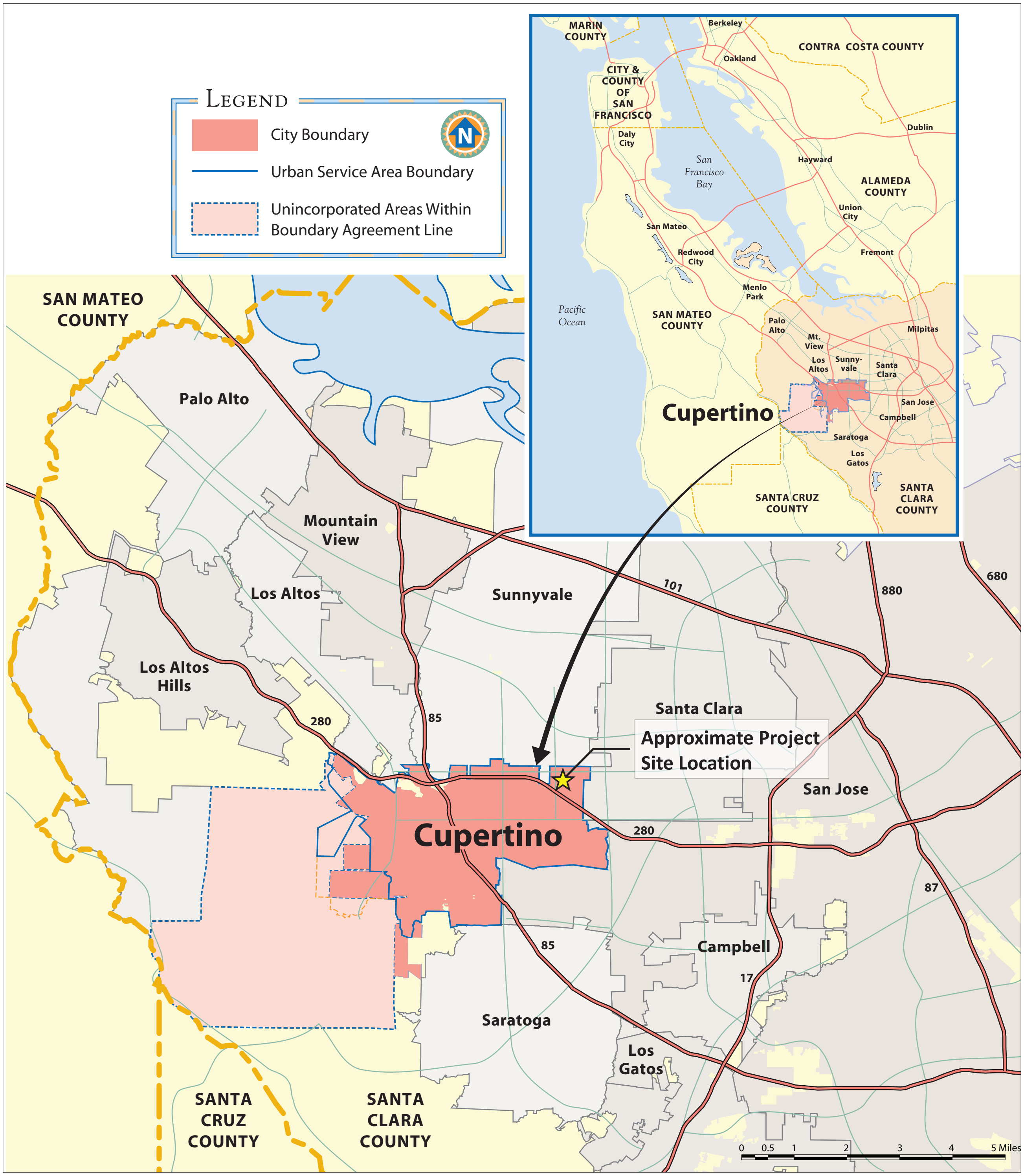
As shown on Figure 3-1, the project site is located in Cupertino, which is in the northwestern portion of Santa Clara County. Cupertino is roughly 45 miles south of San Francisco and 10 miles west of downtown San Jose. Interstate 280 (I-280) provides regional access to the project site.

3.1.2 LOCAL SETTING

The project site is located at 10765 - 10801 North Wolfe Road in the northeast region of the city. The site is at the southeast corner of the Cupertino Village Shopping Center (“Cupertino Village”), which has cafes and restaurants for nearby workers and serves as a village center for the residential uses in this area. As shown on Figure 3-2, the project site is bounded by Cupertino Village buildings and parking lots to the north, North Wolfe Road to the east, Pruneridge Avenue to the south, and Arioso Apartments to the west.

As shown on Figure 3-2, the location of the site is within 0.5 miles of employment centers, including Cupertino Village and the new, completed Apple Park (formerly Apply Campus 2). Portal Park is located approximately 1 mile to the southwest, Jenny Strand Park is located approximately 0.75 miles to the southeast, and Westwood Oaks Park is located approximately 0.5 miles to the east of the site. Cupertino High School and Sedgwick Elementary School in the Cupertino Union School District are approximately 1.5 miles to the south, while Laurelwood Elementary School in the Santa Clara Unified School District is located approximately 1.5 miles to the northeast in the City of Santa Clara.

PROJECT DESCRIPTION



Source: City of Cupertino General Plan.

Figure 3-1
Regional and Vicinity Map

PROJECT DESCRIPTION

Source: Google Earth Professional, 2016; PlaceWorks, 2018.

Project Site

Figure 3-2
Aerial View of Project Site and Surroundings

3.1.3 EXISTING SITE CHARACTER

As shown on Figure 3-3, the site is currently developed with two commercial buildings: an occupied 3,385-square-foot building that is currently occupied by the Duke of Edinburgh Pub and Restaurant, and a vacant 10,044-square-foot commercial building. The site also contains parking and ornamental landscaping for the existing commercial spaces, including numerous trees. A recent tree inventory and assessment evaluated 68 trees on the site that represent 11 species. Although several trees were newly planted, most of the trees on the project site are mature. [5] All trees on the project site are protected trees under the City's Municipal Code. While coast redwood is native to California, no trees of this species are indigenous to the project site (i.e., they were planted during the landscaping of the site with the prior development.[6]

Using data from the Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG)[7] habitat mapping program, the site is classified as an "urban area" that tends to have low to poor wildlife habitat value due to replacement of natural communities, fragmentation of remaining open space areas and parks, and intensive human disturbance.

The site is generally flat with elevation of 170 feet above mean sea level.[8] The surficial geology is young, unconsolidated Quaternary alluvium,[9] which is described as Holocene-age younger alluvium and coarse-grained alluvium that are composed of unconsolidated, poorly sorted gravel, silt, sand, clay, and organic matter.

Stormwater from the site would drain to a network of City-maintained storm drains that collect runoff from city streets and carry it to the creeks that run through Cupertino to the San Francisco Bay.

Surrounding uses include one-story and two-story commercial buildings in the Cupertino Village and parking lots to the north, the new four-story (72 feet) Apple Park and existing three-story (up to 45 feet) Hamptons Apartment complex to the east across North Wolfe Road, the three-story (approximately 45 feet) Arioso Apartments to the west, and a five-story (45 feet) Hilton Garden Inn.

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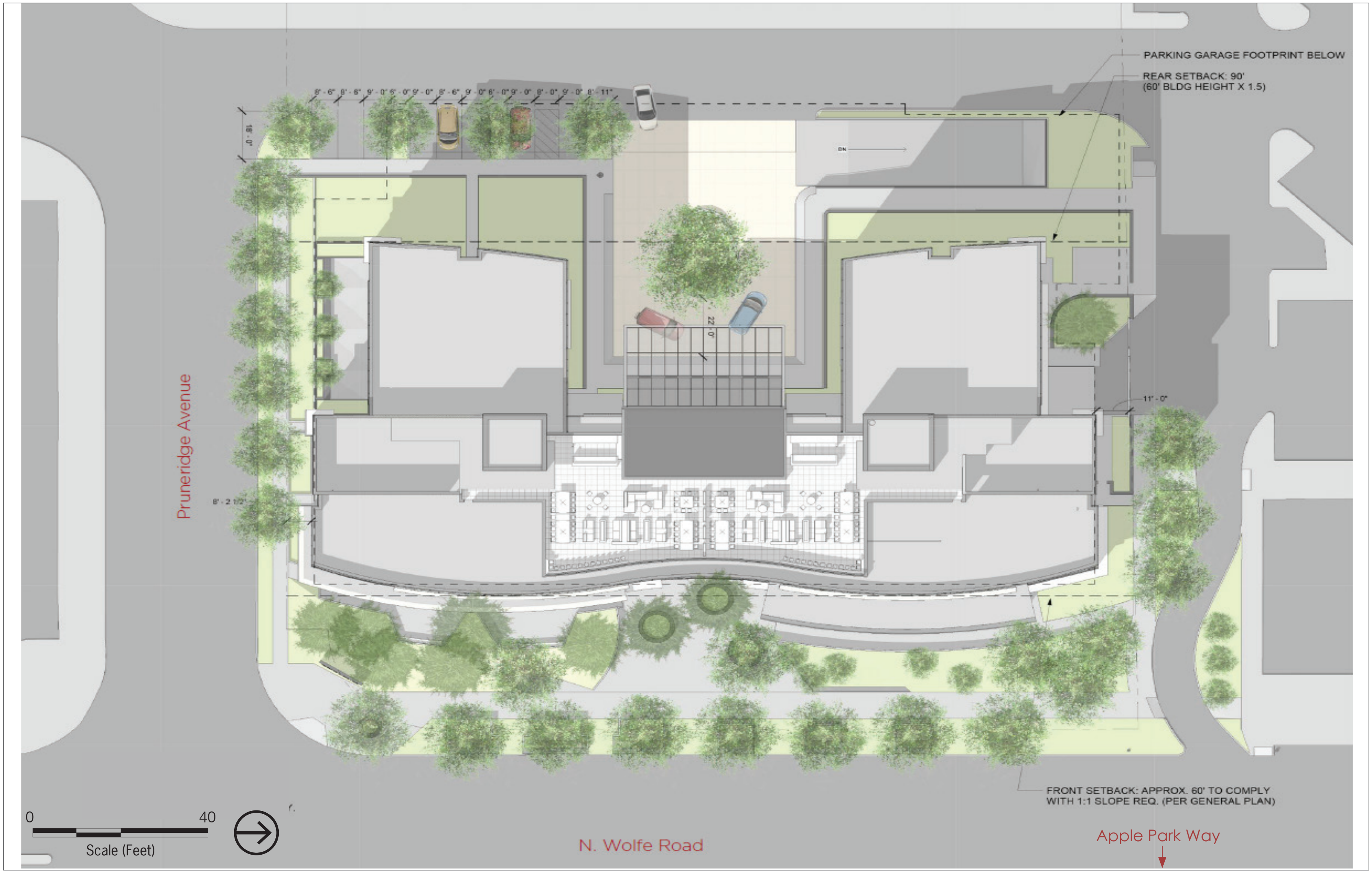
[5] Cupertino Village Boutique Hotel Site Tree Inventory & Assessment, prepared for the Kimco Realty Corporation by Arborwell. November 27, 2017.

[6] City of Cupertino Municipal Code (section 14.18.050) defines "Protected" trees. See section 1.1.4.2, Zoning, of this chapter for a summary of the City's tree protection ordinance.

[7] The CALVEG system was initiated in January 1978 by the Region 5 Ecology Group of the US Forest Service to classify California's existing vegetation communities for use in statewide resource planning. CALVEG maps use a hierarchical classification on the following categories: forest; woodland; chaparral; shrubs; and herbaceous.

[8] Northgate Environmental Management, 2017, Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

[9] US Geological Survey, 1994, Preliminary Quaternary Geologic Maps of Santa Clara Valley, Santa Clara, Alameda, and San Mateo Counties, California: A Digital Database, Open-File Report 94-231, by E.J. Helley, R.W. Graymer, G.A. Phelps, P.K. Showalter, and C.M. Wentworth.



Source: Hornberger + Worstell, July 27, 2018.

Figure 3-4
Conceptual Site Plan

3.1.4 LAND USE DESIGNATION AND ZONING

GENERAL PLAN

The project site is assigned Assessor's Parcel Number (APN) 316-45-017. In addition to the General Plan land use designation, the project site is located in a special planning area and designated gateway within the city. A description of the applicable General Plan policies and permitted development in these areas and designations is provided below.

Planning Area and Gateway

Under the adopted General Plan, the site is located in the North Vallco Gateway, which is within the North Vallco Park Special Area. As described in the General Plan, the North Vallco Park Special Area encompasses 240 acres and is an important employment center for Cupertino and the region allowing a mix of residential, commercial, office, and hotel uses along North Wolfe Road between I-280 and Homestead Road.[10] Amongst other commercial and residential development, there are two existing hotels in the North Vallco Gateway. The General Plan states that the North Vallco Park Special Area is envisioned to become a sustainable, office and campus environment surrounded by a mix of connected, high-quality, pedestrian-oriented retail, hotels, and residential uses.

Building Height

Building height affects the city's appearance and identity, particularly in the pedestrian-scaled areas. By regulating building heights, the City can protect view corridors, regulate building scale, and ensure consistency and compatibility within an area or along a street. As shown on the Community Form Diagram in the General Plan, the project site is located west of North Wolfe Road and a maximum building height of 60 feet is allowed at this location.[11]

Land Use Designation

The General Plan land use designation for the project site is Commercial/Residential. This land use designation allows primarily commercial uses and secondarily residential uses or a compatible combination of the two.[12] Commercial use means retail sales, businesses, limited professional offices, and service establishments with direct contact with customers. This applies to commercial activities ranging from neighborhood convenience stores to regionally oriented specialty stores. Retail stores that would be a nuisance for adjoining neighborhoods or harmful to the community identity would be regulated by the Commercial Zoning Ordinance and use permit procedure. Smaller commercial parcels in existing residential areas may be needed to provide local neighborhood serving retail; otherwise, they may be

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[10] City of Cupertino General Plan (Community Vision 2015-2040), Chapter 2, Planning Areas, page PA-9.
[11] City of Cupertino General Plan (Community Vision 2015-2040), Chapter 3, Land Use and Community Design, page LU-18.
[12] City of Cupertino General Plan (Community Vision 2015-2040), Appendix A: Land use definitions, Planning Areas, page A-4.

redeveloped at residential densities compatible with the surroundings. Residential development is subject to the numerical caps and other policies described in the development priorities tables.

ZONING

Zoning District

The project site is within the Planned Development with General Commercial and Residential uses (P(CG,Res)) zoning district. As described in Cupertino Municipal Code (CMC) Section 19.80.010,[13] the Planned Development zoning district is intended to provide a means of guiding land development or redevelopment of the city that is uniquely suited for planned coordination of land uses. Development in this zoning district provides for a greater flexibility of land use intensity and design because of accessibility, ownership patterns, topographical considerations, and community design objectives. This zoning district is intended to accomplish the following:

- Encourage variety in the development pattern of the community.
- Promote a more desirable living environment.
- Encourage creative approaches in land development.
- Provide a means of reducing the amount of improvements required in development through better design and land planning.
- Conserve natural features.
- Facilitate a more aesthetic and efficient use of open spaces.
- Encourage the creation of public or private common open space.

All Planned Development districts are identified on the zoning map with the letter coding "P" followed by a specific reference to the general type of use allowed in the particular planning development zoning district. The general type of use allowed on the project site is General Commercial (CG) and Residential (Res). The General Commercial Ordinance allows hotel uses as a permitted/conditional use.

Setbacks

The project site does not require specific front, side, or rear yard setbacks unless the lot abuts any residential or agricultural zones. The project site must still adhere to the General Plan requirement of maintaining the primary bulk of the building behind a 1:1 slope line from the face of the curb along North Wolfe Road, the requirement for sufficient space for adequate light, requirement for air and visibility at intersections, and the requirement for general conformity to yard requirements of adjacent or nearby zones, lot or parcels.

[13] City of Cupertino Municipal Code, Title 19, Zoning, Chapter 19.80, Planned Development, section 19.80.010, Purpose.

Landscaping

Landscape Ordinance

CMC Chapter 14.15, Landscape Ordinance, implements the California Water Conservation in Landscaping Act of 2006 by establishing new water-efficient landscaping and irrigation requirements. In general, any building or landscape project that involves more than 2,500 square feet of landscape area is required to submit a Landscape Project Submittal to the Director of Community Development for approval. Existing and established landscaped areas over 1 acre, including cemeteries, are required to submit water budget calculations and audits of established landscapes.[14]

Protected Tree Ordinance

CMC Chapter 14.18, Protected Tree Ordinance, provides regulations for the protection, preservation, and maintenance of trees of certain species and sizes.[15] Removal of a protected tree requires a permit from the City. "Protected" trees include trees of a certain species and size in all zoning districts; heritage trees in all zoning districts; any tree required to be planted or retained as part of an approved development application, building permit, tree removal permit, or code enforcement action in all zoning districts; and approved privacy protection planting in single-family residential (R-1) zoning districts.

Utilities and Energy

The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations) to apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in the code, throughout the State of California. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation requiring new buildings to reduce water consumption by 20 percent, material conservation, and internal air contaminants. The local building permit process enforces the building efficiency standards. CMC Chapter 16.58, Green Building Standards Code Adopted, includes the CALGreen requirements with local amendments for projects in the city. The City's Green Building Ordinance codifies green building techniques, including measures affecting water use efficiency and water conservation. CMC Sections 16.58.100 through 16.58.220 sets forth the standards for green building requirements by type of building. As shown on Table 101.10 in CMC Section 16.58.220, non-residential new construction exceeding 50,000 square feet is required to be Silver in Energy & Environmental Design (LEED).[16] CMC Section 16.58.230 permits applicants to apply an alternate

[14] City of Cupertino Municipal Code, Title 14, Streets, Sidewalks and Landscaping, Chapter 14.15, Landscape Ordinance.
[15] City of Cupertino Municipal Code, Title 14, Streets, Sidewalks and Landscaping, Chapter 14.18, Protected Trees.
[16] Leadership in Energy & Environmental Design (LEED) is a green building certification program that recognizes best-in-class building strategies and practices that reduce consumption energy, and water, and reduce solid waste directly diverted to landfills. LEED certified buildings are ranked in order of efficiency from Certified, Silver, Gold and Platinum being the highest ranking with the greatest efficiency standard. LEED Silver certified buildings typically reduce is the third highest ranking out of the four, with just being certified being the lowest and Gold and Platinum being the second highest.

green building standard for a project in lieu of the minimum standards outlined in CMC Section 16.58.220 that meet the same intent of conserving resources and reducing solid waste. Consistent with CALGreen CMC Chapter 16.72, Recycling and Division of Construction and Demolition Waste, requires that a minimum of 65 percent of all non-hazardous construction and demolition debris must be recycled or salvaged and that all applicants have a waste management plan for on-site sorting of construction debris. Additionally, in December 2017, the City adopted a Zero Waste Policy.[17] According to the Zero Waste Policy, the City will require, through the City's waste hauling franchise agreement, steadfast and ongoing efforts by the City's franchisee to maintain a minimum residential and commercial waste diversion rate of 75 percent with a goal of reaching and maintaining 80 percent by 2025.

CMC Chapter 9.18, Storm Water Pollution Prevention and Watershed Protection, provides regulations and gives legal effect to the Municipal Regional Storm Water National Pollutant Discharge Elimination System (NPDES) Permit (MRP) issued to the City. This chapter also ensures ongoing compliance with the most recent version of the City's MRP regarding municipal storm water and urban runoff requirements. This chapter applies to all water entering the storm drain system generated on any private, public, developed, and undeveloped lands within the city. The CMC contains permit requirements for construction projects and new development or redevelopment projects to minimize the discharge of storm water runoff.

3.2 PROJECT COMPONENTS

The proposed project would redevelop the project site with a five-story hotel with up to 185 guest rooms and amenities including a restaurant, event meeting rooms, and fitness facilities. Table 3-1 shows a breakdown of the project components by square footage.

TABLE 3-1 PROPOSED HOTEL COMPONENTS

Level	Guest Room Area	Circulation Area[a]	Back of House Area[b]	Restaurant/ Meeting Rooms/ Fitness Room Area	Mechanical Equipment Area	Total Net Area[d]	Total Gross Area[e]
Level 1	0	7,322	5,674	9,696[c]	1,595	**24,287**	**26,160**
Level 2	12,418	3,695	3,603	1,314	1,701	**22,730**	**24,968**
Level 3	18,066	3,894	477	0	349	**22,786**	**24,968**
Level 4	18,058	3,896	480	0	350	**22,784**	**24,968**
Level 5	18,064	3,895	480	0	352	**22,791**	**24,968**
Parking Level 1	--	--	--	-	--	**41,098**	**42,265**
Parking Level 2	--	--	--	-	--	**41,269**	**42,323**
Total Use Area	*66,606*	*22,702*	*10,714*	*11,010*	*4,347*	--	--
Grand Total	**--**	**--**	**--**	**--**	**--**	***197,745***	***210,621***

a. Circulation: hallways and other areas for staff and guest movement in the hotel. Level 1 includes a 3,669-square-foot lobby and 306 square feet for administration.
b. Back-of-house uses include the area of the hotel that is for staff services only.
c. Level 1 (ground level) includes the 4,008-square-foot restaurant and meeting rooms totaling 5,688 square feet.
d. The net area is the actual useable area measured to the inside face of the wall within each room.
e. The gross area is the full footprint of the building to the outside face of the exterior wall.
Source: Kimco Realty Corporation (project applicant), Planning Submittal, July 27, 2018.

[17] City of Cupertino, Public Works, Garbage & Recycling, https://www.cupertino.org/our-city/departments/environment-sustainability/waste, accessed October 4, 2018.

Development of the proposed project would involve demolition of existing structures and associated surface parking lots, and construction of the principal project components that are described in detail in the following sections. The proposed project is shown on Figures 3-4 through 3-15.

3.2.1 HOTEL

The proposed project site plan is shown on Figure 3-4 and the two proposed subterranean parking levels are shown on Figure 3-5. As shown on Figure 3-4, the proposed hotel includes one entrance to the lobby that is oriented to the west (fronting Arioso Apartments) with a roundabout style drop-off area. At-grade vehicular parking is located at this entrance. This west-fronting entrance is the only auto-oriented entrance for hotel guests, restaurant customers, and employees. The entrance to the two levels of the below-grade parking garage is also located at the west side of the hotel building to the north of the hotel main entrance. The outdoor seating for the restaurant and event meeting rooms would front North Wolfe Road.

The first floor of the hotel is at ground level and would include the lobby, reception area, an event room, meeting rooms, restaurant/bar (for hotel and non-hotel guests), kitchen, mechanical rooms, laundry, electrical rooms, housekeeping, loading dock, employee lockers, and storage spaces. The second floor would include a fitness room, an administrative office, mechanical rooms, electrical rooms, housekeeping space, an employee breakroom, telecom room, storage space, and hotel rooms. Floors three through five consist of mostly guest rooms with the exception of space for mechanical equipment, housekeeping, and telecom rooms. The roof would have an outdoor lounge/bar that would be open to hotel guests and other customers not staying at the hotel.

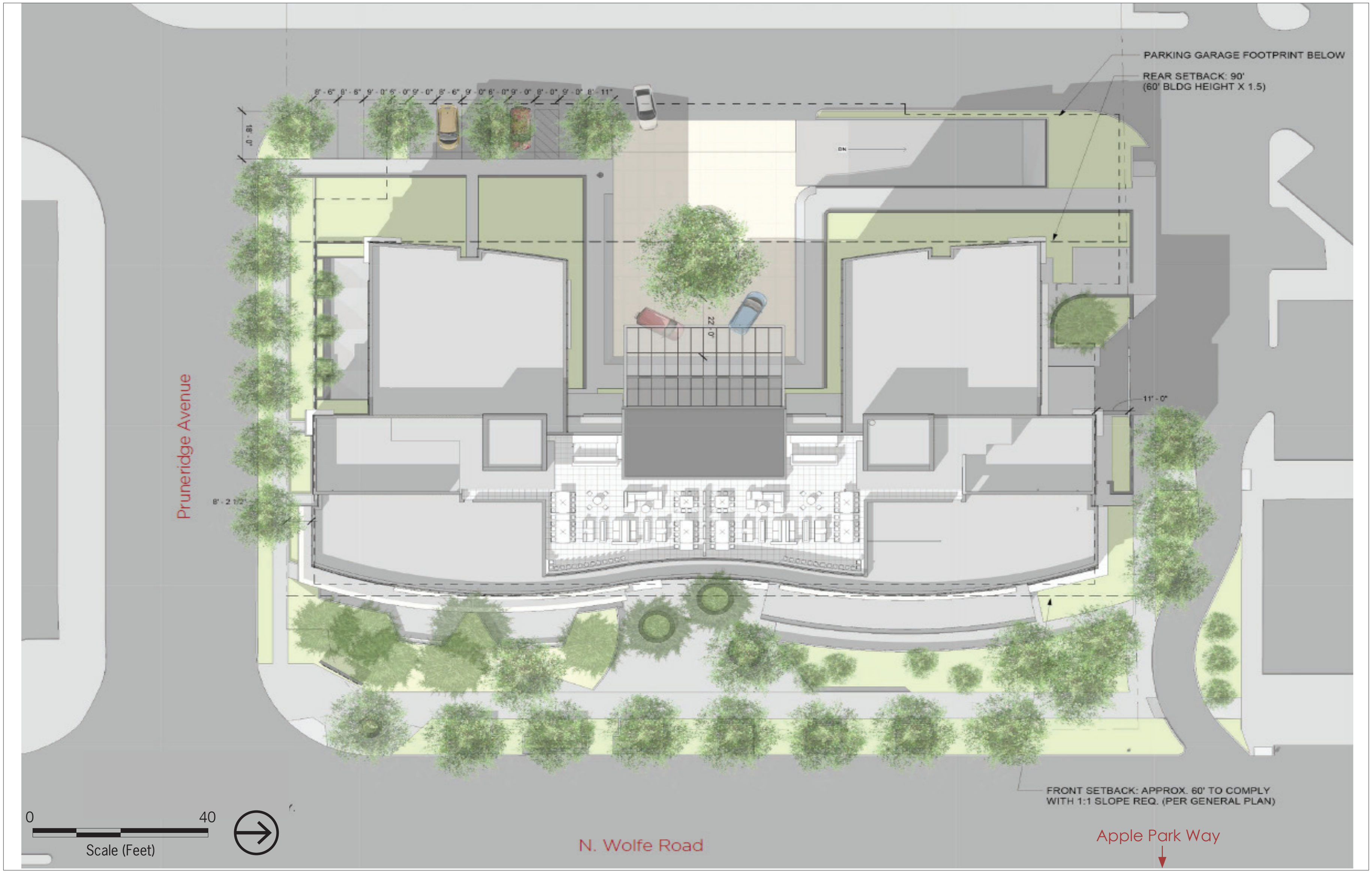
Guest rooms would be structured as follows: 164 king rooms, 14 double queen rooms, and seven junior suite rooms. The proposed floors are shown in Figures 3-6 through 3-11.

The hotel would have a FAR (Floor Area Ratio) of 1.71. As shown in Figures 3-12 through 3-15, the building would have a maximum height of 59 feet 6 inches at the roofline, and the maximum height of the rooftop mechanical equipment and utility structures would be 72 feet 8 inches as allowed in the General Plan.[18] The proposed project would have an approximate front yard setback of 60 feet but no less than to allow a 1:1 slope line from the face of the curb, side setbacks of 9 feet on the south side and 11 feet on the north side, and rear setback of 90 feet, and side and rear setback of 0 feet, which is permitted by the General Plan.[19]

According to the project applicant, the operation of the proposed hotel would generate 93 new jobs.[20] With an average of two guests per hotel room, the hotel would generate up to 370 guests at maximum capacity. The largest event meeting room would accommodate up to 450 people and the smaller meeting rooms would accommodate up to 350 people.

[18] City of Cupertino General Plan (Community Vision 2015-2040), Chapter 3, Land Use and Community Design, page LU-18.
[19] City of Cupertino General Plan (Community Vision 2015-2040), Chapter 3, Land Use and Community Design, page LU-18.
[20] Assumes one job for two hotel rooms.

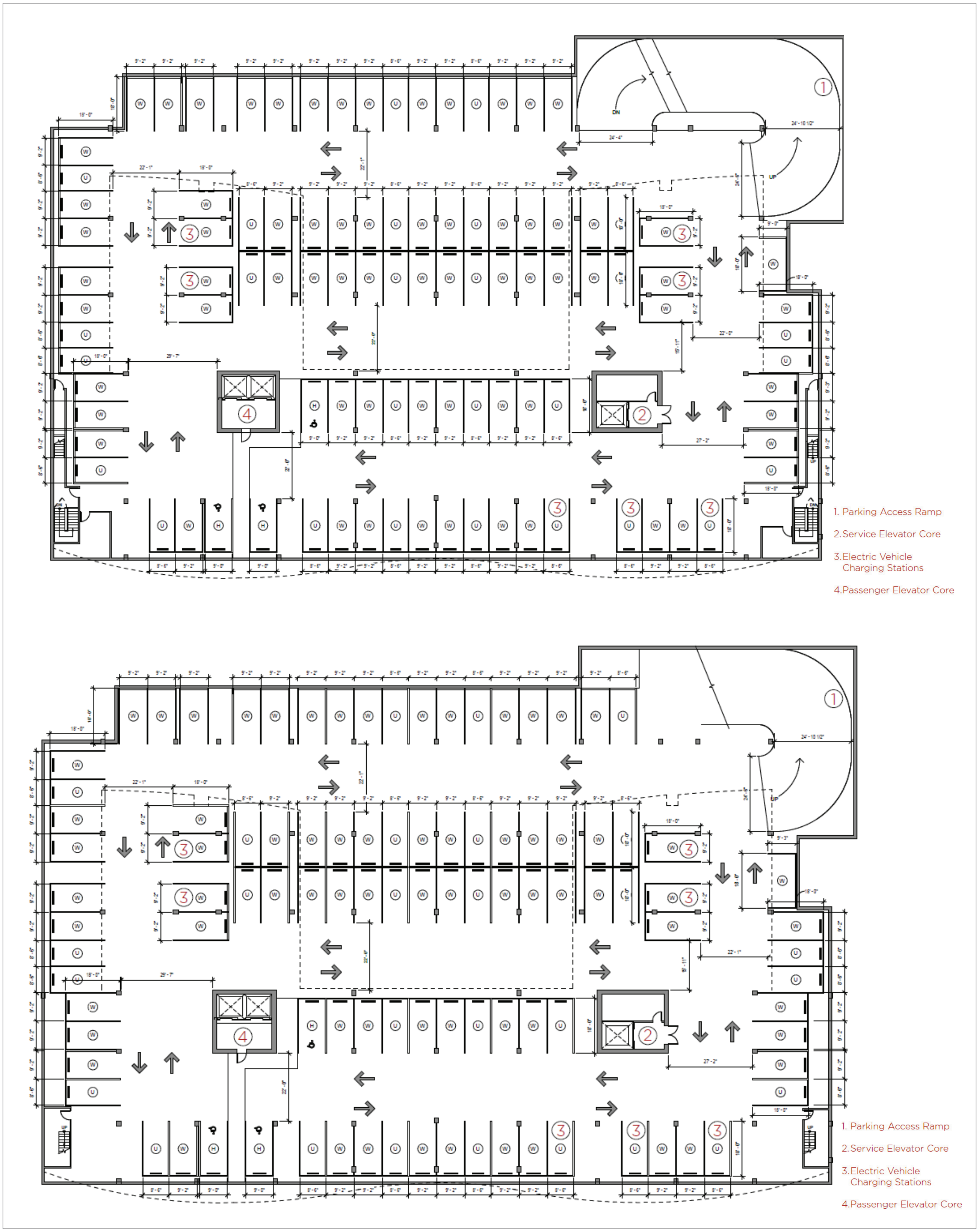
PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

Figure 3-4
Conceptual Site Plan

PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

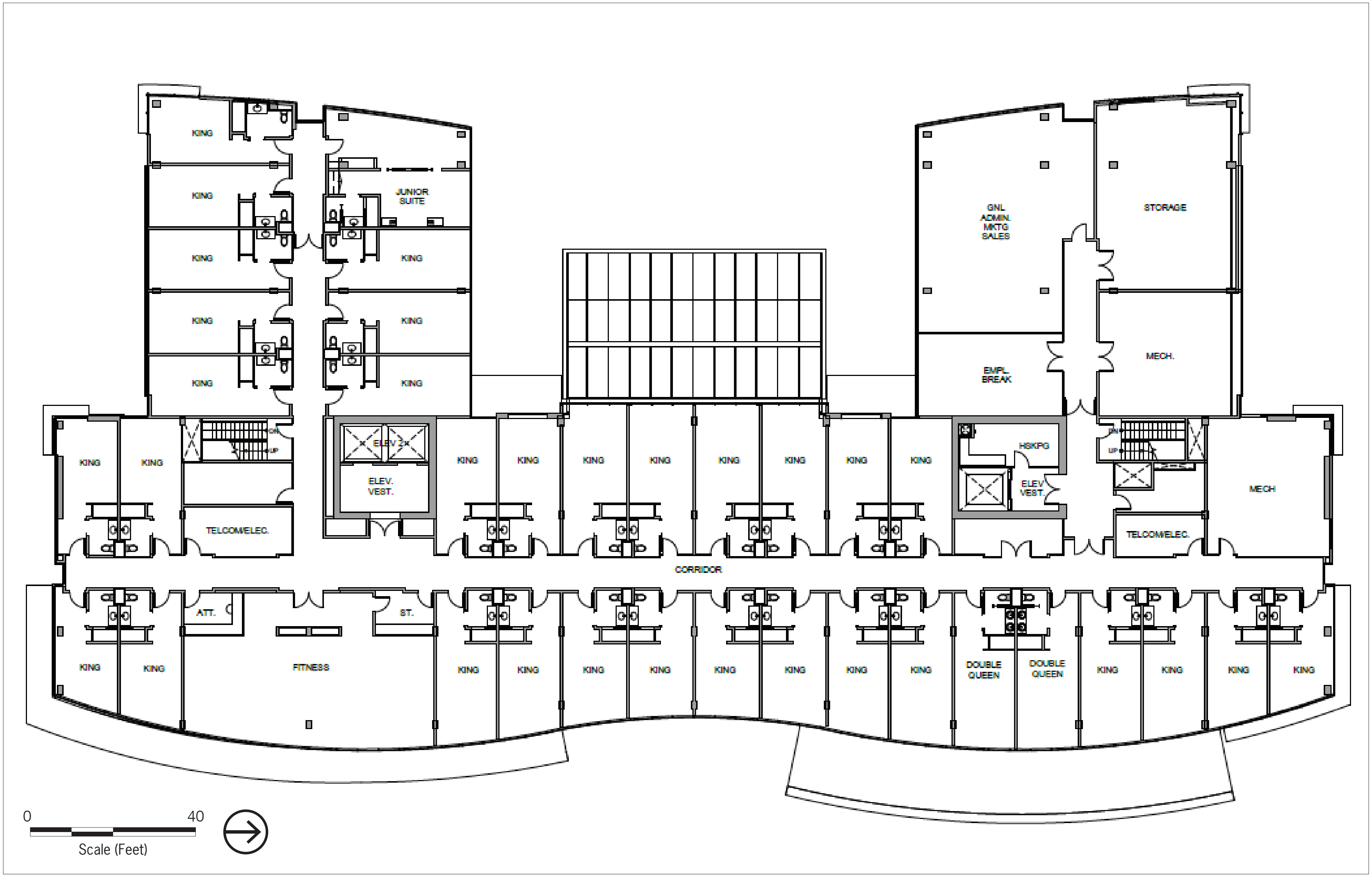
0 40
Scale (Feet)

Figure 3-5
Floor Plan: Level P1 & P2

Source: Hornberger + Worstell, July 27, 2018.

Figure 3-6
Floor Plan: Ground/Arrival Level

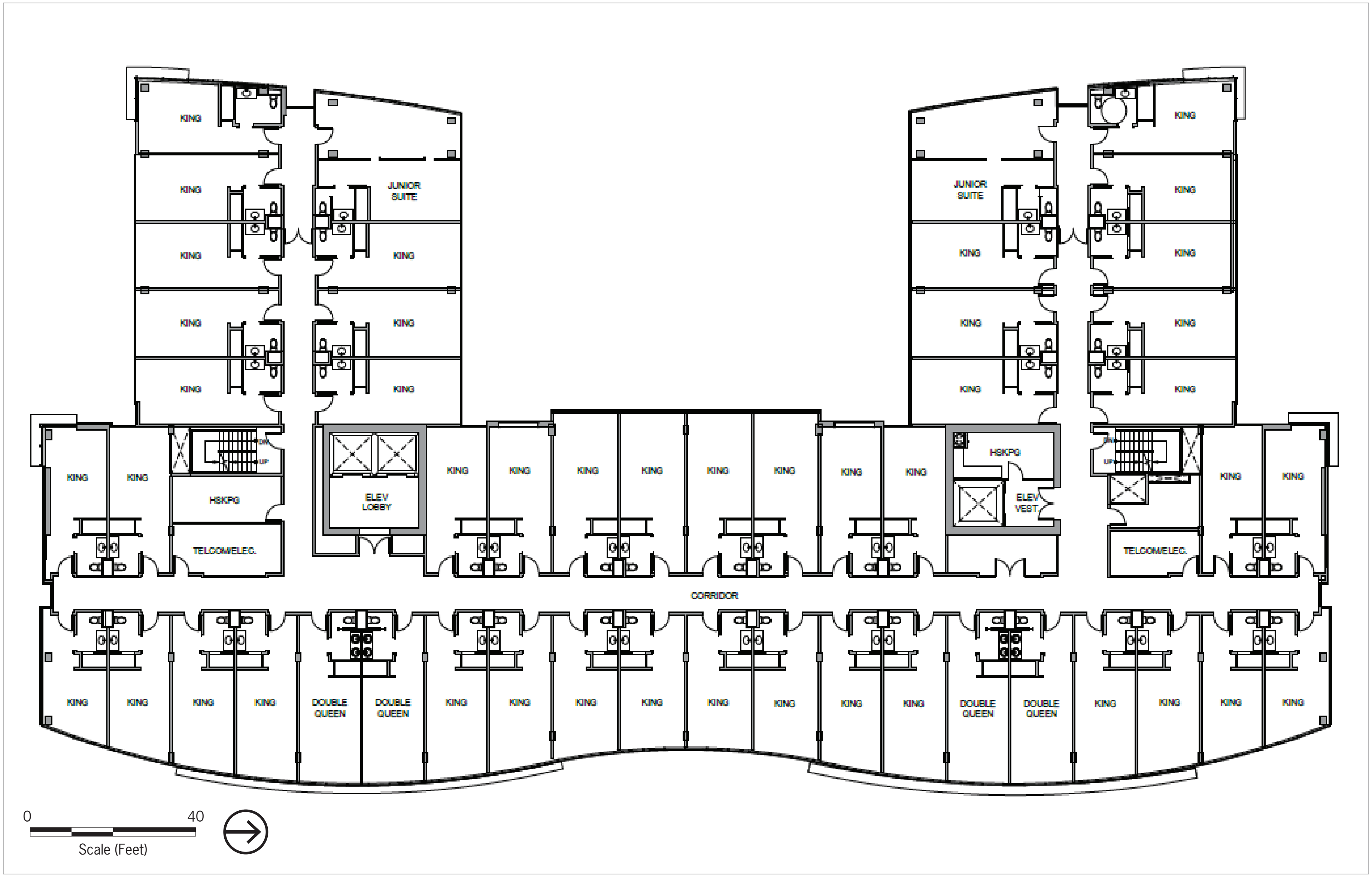
PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

Figure 3-7
Floor Plan: Level 2

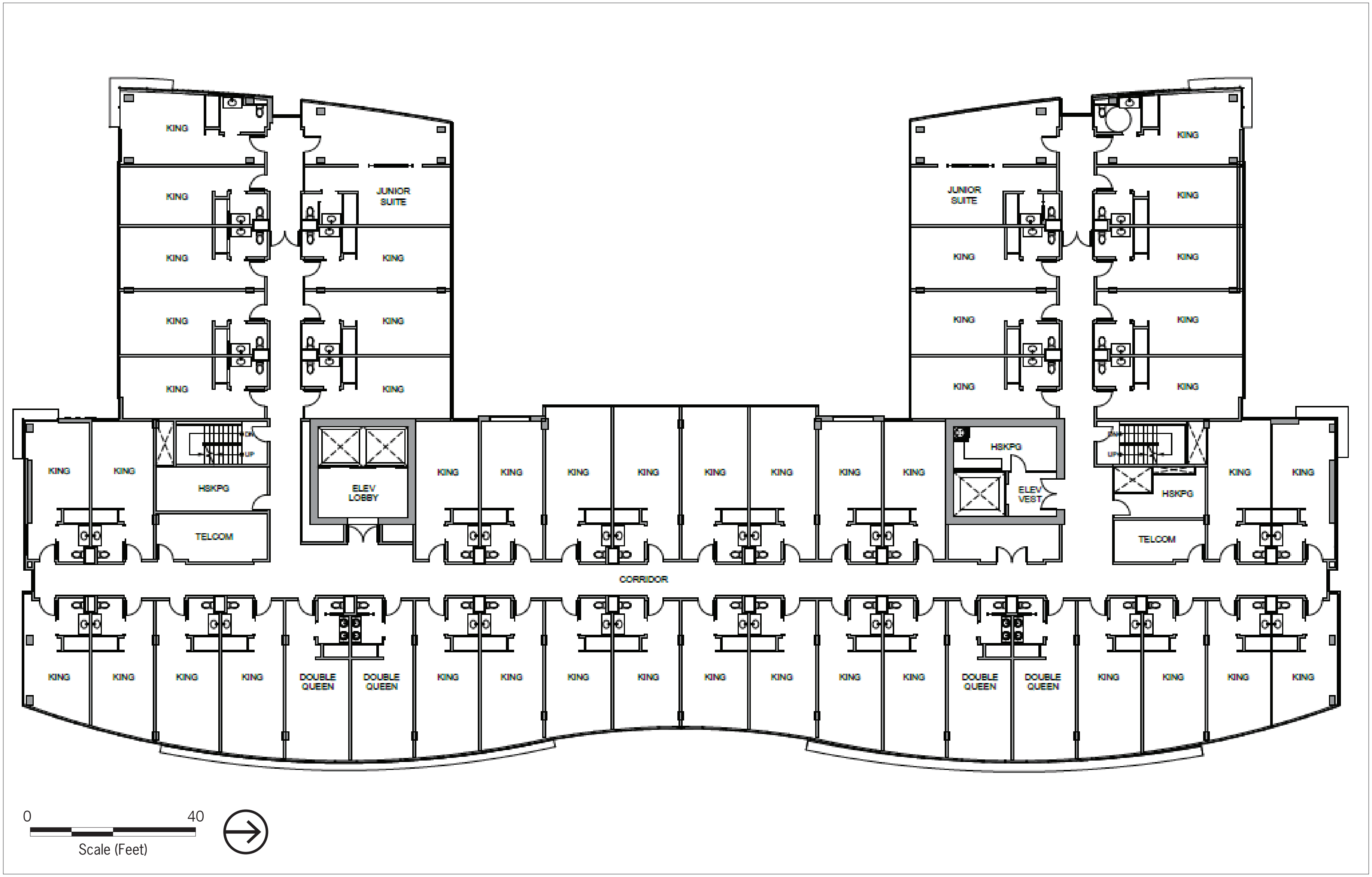
PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

Figure 3-8
Floor Plan: Level 3

PROJECT DESCRIPTION

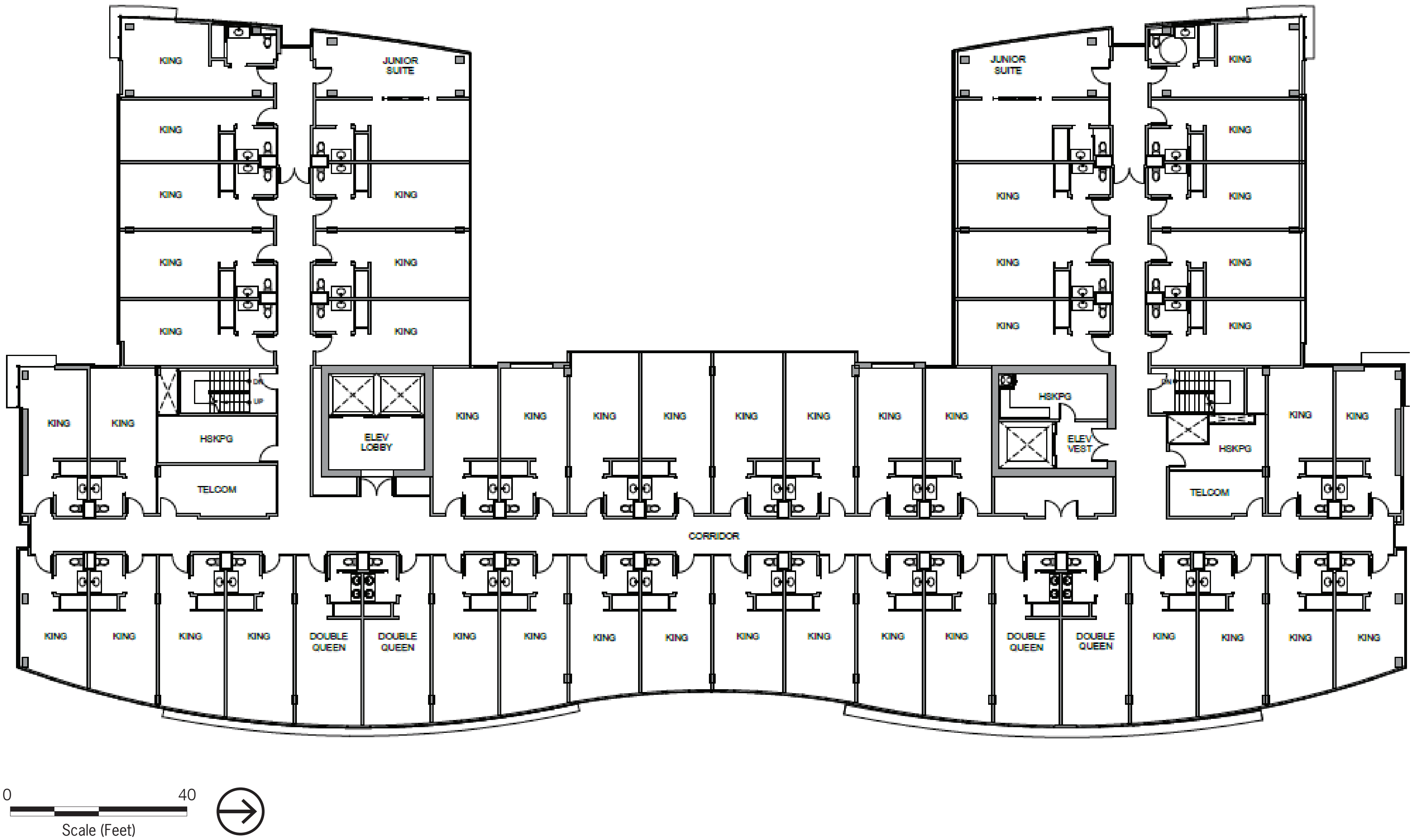


Source: Hornberger + Worstell, July 27, 2018.

Figure 3-9

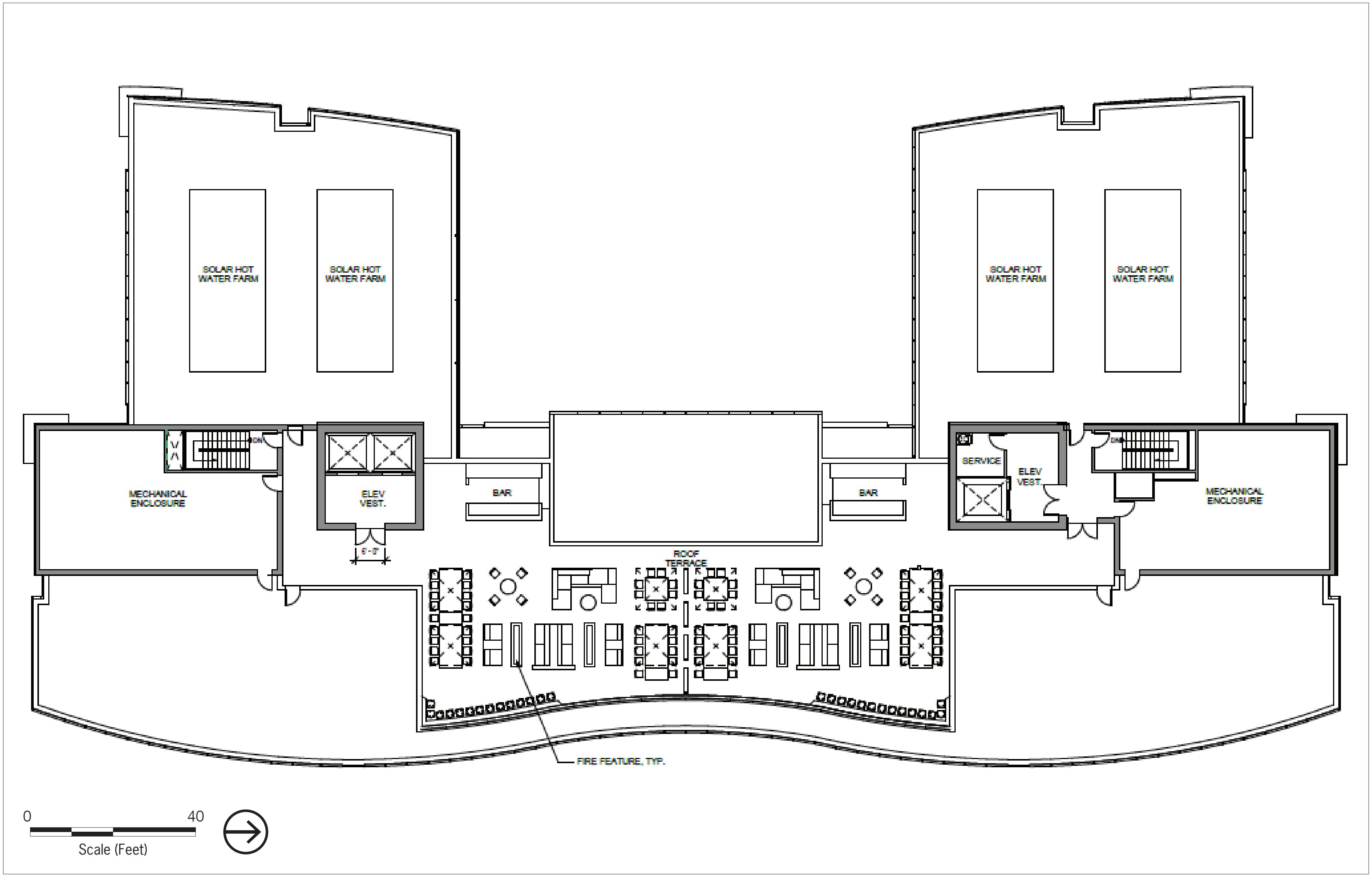
Floor Plan: Level 4

PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

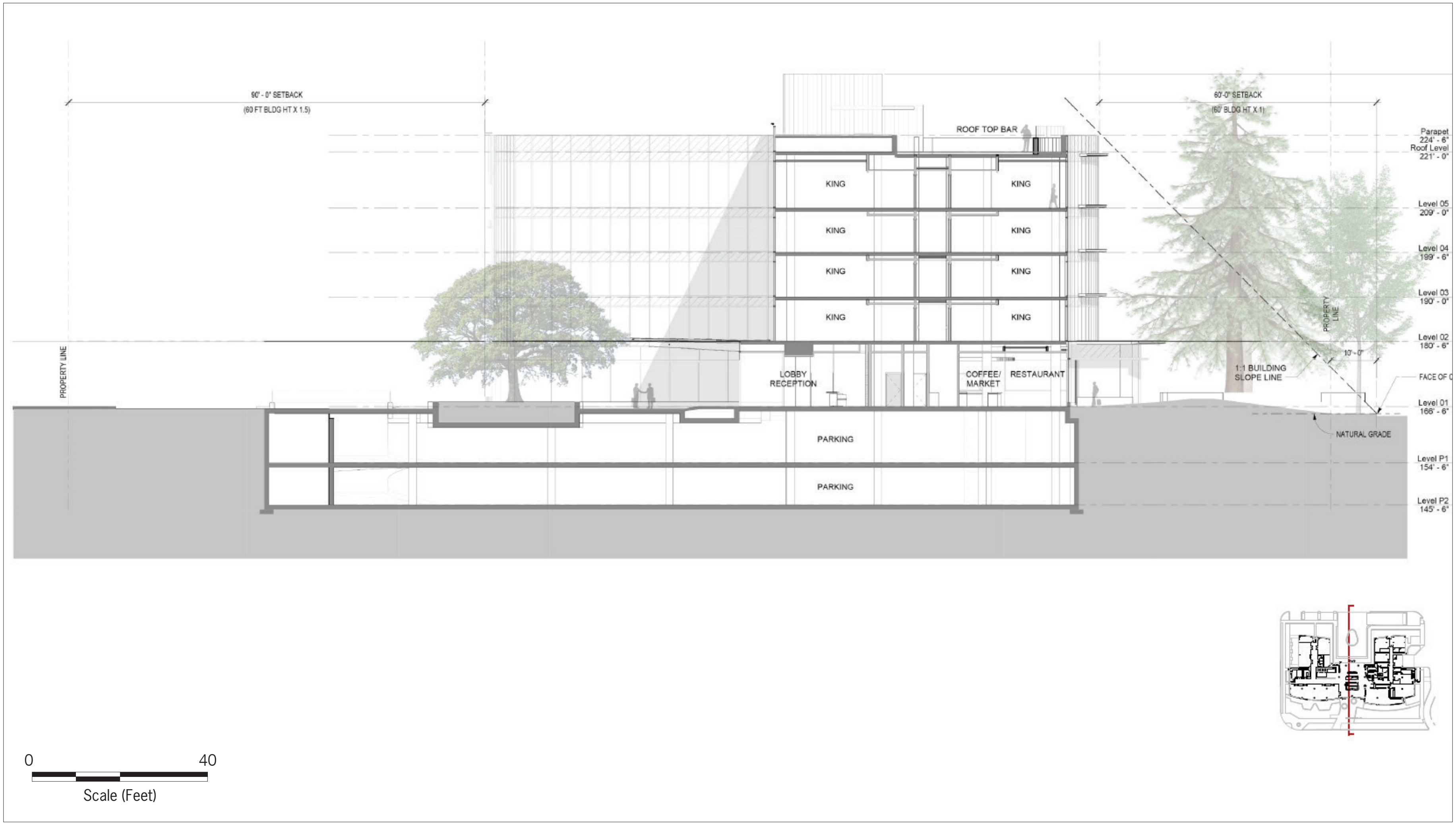
Figure 3-10
Floor Plan: Level 5



Source: Hornberger + Worstell, July 27, 2018.

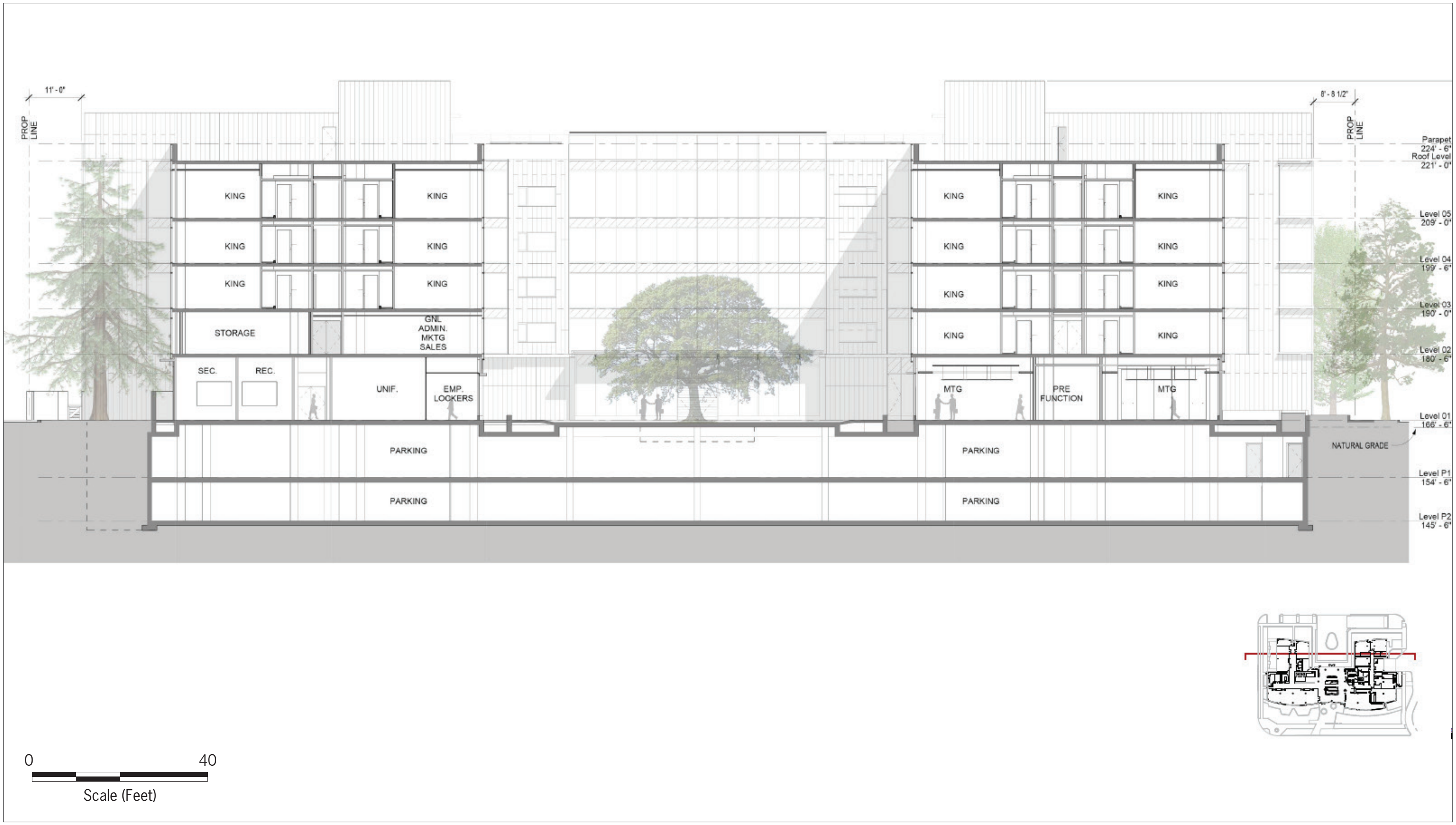
Figure 3-11
Floor Plan: Roof Plan

PROJECT DESCRIPTION



Source: Hornberger + Worstell, July 27, 2018.

Figure 3-12
Site Section: East/West

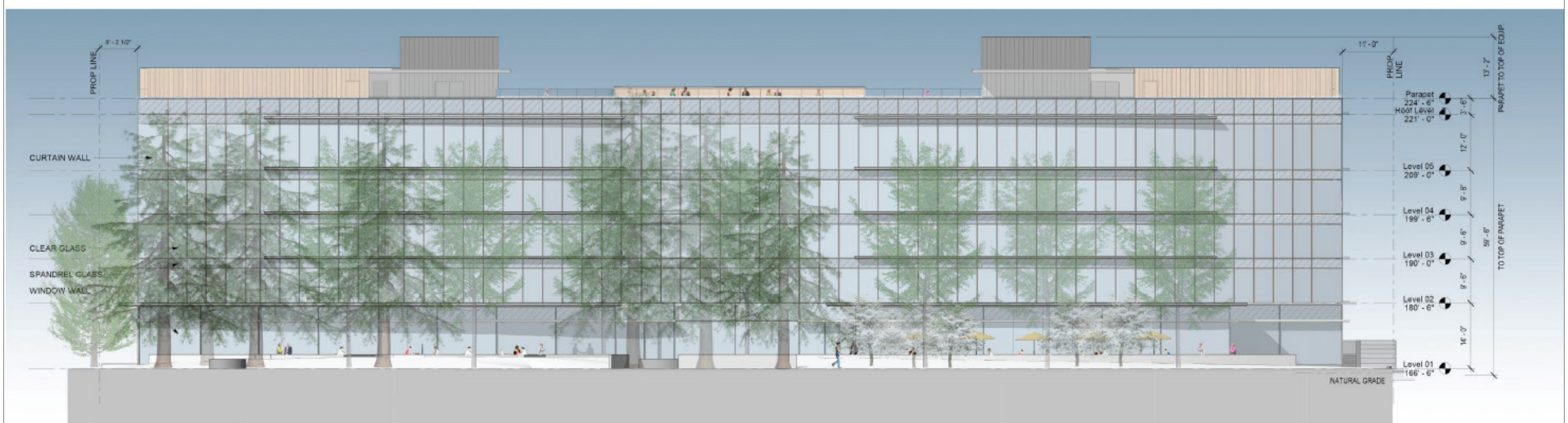


Source: Hornberger + Worstell, July 27, 2018.

Figure 3-13
Site Section: North/South

PROJECT DESCRIPTION

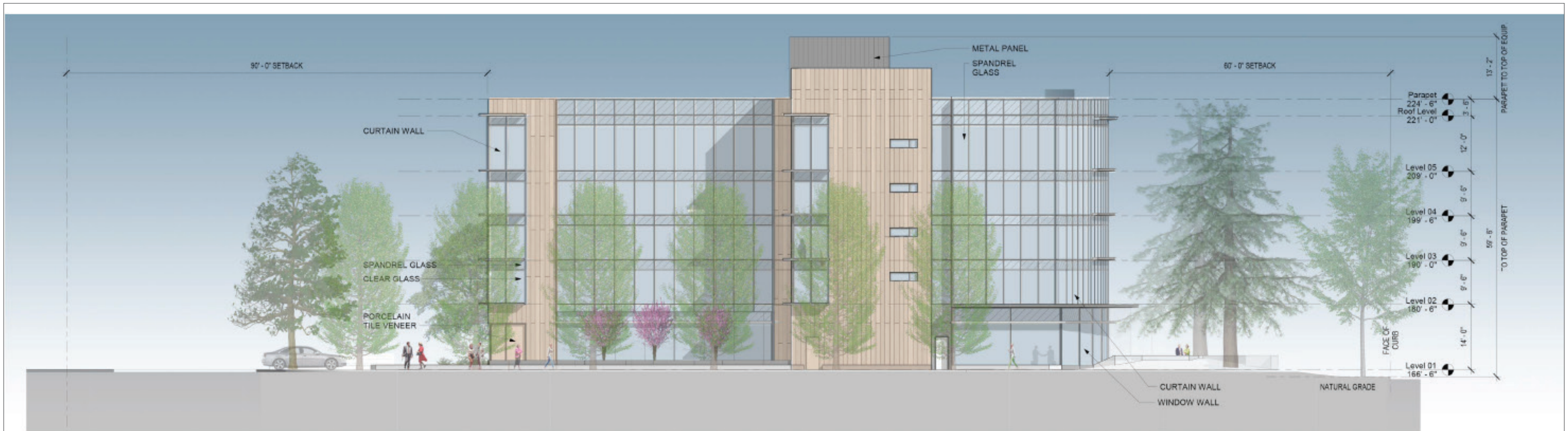
North Elevation



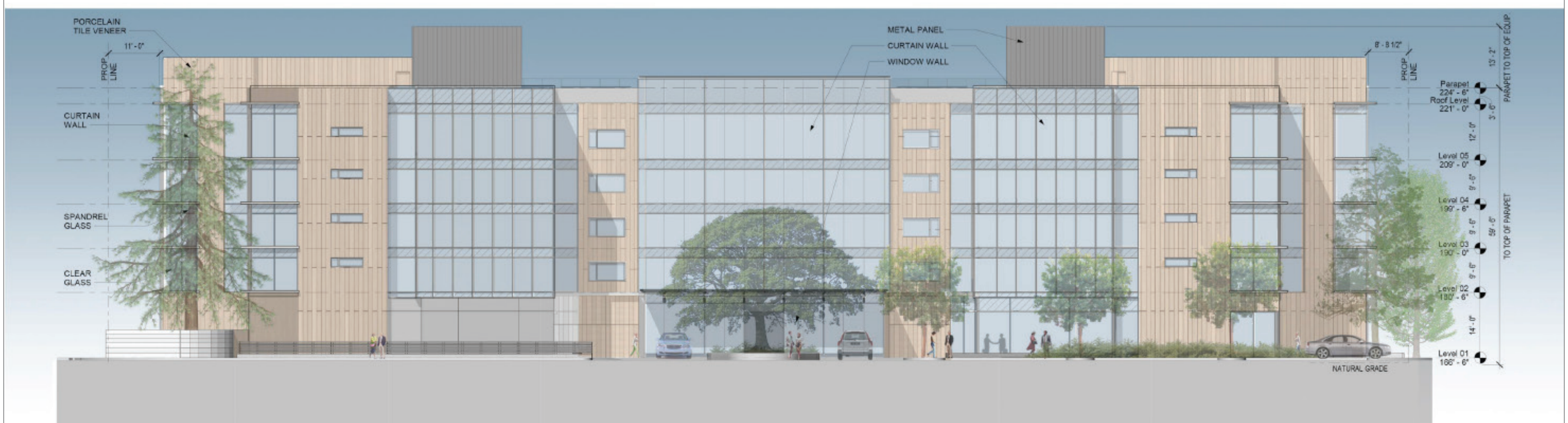
East Elevation

Source: Hornberger + Worstell, July 27, 2018.

Figure 3-14
Elevations: North and East



South Elevation



West Elevation

Source: Hornberger + Worstell, July 27, 2018.

Figure 3-15
Elevations: South and West

3.2.2 CIRCULATION AND ACCESS

VEHICULAR, BICYCLE, AND PEDESTRIAN ACCESS

As shown on Figure 3-16, direct access to the project site would occur from the existing roadways in the Cupertino Village off of Pruneridge Avenue to the south, an existing driveway located between the site and the existing Arioso Apartments to the west, and a roadway between the site and commercial buildings in the Cupertino Village to the north.

The internal roadways are accessible to vehicles and bicycles from North Wolfe Road via the North Wolfe Road/Pruneridge Avenue intersection and the driveway to the Cupertino Village at the North Wolfe Road/Apple Parkway intersection. A third, but less direct access point off of North Wolfe Road is located approximately 30 feet north of the North Wolfe Road/Apple Park Way intersection. The proposed project includes modifications to the driveway to the Cupertino Village at the North Wolfe Road/Apple Parkway intersection. The modification could occur as one of two options: (1) restrict inbound trips to right turns only from North Wolfe Road and prohibit outbound trips to North Wolfe Road, or (2) close the driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way intersection. Accordingly, the environmental analysis provided in Chapter 4 of this Initial Study includes an evaluation of both options.

The hotel would provide vehicular and bicycle access for guests and employees at the lobby/drop-off area and the below-grade parking garage, both of which are oriented to the west, facing the Arioso Apartments, and a loading dock and service vehicle entrance on the north side of the hotel, facing Cupertino Village. The hotel would provide Class II bicycle parking facilities[21] along the pedestrian entrance along North Wolfe Road (see Figure 3-17).

There would be 10 pedestrian entrances to the hotel, as shown in Figure 3-17. The entrance leading to the lobby and another entrance leading to the west meeting rooms face the Arioso Apartments to the west, three entrances are on the east side of the building facing North Wolfe Road, three entrances are on the north side of the building facing Cupertino Village shops, and two entrances are on the south side of the building facing Pruneridge Avenue. A walkway that connects to the North Wolfe Road sidewalk surrounds the project site for pedestrian access.

TRANSIT

The Santa Clara Valley Transportation Authority (VTA) and Caltrain provide transit services in Cupertino. Bus stops located near the northwestern and northeastern corners of the Wolfe Road/Apple Park Way intersection, approximately a two-minute walk (about 500 feet) to and from the project site, provide access to existing bus service (Local Bus Routes 26 and 81). Local Bus Route 26 provides service to Vallco Shopping Center, located less than one mile south of the project site, which allows riders to connect to Local Bus Routes 23, 101 and 182. A description of each of these routes is presented below.

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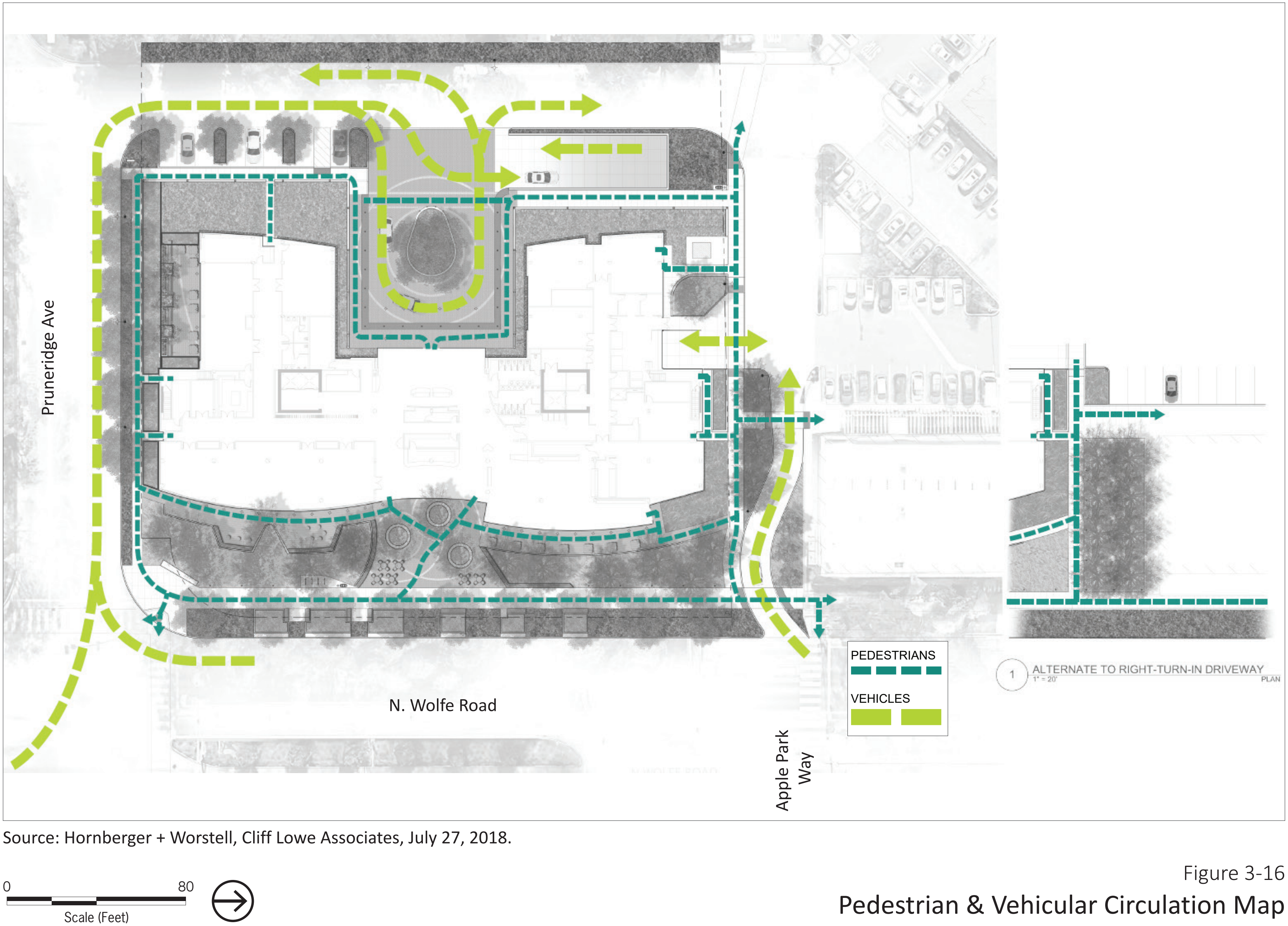
[21] Class II bicycle parking facilities include bicycle racks to which the frame and at least one wheel can be secured with a user-provided lock.

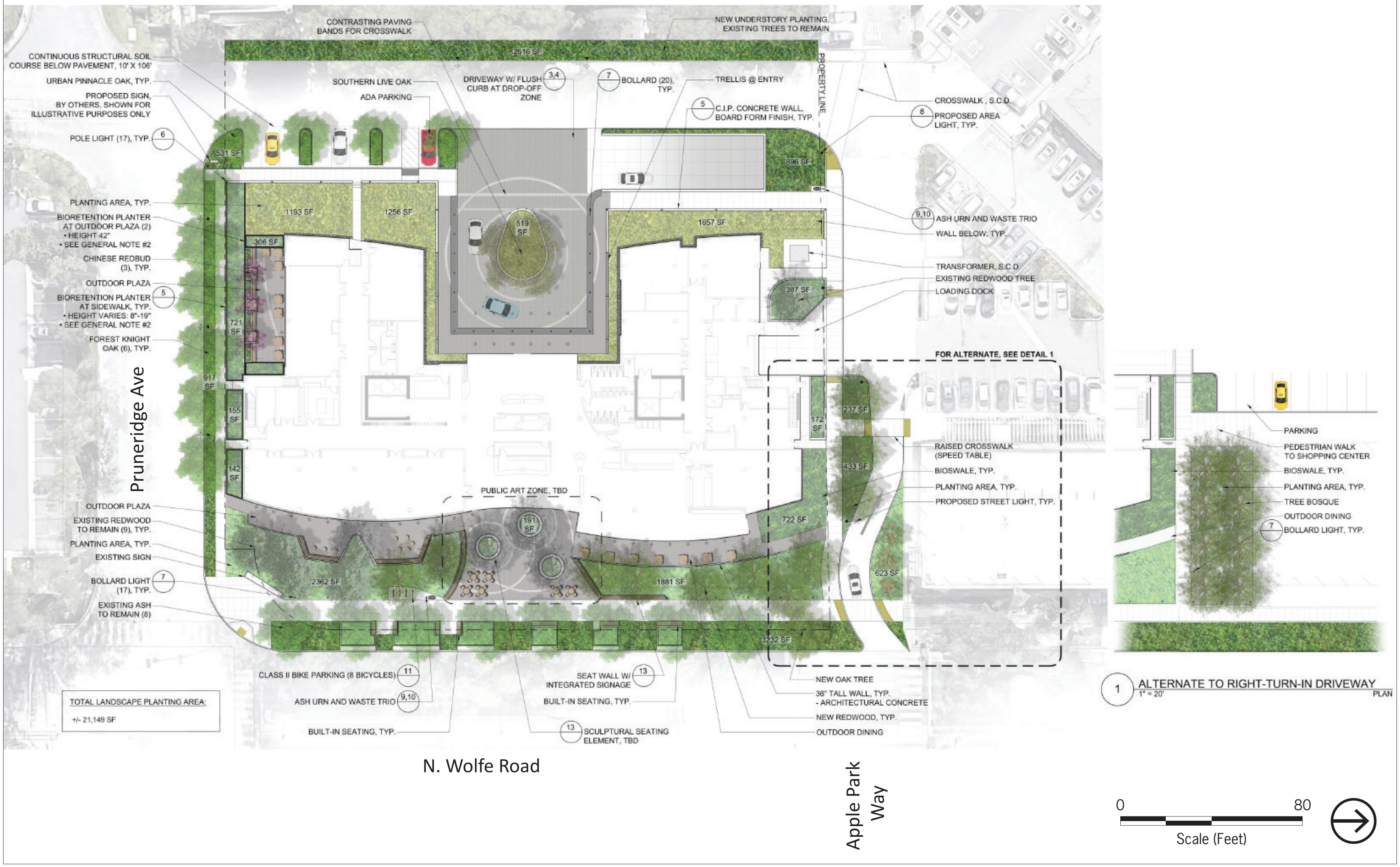
PROJECT DESCRIPTION



Source: Hornberger + Worstell, Cliff Lowe Associates, July 27, 2018.

Figure 3-16
Pedestrian & Vehicular Circulation Map

PROJECT DESCRIPTION



Source: Hornberger + Worstell, Cliff Lowe Associates, July 27, 2018.

Figure 3-17
Conceptual Landscaping Plan

Bus Routes that Serve the Project Site

- Bus Route 26 provides service between Sunnyvale/Lockheed Martin Transit Center and the Eastridge Transit Center. Route 26 follows major arterials and travels through Sunnyvale, Cupertino, San Jose, and Campbell on Fair Oaks Avenue, Wolfe Road, Campbell Avenue, and Tully Road. Bus stops for Route 26 are provided immediately north of the project site along Wolfe Road.
- Bus Route 23 provides service between De Anza College and Alum Rock Transit Center. Route 23 follows major arterials and travels through Santa Clara and San Jose. Bus stops for Route 23 are provided at the Vallco Shopping Center located less than a mile south of the project site.
- Bus Route 81 provides service between Moffett Field/Ames Center and San Jose State University via the Santa Clara Transit Center and Downtown San Jose. This route operates on Stevens Creek Boulevard, Benton Street, West San Carlos Street, and San Fernando Street with nearby stops at Tantau Avenue and Pruneridge Avenue.
- Bus Route 101 is an express bus route that operates on I-280, Stevens Creek Boulevard, and Lawrence Expressway; it connects a Park & Ride lot at the Camden Avenue interchange along SR 85 to Palo Alto. This route passes through the Winchester Transit Center and has a bus stop south of the project site at Wolfe Road/Vallco Mall, (approximately 0.5 miles south), which provides connections to Routes 26, 23, and 323.
- Bus Route 182 is an express bus route that operates on I-280, Wolfe Road, Vallco Parkway, and Stevens Creek Boulevard; it connects the Park & Ride lot at El Camino Real and Page Mill Road in Palo Alto with the IBM Santa Teresa Facility at Bailey Avenue. Route 182 departs Palo Alto once in the morning. Route 182 travels northbound one time in the evening. Route 182 has stops at the Vallco Mall.

Caltrain is a commuter rail service that runs from downtown San Francisco (4th and King Streets) to downtown San Jose (Diridon Station), with a limited number of commute period trains running farther south to Gilroy. The nearest station to the project site is the Lawrence Station, which is located on Lawrence Expressway approximately 3.5 miles northwest of the project site.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

The proposed project will incorporate transportation demand management (TDM) measures to offset transportation-related greenhouse gas emissions and to reduce overall vehicle miles traveled. The project applicant would implement these measures, which are included in the Traffic Impact Analysis prepared by Hexagon Transportation Consultants dated July 2018 and included in Appendix D of this Initial Study. The TDM measures to be implemented by the project include design features, programs, and services that promote sustainable modes of transportation and reduce the vehicular trips and parking demand generated by the project. Such measures encourage walking, biking, and use of transit and shuttles. Implementation of the proposed TDM measures is also designed to reduce project trips and parking demand by employees of the hotel. While the specific measures to be included in the proposed hotel's TDM Plan will be refined during the development review process, the available measures include, but are not limited to, those described below.

Transportation Demand Management Measures

- On-site TDM Coordinator and Services
- Information Board/Online Kiosk
- On-Site Design Features
- Information Packet for Guests and Employees
- Shuttle Services for Guests, Employees, and Local Residents
- Bicycle Resources for Guests and Employees
- Car Share Program for Guests and Employees
- Transit Passes for Guests and Employees
- Financial Incentives for Carpooling, Biking and Walking to Work for Employees
- On-Site Ride Matching Assistance for Employees
- Emergency Ride Home Program for Employees

The proposed hotel would be responsible for ensuring that the TDM trip reduction measures are implemented. The designated on-site TDM coordinator would be responsible for implementing the ongoing TDM measures and reported to the City annually.

3.2.3 LANDSCAPING

The proposed project would result in 21,149 square feet of pervious landscaped surfaces. As shown on Figure 3-17, the project site would include landscaping that surrounds the hotel structure. Maintaining a portion of the existing trees along the North Wolfe Road frontage is proposed to provide mature tree canopy as a buffer from the street for the hotel outdoor uses. Newly planted trees would consist of Chinese redbud, Evergreen dogwood, Forest knight oak, Urban pinnacle oak, Southern live oak, Engelmann oak, Coast redwood, and Marina strawberry tree. The existing trees that would remain include eight existing Evergreen ash trees and 10 Coast redwood trees. As stated above in Section 1.1.4.2, Zoning, the project is required to submit a Landscape Project Submittal for approval by the City.

The proposed landscaping would be consistent with the surrounding Northern California landscape and would include native and/or adaptive and drought resistant plant materials grouped into hydrozones, which are areas where plants are organized based on similar water use.[22] The majority of plantings would be drought tolerant grasses, shrubs, and trees that, once established, are adapted to a dry summer and intermittent rain in the winter season. The exception to this is the existing Redwoods that require a more consistent level of potable irrigation throughout the year. The proposed project would also improve the landscaping in an existing planter adjacent to the Arioso Apartments.

As previously stated in Section 1.1.3, Existing Site Character, a tree inventory and assessment prepared for the project site included an evaluation of 68 trees representing 11 species. According to the tree inventory and assessment, all of the trees on the project meet the criteria for protected status pursuant to the CMC and the removal of any trees would require a permit.

[22] The California Model Water Efficient Landscape Ordinance defines a hydrozone as a portion of the landscaped area having plants with similar water needs.

3.2.4 LIGHTING

The source, intensity, and type of exterior lighting for the project site would generally be provided for the purpose of orienting site users and for safety needs. All on-site lighting would be low-level illumination and shielded to reduce light spill or glare into surrounding buildings. In landscaped and paved areas, light sources would be concealed and not visible from a public viewpoint.

3.2.5 UTILITIES

The proposed utility infrastructure would retain existing connections to the water, sewer, storm drain system, natural gas, and electricity network in the area, and would be served by an existing solid waste landfill.

WATER SUPPLY AND CONSERVATION

The project site is located within the California Water Service (Cal Water) Los Altos Suburban District (LASD) service area, and Cal Water would supply water for the project. The proposed project would connect to existing water lines and reclaimed water lines along North Wolfe Road and Pruneridge Avenue. The project would extend a reclaimed water main from the intersection of North Wolfe Road and Homestead Road to Pruneridge Avenue, and incorporate the use of reclaimed water for the project's irrigation and toilet flushing. The reclaimed water main extension would not encroach on undisturbed areas.

The project incorporates a number of features meant to conserve water used for on-site irrigation. The irrigation water on the site would be dual sourced recycled water and potable water as available from the LASD. Any lawn areas can use 100 percent recycled water. All landscape zones would be irrigated as required by the Cupertino Landscape Ordinance, and water uses would be tailored to meet CALGreen Building Standards, which as described in Section 1.1.4.2, Zoning, requires water conservation and requires new buildings to reduce water consumption by 20 percent.

SANITARY SEWER SERVICE

The project site is located within the Cupertino Sanitary District (CSD) service area and wastewater would be treated at the San Jose/Santa Clara Water Pollution Control Plant (SJ/SCWPCP). With existing connections to the sanitary sewer system on North Wolfe Road and Pruneridge Avenue, new connections are not anticipated.

STORMWATER MANAGEMENT

The proposed project would result in a decrease in the amount of impervious surfaces from 61,502 in the existing condition to 59,468 square feet. As a result, the project would result in a decrease of runoff from the property. The project would comply with the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 requirements, which include minimization of impervious surfaces, measures to detain or infiltrate runoff from peak flows to match pre-development conditions, and agreements to ensure that the stormwater treatment and flow control facilities are maintained in perpetuity. Additionally, the project would comply with CMC Chapter 9.18 described above in Section 1.1.4.2, Zoning, which is intended to provide regulations and give legal effect to certain requirements of the NPDES permit issued to the City. Existing connections to the storm drain line on North Wolfe Road and Pruneridge Avenue would not change. Additionally, the proposed project would provide four bioretention water treatment areas at ground level and as raised planters and 12 drainage management areas throughout the project site (see Figures 3-17 and 3-18).

SOLID WASTE SERVICES

Recology South Bay (Recology) would provide curbside recycling, garbage, and compost and yard waste service to the hotel.[23] All non-hazardous solid waste collected under the Recology franchise agreement is taken to Newby Island Sanitary Landfill for processing. Under the agreement between the City and Recology, Recology also handles recyclable materials (at no cost to customers). The City has a contract with Newby Island Sanitary Landfill (NISL) until 2023, and has not secured a new landfill contract. However, according to the Integrated Waste Management Plan, the landfills in the County (including NISL where the City's collected solid waste is currently being landfilled) have adequate disposal capacity beyond 2026.[24] The City, therefore, has options for landfill service once the City's existing contract with NISL ends in 2023. The proposed waste management for the proposed project would focus on waste, recycling, and composting.

OTHER UTILITIES (NATURAL GAS, ELECTRIC, AND CABLE)

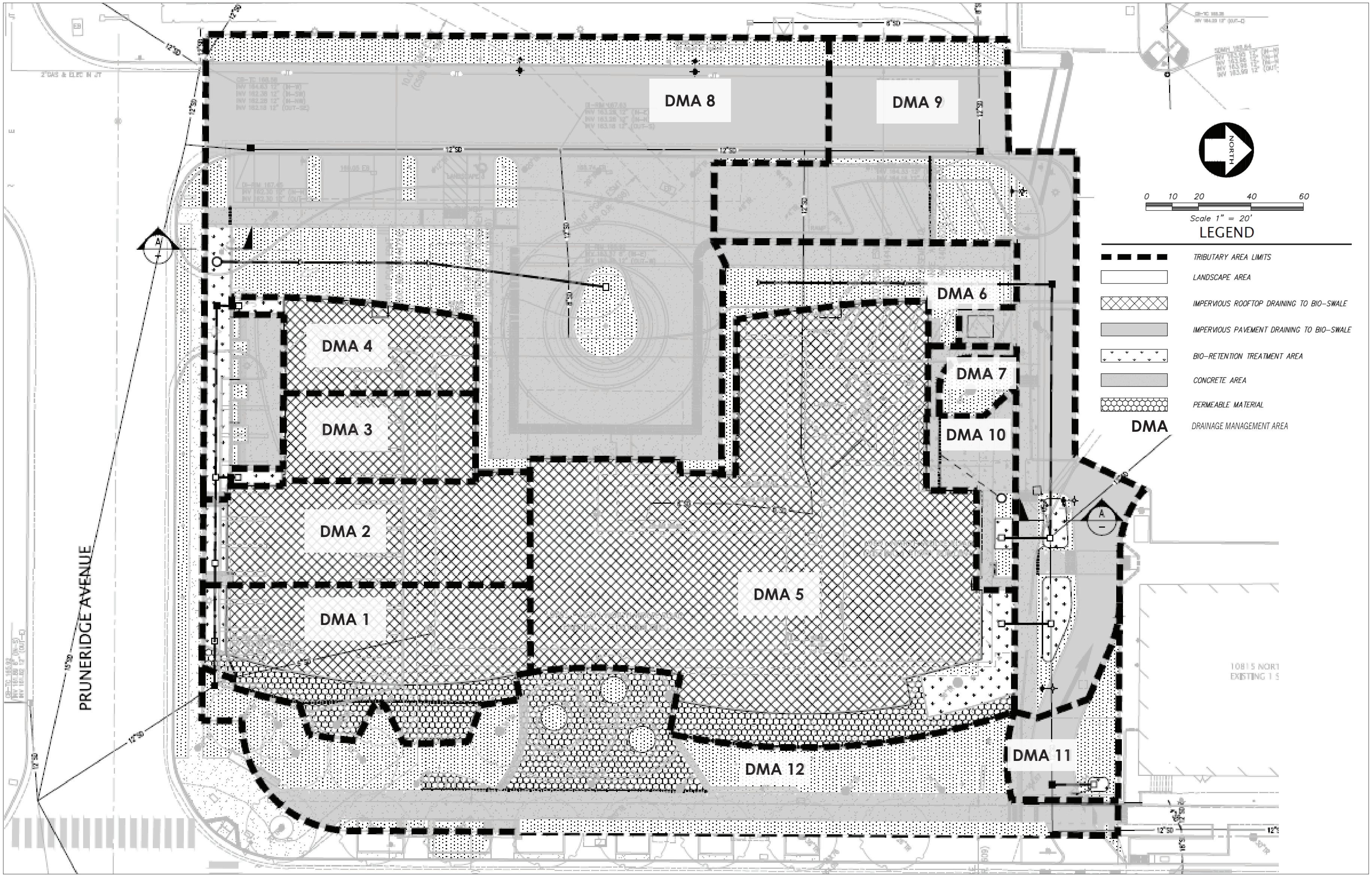
Pacific Gas & Electric (PG&E) would supply natural gas and electricity to the project site. The project is targeting to exceed current Title 24 energy requirements. A CALGreen rating of "Certified" is anticipated. Additionally, the proposed development would achieve LEED Silver, or Alternative Reference Standard, consistent with the City's requirements. Sustainability features such as environmentally preferable building products and solar hot water panels are proposed.

AT&T and other providers would provide telephone service. Cable television service would be available from a number of providers, including Comcast.

[23] City of Cupertino, Garbage and Recycling, https://www.cupertino.org/our-city/departments/environment-sustainability/waste, accessed August 28, 2018.

[24] Santa Clara County Integrated Waste Management Plan, County of Santa Clara Environmental Resources Agency, 1996.

PROJECT DESCRIPTION



Source: Kier & Wright, July 27, 2018.

Figure 3-18
Conceptual Stormwater Control Plan

3.2.6 DEMOLITION, SITE PREPARATION, AND CONSTRUCTION

Demolition and construction would take place over a 24-month period, which is anticipated to begin in August 2019 and be completed 24 months later in 2021, subject to regulatory approval.

DEMOLITION AND SITE PREPARATION

The project applicant proposes to demolish the existing 13,400 square feet of commercial and restaurant buildings. As discussed above, 50 protected trees have been identified on the project site and 18 protected trees are within the right-of-way. The eight existing Evergreen ash trees and 10 Coast redwood trees in the public right-of-way along North Wolfe Road would not be removed. The remaining 50 trees, on the project site, would be removed as a part of the project, including Bigleaf maple, Coast redwood, Crape myrtle, European hornbeam, Evergreen ash, Honey locust, Maidenhair tree, Purple-leaf plum, Southern magnolia, Sweetgum, and Valley oak. New trees such as Chinese redbud, Urban pinnacle oak, Evergreen dogwood, Southern live oak, Forest knight oak, and Coast redwood trees would be planted to replace the trees that are removed. The removal of existing trees on-site would be required to comply with the City's Protected Tree Ordinance.[25]

As shown in Table 3-2, demolition would take place over an approximately 10-day period and site preparation and grading activities would take place over a 5-day period and a 30-day period, respectively. Equipment used for demolition and site preparation would include a combination of concrete/industrial saws, rubber-tired bulldozers, graders, tractors, loaders, and backhoes. The proposed project would include 44,000 cubic yards of cut and 400 cubic yards of fill. Demolition debris would be off-hauled for disposal at the Zanker Materials Recovery and Landfill in San Jose, approximately 19 miles from the project site. This would be done in accordance with the CMC Chapter 16.72, Recycling and Diversion of Construction and Demolition Waste.[26]

TABLE 3-2 DEMOLITION AND CONSTRUCTION PHASING

Activity	Phase 1
Demolition	10 working days
Site Preparation	5 days
Grading	30 days
Building Construction	457 days
Paving	10 days
Painting	20 days

Kimco Realty Corporation (project applicant), PlaceWorks Construction Data Request, May 14, 2018.

CONSTRUCTION

As shown in Table 3-2, the longest construction phase would be the construction of the building, which would take place over a 457-day period, and would be followed by much shorter time periods for paving and painting. Project construction would result in a 210,621-square-foot building with 17,733 square feet

[25] City of Cupertino Municipal Code, Title 14, Streets, Sidewalks and Landscaping, Chapter 14.18, Protected Trees.
[26] City of Cupertino Municipal Code, Title 16, Building and Construction, Chapter 16.72, Recycling and Diversion of Construction and Demolition Waste.

of paved area and 21,149 square feet of landscaping. The total area to be disturbed during construction would be approximately 1.72 acres.

3.3 REQUIRED PERMITS AND APPROVALS

Following approval of this Initial Study, adoption of the Mitigated Negative Declaration, the following discretionary permits and approvals from the City would be required for the proposed project:

- General Plan Amendment
- Development Agreement
- Development Permit
- Architectural and Site Approval Permit
- Use Permit
- Tree Removal Permit

In addition, permits for demolition, grading and building, and the certificate of occupancy would be required from the City.

3.4 VOLUNTARY COMMUNITY BENEFITS

The proposed project would provide the following community benefits:

- Non-paid educational internship;
- Complementary use of conference and meeting space to certain groups;
- Extended hotel-run shuttle services for employees, guests, and when capacity is available, to the community residents;
- Preferential treatment for Cupertino residents for employment; and
- Local negotiated rates for visiting dignitaries.

Table 3-3 shows the estimated required and voluntary community benefit fees that the project applicant proposes to pay. Final fees and voluntary community benefits would be determined upon approval of the project.

TABLE 3-3 REQUIRED FEES AND COMMUNITY BENEFITS

	One Time Fee	Annually
Annual membership in the local Transportation Management Agency (TMA)[a]		$10,000
Flexible Community Amenity Funding for Transportation Facilities, TMA, Public Facilities, and Public Open Space[a, b]	$1,850,000	
Annual City Property Tax Proceeds	TBD	
Estimated Totals	**$1,950,000**	**$10,000**

a. Voluntary community benefit if TMA is formed.
b. A one time contribution to the City that can be used for any public services at the City's discretion.
Source: City of Cupertino, August 1, 2017.

4. Environmental Analysis

4.1 DISCUSSION OF ENVIRONMENTAL EVALUATION

The General Plan EIR included an analysis of the project site within Study Area 5 (Cupertino Village), which assumed potential redevelopment including mixed-use hotel, retail, and residential projects with a maximum height of 130 feet with retail development. The cumulative impacts, in conjunction with overall General Plan buildout, were evaluated as part of the General Plan EIR. The proposed project is anticipated to be complete in 2021 (subject to regulatory approval); thus, this Initial Study presents a focused analysis to evaluate the near-term impacts of the proposed project under existing and cumulative conditions.

Consistent with the analysis presented in the General Plan EIR, and due to the proposed project's location in an urbanized setting, the project would not have a significant effect on agriculture, forestry or mineral resources. Maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency categorize land within Cupertino as Urban and Built-Up Land.[27] In addition, according to 2006 mapping data from the California Department of Forestry and Fire Protection, the city does not contain any woodland or forestland cover.[28] Finally, the city does not contain land zoned for farmland or timberland production.[29] Consequently, there would be no impacts with regard to agriculture and forestry resources. The project site is within an area designated as Mineral Resource Zone 3, which is an area containing mineral deposits for which the significance cannot be evaluated from available data.[30] Because the site has been developed and is not considered suitable for protection or conservation, there would be no impacts to mineral resources. For these reasons, these topics are not discussed further in this Initial Study.

On September 27, 2013, Senate Bill (SB) 743 was signed into law and became effective on January 1, 2014. Among other provisions, SB 743 amends CEQA by adding Public Resources Code Section 21099 regarding analysis of aesthetics, parking, and traffic impacts for urban infill projects. The following is a discussion of how aesthetics and parking are treated in SB 743. Traffic is discussed in Section XV, Traffic and Circulation, further below in this Initial Study.

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[27] California Resources Agency, Farmland Mapping and Monitoring Program. Santa Clara County Important Farmland 2010, accessed on May 28, 2018.

[28] California Department of Forestry and Fire Protection Fire and Resource Assessment Program, Land Cover Map, accessed on May 28, 2018.

[29] City of Cupertino, Zoning Map, http://www.cupertino.org/index.aspx?page=291, accessed on May 28, 2018.

[30] City of Cupertino, General Plan (Community Vision 2015–2040, Chapter 6, Environmental Resources and Sustainability, Figure ES-2, Mineral Resources.

CEQA Section 21099(d)(1), states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, aesthetics and parking are no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

a) The project is in a transit priority area,

b) The project is on an infill site, and

c) The project is residential, mixed-use residential, or an employment center.

As described below, the proposed hotel project is a qualified "employment center" that is located on a site that meets the definition of an infill site, but does not meet the definition of a designated "transit priority area" pursuant to SB 743:

- Employment Center: An employment center is defined as means "a project located on property zoned for commercial uses with a FAR of no less than 0.75 and that is located within a transit priority area." The proposed hotel would have a FAR of 1.71.
- Transit Priority Area: A transit priority area is defined as "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations. As shown in Table 4-14 in Section XV, Transportation and Circulation, below, the project site is not within a half mile of a "major transit stop" as defined by CEQA Section 21064.3 (the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods) and CEQA Section 21155(b) (a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours). The Santa Clara Valley Transportation Authority (VTA) Bus Stops 26 and 81 along North Wolfe Road are located approximately 0.1 mile (500 feet) north and south from the project site and do not meet the 15-minute frequency of service interval.[31] Additionally, the *Plan Bay Area 2040*, which is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS), does not list the site as a recognized Transit Priority Area.[32]
- Infill Site: An infill site is defined as means "a lot located within an urban area that has been previously developed or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses." The site is currently developed with two commercial buildings: an occupied 3,385-square-foot building that is currently occupied by the Duke of Edinburgh Pub and Restaurant, and a vacant 10,044-square-foot commercial building. Surrounding uses include

[31] Santa Clara Valley Transportation Authority, Bus Schedules for Bus 26 and 81. http://www.vta.org/routes/rt26 and http://www.vta.org/routes/rt81, respectively. Accessed August 24, 2018.

[32] *Plan Bay Area*, Association of Bay Area Governments (ABAG)/Metropolitan Transportation Commission (MTC) Priority Development Area (PDA) and Transit Priority Area (TPA) Map for CEQA Streamlining, https://www.planbayarea.org/pda-tpa-map. Accessed August 24, 2018.

commercial buildings in the Cupertino Village and parking lots to the north, the new Apple Park and existing Hamptons Apartment complex to the east across North Wolfe Road, the Arioso Apartments to the west, and Hilton Garden Inn to the south.

Accordingly, aesthetic-related impacts are discussed in Section I, Aesthetics, of this Initial Study. With respect to parking impacts, effective in 2010, parking inadequacy as significant environmental impact was eliminated from the CEQA Guidelines by The Governor's Office of Planning and Research, which is the entity charged with drafting guidelines to help agencies implement CEQA. Accordingly, parking is not discussed further in this Initial Study.

Items identified in each section of the environmental checklist below are discussed following that section. Required mitigation measures are identified where necessary to reduce a projected impact to a level that is determined to be less than significant. All impacts were found to be less than significant or less than significant with mitigation.

I. AESTHETICS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?	❒	❒	■	❒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	❒	❒	■	❒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	❒	❒	■	❒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❒	❒	■	❒

EXISTING CONDITIONS

The project site contains an existing one-story restaurant, a vacant one-story commercial building, and surface parking space. The site is immediately bordered by mature trees ranging in height from 10 to 60 feet, a driveway, and the mainly one-story Cupertino Village buildings to the north, North Wolfe Road and the Apple Park (four stories) and Hamptons Apartments (three stories) to the east, Pruneridge Avenue, and the four-story Hilton Garden Inn to the south, and a driveway and the three-story Arioso Apartment community to the west.

DISCUSSION

a) *Would the proposed project have a substantial adverse effect on a scenic vista?*

As discussed in Chapter 4.1, Aesthetics, of the General Plan EIR, the proposed project would have the potential to affect scenic vistas and/or scenic corridors if the redevelopment on the project site blocked views of areas that provide or contribute to such vistas. Potential effects could include blocking views of a scenic vista/corridor from specific publically accessible vantage points or the alteration of the overall scenic vista/corridor itself. Such alterations could be positive or negative, depending on the characteristics of the project site and the subjective perception of observers.

Public views of scenic corridors are views seen along a linear transportation route and public views of scenic vistas are views of specific scenic features. Scenic vistas are generally interpreted as long-range views, while scenic corridors are comprised of short-, middle-, and long-range views. The General Plan does not have designated scenic corridors or vistas. However, for purposes of this analysis, the westward views of the foothills and ridgelines of the Santa Cruz Mountains are considered scenic vistas, and the segment of I-280 from Santa Clara County line on the west to I-880 on the east also is considered a scenic corridor.

The analysis in the General Plan EIR found that an increase of building height to 130 feet would result in a less-than-significant impact to the long-range views of the Santa Cruz Mountain Range and foothills because the heights of the existing on-site and surrounding buildings and mature trees, which range from 10 to 60 feet, currently limit the opportunity for views of scenic vistas from street-level public viewing and because the project location is not considered a destination public viewing point nor is it visible from scenic vistas.

As described in Chapter 3, Project Description, of this Initial Study, the existing buildings would be removed and replaced by the proposed buildings that would consist of a five-story building over two levels of below-grade parking, and would be 60 feet tall at the highest point. All of the existing trees would be removed from the site with the exception of the eight Evergreen Ash trees and 10 Coast Redwood trees that surround the perimeter of the project site and range in height from 25 to 60 feet.

Because the proposed project would involve height increases that are less than what was evaluated in then General Plan EIR, and because existing conditions currently limit views of scenic resources combined with the fact that the site and surrounding areas are not destination viewing locations, impacts would remain consistent with the conclusions in the General Plan EIR and would be *less than significant*.

b) *Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

As discussed in Chapter 4.1, Aesthetics, of the General Plan EIR, the segment of I-280 in Cupertino is not an officially designated State Scenic Highway, but is considered to be eligible to be designated as a State Scenic Highway. Any views of the mountains are currently impeded by the existing tree canopy along North Wolfe Road as well as the three-story Arioso Apartment complex and Apple Park from North Wolfe

Road, but there would be no changes from the I-280 viewshed because the freeway is located south of the site and the project site is not visible from that location. Impacts to views of scenic resource from the I-280 view corridor were determined to be less than significant in the General Plan EIR.

Similar to the discussion above, because the project proposes height increases that would be less than what is evaluated in then General Plan EIR and existing conditions currently limit views of scenic resources, including those from the I-280 viewshed, impacts would remain consistent with the conclusions in the General Plan EIR and would be *less than significant*. No mitigation measures would be required.

c) *Would the proposed project substantially degrade the existing visual character or quality of the site and its surroundings?*

As discussed in criteria (a) and (b) above, the proposed project would not result in a substantial change to the existing visual character of the site or its surroundings. The project would result in a change from the existing one-story commercial buildings to a five-story hotel; however, as stated above in criterion (a), the mature trees that surround the perimeter of the project site would remain as part of the project and would preserve the existing visual setting. The project site is separated from the Arioso Apartments to the west by landscaping and a two-lane driveway, from the Cupertino Village buildings to the north by a two-lane driveway, from the Apple Park building to the east by North Wolfe Road, which is made up of four-to-six-lanes with a landscaped median, and from Hilton Garden Inn building to the south by the four-lane Pruneridge Road. These roadways and existing landscaping would remain intact and serve as a buffer between the project site and the surrounding land uses; thus, the existing visual setting of surrounding land uses would remain unaltered by the project. Furthermore, the project is subject to the City's discretionary review processes, including the Development Permit and Architectural and Site Approval Review, in accordance with Chapters 19.12 and 19.168 of the Zoning Ordinance, which would ensure the proposed project would harmonize with adjacent development and not degrade the existing visual quality of the site and surrounding land uses. Accordingly, consistent with the conclusions of the General Plan EIR, the proposed project would not substantially degrade the existing visual character of the site and its surroundings, and impacts would remain *less than significant*.

d) *Would the proposed project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

Nighttime illumination and glare impacts are the effects on adjoining uses and areas of a project's exterior lighting. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies. As discussed in Chapter 4.1, Aesthetics, of the General Plan EIR, the project site and surrounding area contain many existing sources of nighttime illumination. These include street and parking area lights, security lighting, and exterior lighting on existing commercial buildings. Additional onsite light and glare is caused by surrounding land uses and traffic on surrounding roadways. As described in Chapter 3, Project Description, of this Initial Study, the source, intensity, and type of exterior lighting for the project site would be typical for orientation and safety needs. All on-site lighting would be low-level illumination and shielded to reduce light spill or glare. In landscaped and paved areas, light sources would be concealed and not visible from public views. All exterior surface and above-ground mounted fixtures would be complementary to the existing architectural theme. The roadway and landscaping surrounding the project discussed in criteria (a) and (c), above, would act as a buffer to prevent light spilling on to adjacent land uses. For these reasons, and because the project proposes less development than what was evaluated in then General Plan EIR, impacts would remain consistent with the conclusions in the General Plan EIR and would be *less than significant*.

II. AIR QUALITY

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	■	❒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	❒	■	❒	❒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions which exceed quantitative Standards for ozone precursors or other pollutants)?	❒	■	❒	❒
d) Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	■	❒
e) Create objectionable odors affecting a substantial number of people?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is currently developed with a vacant 10,044-square-foot commercial building and the occupied 3,385-square-foot restaurant (Duke of Edinburgh). The restaurant generates criteria air pollutants from transportation sources, energy (natural gas and purchased energy), and area sources such as landscaping equipment and architectural coatings. As discussed in Section XV, Transportation and Circulation, the current land uses generate approximately 1,636 average daily trips. Existing emissions associated with the proposed project are included in Table 4-1 below.

TABLE 4-1 EXISTING OPERATION-RELATED CRITERIA AIR POLLUTANT EMISSIONS

	Criteria Air Pollutants (tons per year)			
Category	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing 2018 Emissions				
Area	<1	<1	<1	<1
Energy	<1	<1	<1	<1
On-Road Mobile	<1	1	1	<1
Total	**<1**	**1**	**1**	**<1**
	Criteria Air Pollutants (pounds per day)			
Category	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	<1	0	0	0
Energy	<1	1	<1	<1
On-Road Mobile	2	2	4	1
Total	**3**	**4**	**4**	**1**

Notes: Emissions may not total to 100 percent due to rounding; Reactive Organic Gases = ROG; Nitrogen Oxides = NO_x; Coarse Inhalable Particulate Matter = PM_{10}; Fine Inhalable Particulate Matter = $PM_{2.5}$
Source: California Emissions Estimator Model (CalEEMod), Version 2016.3.25.

Air Pollutants of Concern

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the federal Clean Air Act (National) and California Clean Air Act, respectively. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, all of them except for ROGs are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Toxic Air Contaminants

In addition to criteria air pollutants, both the State and federal government regulate the release of TACs. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code Section 7412[b]) is a toxic air contaminant. Under State law, the

California Environmental Protection Agency, acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

Where available, the significance criteria established by the BAAQMD are relied upon to make the determinations discussed below.

DISCUSSION

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The BAAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. In April of 2017 BAAQMD adopted its 2017 Clean Air Plan, which is a regional and multiagency effort to reduce air pollution in the SFBAAB. Regional growth projections are used by BAAQMD to forecast future emission levels in the SFBAAB. For the Bay Area, these regional growth projections are provided by the Association of Bay Area Governments (ABAG) and transportation projections are provided by the Metropolitan Transportation Commission (MTC) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. The proposed project would construct a 185-room hotel, which is within the 1,339-hotel-room maximum evaluated in the General Plan EIR and would not directly result in any additional new population growth or employment growth beyond what was accounted for in the General Plan EIR. The proposed project is not considered a regionally significant project under CEQA Guidelines Section 15206 that would affect regional vehicle miles traveled (VMT) and warrant intergovernmental review by ABAG and MTC.

As discussed in Section XII, Population and Housing, the proposed project would not exceed the level of population or housing projected in City or regional planning efforts (*Plan Bay Area*) through 2040, and it would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the 2017 Clean Air Plan projections. Furthermore, the net increase in regional emissions generated by the proposed project would be less than the BAAQMD's emissions thresholds with mitigation (see criterion (b) below). These thresholds were established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan and impacts would be considered *less than significant*.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_x, PM_{10}, and $PM_{2.5}$. Development projects below the significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. The following describes changes in regional impacts from short-term construction activities and long-term operation of the proposed project.

Construction Impacts

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Construction activities associated with the project would result in emissions of ROG, NOx, CO, PM_{10}, and fine $PM_{2.5}$.

Construction Fugitive Dust

Ground disturbing activities during construction would generate fugitive dust (PM_{10} and $PM_{2.5}$). The amount of dust generated during construction would be highly variable and is dependent on the amount of material being disturbed, the type of material, moisture content, and meteorological conditions. If uncontrolled, PM_{10} and $PM_{2.5}$ levels downwind of actively disturbed areas could possibly exceed State standards. Consequently, BAAQMD considers all impacts related to fugitive dust emissions from construction to be *less than significant* with implementation of BAAQMD's best management practices shown in Mitigation Measure AQ-1.

Mitigation Measure AQ-1: The project's construction contractor shall comply with the following Bay Area Air Quality Management District best management practices for reducing construction emissions of fugitive dust (PM_{10} and $PM_{2.5}$):

- Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt/sand).

- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

Construction Exhaust Emissions

The proposed project would result in demolition debris and would require soil export for the underground parking that would occur near existing sensitive land uses. Thus, the BAAQMD screening criteria for construction-related impacts would not be met and a quantified analysis of the proposed project's construction emissions was conducted using the California Emissions Estimator Model (CalEEMod) Version 2016.3.25 based on information provided by the project applicant. Construction is assumed to begin in August 2019 and end 24 months later in 2021. Potential construction-related air quality impacts are determined by comparing the average daily criteria air pollutants emissions generated by the proposed project-related construction activities to the BAAQMD significance thresholds in Table 4-2. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 4-2, criteria air pollutant emissions from construction equipment exhaust would not exceed the BAAQMD average daily pounds per day thresholds and impacts from project-related construction activities to the regional air quality would be *less than significant.*

TABLE 4-2 CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (pounds per day)[a]					
Year	ROG	NO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Average Daily Emissions[c]	4	12	1	1	<1	<1
BAAQMD Average Daily Project-Level Threshold	54	54	BMPs [b]	82	BMPs [b]	54
Exceeds Average Daily Threshold	**No**	**No**	**NA**	**No**	**NA**	**No**

Notes: Emissions may not total to 100 percent due to rounding. BMP = Best Management Practices; NA = not applicable; Reactive Organic Gases = ROG; Nitrogen Oxides = NO_x; Coarse Inhalable Particulate Matter = PM_{10}; Fine Inhalable Particulate Matter = $PM_{2.5}$

a. Construction phasing and equipment mix are based on the preliminary information provided by the project applicant. Where specific information regarding Project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Includes implementation of best management practices for fugitive dust control required by BAAQMD as mitigation, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, and street sweeping.
c. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 522.

Source: California Emissions Estimator Model (CalEEMod), Version 2016.3.25

Operation-Related Impacts

Long-term air pollutant emissions generated by a hotel development are typically associated with the burning of fossil fuels in vehicle trips to and from the hotel (mobile sources); energy use for cooling, heating, and cooking (energy); and landscape equipment use and household products (area sources). The primary source of long-term criteria air pollutant emissions generated by the project would be emissions produced from project-generated vehicle trips. The proposed project would generate a net total of 1,856 vehicle trips, an increase of 188 average daily weekday trips over the existing land uses at the site. Table 4-3 identifies the net increase in criteria air pollutant emissions associated with the proposed project compared to the baseline operation.

As shown in Table 4-3, the net increase in operational emissions generated by the project would not exceed the BAAQMD daily pounds per day thresholds. Additionally, the net change in tons per year would be 1 ton or less and therefore would not exceed BAAQMD's annual tons per year project level threshold.[33] Therefore, the proposed project would not cumulatively contribute to the nonattainment designations of the SFBAAB and impacts from project-related operation activities to the regional air quality would be *less than significant*.

TABLE 4-3 OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (average pounds per day)[a]			
Category	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing 2021 Projected Emissions				
Area	<1	<1	<1	<1
Energy	<1	1	<1	<1
On-Road Mobile	2	2	4	1
Total	*2*	*3*	*4*	*1*
Proposed Land Use 2021 Emissions				
Area	5	<1	<1	<1
Energy	<1	3	<1	<1
On-Road Mobile	2	2	7	2
Total	*7*	*5*	*7*	*2*
Net Change in 2021 Emissions				
Area	5	<1	<1	<1
Energy	<1	2	<1	<1
On-Road Mobile	<1	<1	3	1
Net Change Total	*5*	*2*	*3*	*1*
BAAQMD Average Daily Project-Level lbs/day Threshold	**54**	**54**	**82**	**54**
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

Notes: Emissions may not total to 100 percent due to rounding. BMP = Best Management Practices; NA = not applicable
a. Average daily emissions are based on the annual operational emissions divided by 365 days.
Source: California Emissions Estimator Model (CalEEMod), Version 2016.3.25.

[33] Further details are shown in Appendix A, Air Quality and Greenhouse Gas Emissions, of this Initial Study.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions which exceed quantitative Standards for ozone precursors or other pollutants)?

This section analyzes potential impacts related to air quality that could occur from a combination of the proposed project with other past, present, and reasonably foreseeable projects within the SFBAAB. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. Any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. Due to the extent of the area potentially impacted from cumulative project emissions (the SFBAAB), a project is cumulatively significant when project-related emissions exceed the BAAQMD emissions thresholds.

As described above in criterion (b), the proposed project would not have a significant long-term operational phase impact. However, as also discussed in criterion (b) above, without incorporation of fugitive dust control measures, construction activities associated with the proposed project could potentially result in significant regional short-term air quality impacts. Mitigation Measure AQ-1 would ensure that required fugitive dust control measures are implemented to control project-related fugitive dust generated during construction activities. Therefore, the project's contribution to cumulative air quality impacts would be *less than significant with mitigation*.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Development of the proposed project could expose sensitive receptors to elevated pollutant concentrations. Unlike the construction emissions shown above in Table 4-2 under criterion (b), described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Construction Off-Site Community Risk and Hazards

The proposed project would elevate concentrations of TACs and $PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. The BAAQMD has developed *Screening Tables for Air Toxics Evaluation During Construction* for construction-related health risks associated with residential, commercial, and industrial projects.[34] According to the screening tables, construction activities occurring within 328 feet (100 meters) of sensitive receptors would result in potential health risks and warrant a health risk analysis. The nearest sensitive land uses in the vicinity of the proposed project is the Arioso Apartment complex approximately 80 feet to the west of the project site. However, the maximum exposed receptor or maximally exposed individual[35] would be located in the apartment complex approximately 200 feet to the

[34] Bay Area Air Quality Management District (BAAQMD), Screening Tables for Air Toxics Evaluation During Construction, Version 1.0, May 2010.

[35] Maximally Exposed Individual is defined by the Office of Environmental Health Hazard Assessment Air Toxic Hot Spots Program Risk Assessment Guidelines as an existing off-site receptor with the highest acute, chronic, or cancer health impact. Office of Environmental Health Hazard Assessment (OEHHA), Air Toxic Hot Spots Program Risk Assessment Guidelines, March 6, 2015, Section 5.1, page 5-1.

southeast of the project site due to the meteorological conditions in the project vicinity. Thus, construction activities in relation to sensitive receptors could occur within the BAAQMD construction-related health risks screening distance of 328 feet (100 meters). Consequently, a construction HRA of TACs and $PM_{2.5}$ was prepared (see Appendix B of this Initial Study).

A quantified analysis of the project's construction emissions was conducted using the CalEEMod, Version 2016.2.25. Construction emissions were based on a 24-month construction duration, construction schedule, and off-road equipment list provided by the project applicant. The United States Environmental Protection Agency AERMOD, Version 9.5, dispersion modeling program was used to estimate excess lifetime cancer risk, chronic non-cancer hazard index for non-carcinogenic risk, and the $PM_{2.5}$ maximum annual concentrations at the nearest sensitive receptors. Results of the analysis are shown in Table 4-4.

TABLE 4-4 CONSTRUCTION RISK SUMMARY – UNMITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Receptor – Residences at Arioso Apartments	24.5	0.014	0.04
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold?	**Yes**	**No**	**No**

Note: Cancer risk calculated using 2015 Office of Environmental Health Hazard Assessment Health Risk Assessment Guidance Manual.
Source: Lakes AERMOD View, 9.5 (2017).

The results of the HRA are based on the maximum receptor concentration over a 24-month construction exposure duration for off-site receptors, assuming 24-hour outdoor exposure.[36] Risk is based on the updated Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual:[37]

- Cancer risk for the maximum exposed off-site resident from only construction activities related to the proposed project were calculated to be 24.5 in a million and would exceed the BAAQMD's 10 in one million significance threshold. Utilizing the 2015 OEHHA Guidance Manual, the calculated total cancer risk for the off-site residents incorporates the individual risk for infant and childhood exposures into one risk value. Therefore, only one cancer risk value for off-site residents was determined using the 2015 OEHHA Guidance Manual for the preparation of HRAs
- For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for off-site sensitive receptors from the proposed project. Therefore, chronic non-carcinogenic hazards are within acceptable limits.
- The highest PM2.5 annual concentrations at the maximum exposed off-site sensitive resident would not exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$.

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[36] Under the 2015 Office of Environmental Health Hazard Assessment Air Toxics Hot Spots Program Guidance Manual, the exposure duration has changed from 70 years to 30 years for operational risk to residents; however, the risk is still averaged over a 70-year lifetime.

[37] Office of Environmental Health Hazard Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

Because cancer risk and $PM_{2.5}$ annual concentrations for the maximum exposed receptor would exceed BAAQMD's significance thresholds due to construction activities associated with the proposed project, the following mitigation measure is proposed:

Mitigation Measure AQ-2: Prior to issuance of any grading, demolition and/or building permits, the construction contractor(s) shall demonstrate the following, during construction, on all plans:

- The use of construction equipment fitted with Level 3 Diesel Particulate Filters for all equipment of 50 horsepower or more.
- Maintain a list of all operating equipment in use on the project site for verification by the City of Cupertino Building Division official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations.
- Ensure that all nonessential idling of construction equipment is restricted to 2 minutes, which is in compliance with California Air Resources Board Rule 2449, which limits idling to 5 minutes or less.
- Ensure that all construction plans submitted to the City of Cupertino Planning Department and/or Building Division clearly show the requirement for Level 3 Diesel Particulate Filters emissions standards for construction equipment over 50 horsepower.

Mitigation Measure AQ-2 would reduce the project's localized construction emissions, as shown in the Table 4-5 below. Implementation of Mitigation Measure AQ-2 is required BY General Plan EIR Mitigation Measure AQ-2b, which was previously adopted by the City and incorporated into the General Plan. The results indicate that, with mitigation, cancer risk and $PM_{2.5}$ impacts would be less than the BAAQMD's significance thresholds for all sensitive receptors. Therefore, the project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant with mitigation*.

TABLE 4-5 CONSTRUCTION RISK SUMMARY – MITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Receptor – Offsite Residences	1.5	0.004	0.01
BAAQMD Threshold	10	1.0	0.3
Exceeds Threshold?	**No**	**No**	**No**

Notes: Risks incorporate Mitigation Measure AIR-2, which includes using construction equipment with Level 3 Diesel Particulate Filters.
Cancer risk calculated using 2015 Office of Environmental Health Hazard Assessment Health Risk Assessment Guidance Manual.
Source: Lakes AERMOD View, 9.5 (2017).

Operation On-Site Community Risk and Hazards

When siting new sensitive receptors, the BAAQMD CEQA Guidelines recommend examining sources of TACs and $PM_{2.5}$ emissions within 1,000 feet that would adversely affect individuals within the proposed project. BAAQMD has developed screening tools to identify stationary and mobile sources of TACs and diesel-$PM_{2.5}$ in the vicinity of sensitive land uses, and developed screening thresholds for assessing potential health risks from these sources. Using the BAAQMD screening tools, it is determined that the project site is not within 1,000 feet of any sources of air emission (permitted or non-permitted stationary sources, freeways, or high volume roadways). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be *less than significant*.

Carbon Monoxide (CO) Hotspot Analysis

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm. The proposed project would not conflict with the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP) because it would not hinder the capital improvements outlined in the CMP or alter regional travel patterns. VTA's CMP must be consistent with MTC's/ABAG's *Plan Bay Area 2040*. An overarching goal of the regional *Plan Bay Area 2040* is to concentrate development in areas where there are existing services and infrastructure rather than locate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. The proposed project is an infill hotel development that is in close proximity to existing employment centers, roadways, transit, and bicycle and pedestrian routes (see Section XV, Transportation and Circulation, below), and for these reasons would be consistent with the overall goals of *Plan Bay Area 2040*. Implementation of the proposed project would result in the generation of 96 AM (morning) peak hour trips on a weekday and would not increase traffic volumes at affected intersections by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[38] Therefore, impacts associated with CO hotspots would be *less than significant*.

e) *Would the project create objectionable odors affecting a substantial number of people?*

Construction and operation of hotel developments would not generate substantial odors or be subject to odors that would affect a substantial number of people. The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Residential uses are not associated with foul odors that constitute a public nuisance.

During operation, the onsite restaurant could generate odors from cooking. Odors from cooking are not substantial enough to be considered nuisance odors that would affect a substantial number of people. Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain

[38] Bay Area Air Quality Management District (BAAQMD), 2011 Revised. California Environmental Quality Act Air Quality Guidelines.

odorous compounds.[39] In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Therefore, because existing sources of odors are required to comply with BAAQMD Regulation 7, impacts to siting of new sensitive land uses would be *less than significant.*

III. BIOLOGICAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on a plant or animal population, or essential habitat, defined as a candidate, sensitive or special-status species?	❒	■	❒	❒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community type?	❒	❒	❒	■
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act, through direct removal, filling, hydrological interruption, or other means?	❒	❒	■	❒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, their wildlife corridors or nursery sites?	❒	❒	■	❒
e) Conflict with any local ordinances or policies protecting biological resources?	❒	❒	■	❒
f) Conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	❒	❒	❒	■

[39] It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors because they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

EXISTING CONDITIONS

The project site and surrounding area has been urbanized and now supports roadways, structures, other impervious surfaces, areas of turf, and ornamental landscaping. Remnant native trees are scattered throughout these urbanized areas, together with non-native trees, shrubs, and groundcovers. Using data from the Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG)[40] habitat mapping program, the site is classified as an "urban area" that tends to have low to poor wildlife habitat value due to replacement of natural communities, fragmentation of remaining open space areas and parks, and intensive human disturbance. The diversity of urban wildlife depends on the extent and type of landscaping and remaining open space, as well as the proximity to natural habitat. Trees and shrubs used for landscaping provide nest sites and cover for wildlife adapted to developed areas. Typical native bird species include the mourning dove, scrub jay, northern mockingbird, American robin, brown towhee, American crow, and Anna's hummingbird, among others. Introduced species include the rock dove, European starling, house finch, and house sparrow. Urban areas can also provide habitat for several species of native mammals such as the California ground squirrel and striped skunk, as well as the introduced eastern fox squirrel and eastern red fox. Introduced pest species such as the Norway rat, house mouse, and opossum are also abundant in developed areas.

Wetlands and jurisdictional waters within the city boundary include creek corridors and associated riparian scrub and woodland, and areas of freshwater marsh around ponds, seeps, springs, and other waterbodies. Some remnant stands of riparian scrub and woodland occur along segments of the numerous creeks through the urbanized valley floor. The project site does not contain these creek corridors or contain other regulated waters.

The California Natural Diversity Database (CNDDB) has no record of special-status plant or animal species on the project site or urbanized areas surrounding the project site. There is a possibility that birds could nest in trees and other landscaping on the project site. The nests of most bird species are protected under the MBTA when in active use and there is a possibility that one or more raptor species protected under the MBTA and CDFG Code could nest on the project site. These include both the Cooper's hawk (*Accipiter cooperi*) and white-tailed kite (*Elanus leuocurus*), which have reported CNDDB occurrences within the city boundary, and also more common raptors such as red-tailed hawk, great horned owl, and American kestrel, all of which are protected by the MBTA and CDFG Code when their nests are in active use.

A recent tree inventory and assessment evaluated 68 trees on the site that represent 11 species.[41] Although several trees were newly planted, most of the trees on the project site are mature. According to

[40] The CALVEG system was initiated in January 1978 by the Region 5 Ecology Group of the US Forest Service to classify California's existing vegetation communities for use in statewide resource planning. CALVEG maps use a hierarchical classification on the following categories: forest; woodland; chaparral; shrubs; and herbaceous.

[41] Cupertino Village Boutique Hotel Site Tree Inventory & Assessment, prepared for the KIMCO Realty Corporation by Arborwell. November 27, 2017.

the tree inventory and assessment, all trees on the project site are likely protected trees.[42] While coast redwood is native to California, no trees of this species are indigenous to the project site.[43]

DISCUSSION

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on a plant or animal population, or essential habitat, defined as a candidate, sensitive or special-status species?*

As stated above in the existing conditions discussion, there are no known occurrences of special-status plant or animal species and no suitable habitat for such species on the project site, but there is a possibility that birds that are protected by the MBTA could nest in trees and other landscaping on the project site. The analysis in the General Plan EIR found that impacts to special-status species, including nesting birds, would be reduced to less than significant with mitigation. Accordingly, the implementation of Mitigation Measure BIO-1 would also be required for the project to reduce impacts to a *less-than-significant* level.

Mitigation Measure BIO-1: Nests of raptors and other birds shall be protected when in active use, as required by the federal Migratory Bird Treaty Act and the California Department of Fish and Game Code. The construction contractor shall indicate the following on all construction plans, if construction activities and any required tree removal occur during the breeding season (February 1 and August 31). Preconstruction surveys shall:

- Be conducted by a qualified biologist prior to tree removal or grading, demolition, or construction activities. Note that preconstruction surveys are not required for tree removal or construction, grading, or demolition activities outside the nesting period.
- Be conducted no more than 14 days prior to the start of tree removal or construction.
- Be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped.
- Document locations of active nests containing viable eggs or young birds.

Protective measures for active nests containing viable eggs or young birds shall be implemented under the direction of the qualified biologist until the nests no longer contain eggs or young birds. Protective measures shall include:

- Establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by the qualified biologist, taking into account the species of birds nesting, their tolerance for disturbance

[42] Cupertino Village Boutique Hotel Site Tree Inventory & Assessment, prepared for the KIMCO Realty Corporation by Arborwell. November 27, 2017.

[43] The City of Cupertino Municipal Code (section 14.80.050) defines "Protected" trees. See section 1.1.4.2, Zoning, of this chapter for a summary of the City's tree protection ordinance.

and proximity to existing development. In general, exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds.

- Monitoring active nests within an exclusion zone on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status.
- An increase in the radius of an exclusion zone by the qualified biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with California Department of Fish and Wildlife.
- The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active.

b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community type?*

Development of the proposed project would occur in an urbanized area where sensitive natural communities are absent; therefore, *no impact* would occur and no mitigation measures would be required.

c) *Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act, through direct removal, filling, hydrological interruption, or other means?*

Development of the proposed project would occur in urbanized areas where no wetlands or jurisdictional waters occur on or near the project site; therefore, *no impact* would occur directly.

Indirect impacts to wetlands and jurisdictional other waters include: 1) an increase in the potential for sedimentation due to construction grading and ground disturbance, 2) an increase in the potential for erosion due to increased runoff volumes generated by impervious surfaces, and 3) an increase in the potential for water quality degradation due to increased levels in non-point pollutants. Indirect impacts would be largely avoided through effective implementation of best management practices during construction and compliance with water quality controls. As discussed below in Section IX, Hydrology and Water Quality, of this Initial Study, water quality in stormwater runoff is regulated locally by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), which implements Provision C.3 of the Municipal Regional Storm Water National Pollutant Discharge Elimination System (NPDES) Permit (MRP) adopted by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Adherence to these permit conditions requires the project to incorporate treatment measures, an agreement to maintain them, and other appropriate source control and site design features that reduce pollutants in runoff to the maximum extent practicable. Many of the requirements involve low impact development practices such as the use of onsite infiltration that reduce pollutant loading. Incorporation of these measures can even improve on existing conditions. In addition, future development would be required to comply with the Municipal Regional NPDES Permit (CMC Chapter 9.18, Storm Water Pollution Prevention and Watershed Protection) and implement a construction Storm Water Pollution Prevention Plan (SWPPP) that require the incorporation of best management practices to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The indirect water quality-related issues are discussed further in Section IX, Hydrology and Water Quality, of this Initial Study. As discussed in

Impact HYDRO-1, water quality impacts would be less than significant. Accordingly, indirect impacts to wetlands and jurisdictional waters would be *less than significant* and no mitigation measures would be required.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species, their wildlife corridors or nursery sites?

Development on the project site would occur in an urbanized area where sensitive wildlife resources and important wildlife movement corridors are no longer present because of the existing development. Wildlife species common to urban and suburban habitat could be displaced where existing structures are demolished and landscaping is removed as part of future development, but these species are relatively abundant, and adapted to human disturbance. As discussed in Chapter 3, Project Description, of this Initial Study, the proposed project would retain all protected trees and would also include landscaping that would provide replacement habitat for wildlife species that may have adapted to the project site. Also discussed in Chapter 3, the project applicant would prepare a Tree Management Plan to address the removal and addition of trees on the site over time. Consistent with General Plan Policies ES-5.1, Urban Ecosystem, and Strategy, and ES-5.1.2, Built Environment, the Tree Management Plan would include native, drought tolerant landscaping that is beneficial to the environment. Therefore, project impacts on the movement of fish and wildlife, wildlife corridors, or wildlife nursery sites would be considered *less than significant* and no mitigation measures would be required.

e) Would the project conflict with any local ordinances or policies protecting biological resources?

As discussed in criteria (a) through (d), above, development of the project site would occur in an urbanized area where sensitive biological and wetland resources are generally considered to be absent, and no major conflicts with the relevant policies or ordinances related to biological resources in the Cupertino General Plan and/or CMC would occur. As discussed in the existing conditions above, the recent tree survey for the project site found that all of the existing on-site trees meet the City of Cupertino's criteria for protected status.[44] Therefore, the proposed project would be required to comply with the City's Tree Protection Ordinance, CMC Section 14.80.050, which requires tree removal permits to be obtained for the removal of any "protected tree," and replacement plantings to be provided as approved by the City. In addition if permitted, an appropriate in-lieu fee may be paid to the City of Cupertino as compensation for "protected trees" removed by the proposed project, where sufficient land area is not available on-site for adequate replacement and when approved by the City. Mandatory compliance with the City's Tree Protection Ordinance would insure impacts would be *less than significant*.

f) Would the project conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?

No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan includes the city or the project site, and the proposed project would not conflict with

[44] The City of Cupertino Municipal Code (section 14.80.050) defines "Protected" trees. See section 3.1.4.2, Zoning, of Chapter 3, Project Description, for a summary of the City's tree protection ordinance.

any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. *No impact* would occur and no mitigation measures would be required.

IV. CULTURAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	❒	❒	❒	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	❒	■	❒	❒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	■	❒	❒
d) Disturb any human remains, including those interred outside of formal cemeteries?	❒	❒	■	❒

EXISTING CONDITIONS

As shown in Table 4.4-2, *Cultural Resources in the Project Study Area and Vicinity*, and on Figure 4.4-1, *Cultural Resources*, of the General Plan EIR, there are no identified cultural resources on the project site. Specifically, the project site was developed in 1977 and no historical architectural resources are located on the project site.[45] Accordingly, the buildings on the project site do not fall within the over 45-year age limits established for historical resources that should be included in the California Department of Historic Preservation filing system.[46] A review of the University of California's Museum of Paleontology's fossil locality database was conducted for the City of Cupertino. No paleontological resources have been identified on the project site; however, the presence of Pleistocene deposits that are known to contain fossils indicates that the overall the city could contain paleontological resources.

DISCUSSION

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Under CEQA, both prehistoric and historic-period archaeological sites may qualify as historical resources.[47] Archaeological resources are addressed in criterion (b), and human remains are addressed below in criterion (d), below.

[45] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, page 1 (Summary).
[46] Office of Historic Preservation, Instructions For Recording Historical Resources, March 1995, page 2.
[47] California Code of Regulations, Title 14, Chapter 3, section 15064.5(c), Determining the Significance of Impacts on Historical and Unique Archeological Resources.

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As discussed above, the project site is currently developed in 1977. As described in the existing conditions above, the existing buildings do not fall within the over 45-year age limits established for historical resources that should be included in the OHP filing system the California Register of Historical Resources.[48] Accordingly, *no impact* to historical architectural resources would occur as a result of project development and no mitigation measures would be required.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

Historical and pre-contact archaeological deposits that meet the definition of historical resource under CEQA Section 21084.1 or CEQA Guidelines Section 15064.5 could be present at the project site and could be damaged or destroyed by ground-disturbing construction activities (e.g., site preparation, grading, excavation, and trenching for utilities) associated with development allowed under the proposed project. Should this occur, the ability of the deposits to convey their significance, either as containing information about prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired.

While the project site is currently developed and the cultural resources study prepared for the General Plan EIR[49] did not identify any known archaeological deposits on the project site, the site could still contain subsurface archaeological deposits, including unrecorded Native American prehistoric archaeological materials. Therefore, any project-related ground-disturbing activities have the potential to affect subsurface prehistoric archaeological resources that may be present. Implementation of Mitigation Measure CULT-1 would reduce impacts to unknown archaeological deposits to a *less-than-significant* level.

Mitigation Measure CULT-1: If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing (including grading, demolition and/or construction) activities:

- All work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5.
- If any find is determined to be significant, representatives from the City of Cupertino Building Department and the archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation.
- All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.
- In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City shall determine

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[48] Office of Historic Preservation, Instructions For Recording Historical Resources, March 1995, page 2.
[49] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Appendix D, Cultural Resources Data, Tom Origer & Associates on July 24, 2013.

whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations.

- If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be implemented.
- Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

c) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

As discussed above in existing conditions, while no paleontological resources have been identified within the project location, because the proposed project requires substantial excavation that could reach significant depths below the ground surface where no such excavation has previously occurred, there could be fossils of potential scientific significance and other unique geologic features that have not been recorded. Such ground-disturbing construction associated with development of the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features. Impacts to paleontological resource or site or unique geologic features would be reduced to a *less-than-significant* level with implementation of Mitigation Measure CULT-2.

Mitigation Measure CULT-2: The construction contractor shall incorporate the following in all grading, demolition, and construction plans:

- In the event that fossils or fossil-bearing deposits are discovered during grading, demolition, or building, excavations within 50 feet of the find shall be temporarily halted or diverted.
- The contractor shall notify the City of Cupertino Building Department and a City-approved qualified paleontologist to examine the discovery.
- The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5.
- The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find.
- If the project applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The excavation plan shall be submitted to the City for review and approval prior to implementation.

d) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Similar to the discussions under criteria (b) and (c), there are no known human remains on the project site; however, the potential to unearth unknown remains during ground disturbing activities associated with the construction of the project could occur. Any human remains encountered during ground-disturbing activities associated with the proposed project would be subject to federal, State, and local regulations to ensure no adverse impacts to human remains would occur in the unlikely event human remains are found.

Health and Safety Code Section 7050.5 and the CEQA Guidelines Section 15064.5(e) contain the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Santa Clara County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours, who would, in turn, notify the person the Native American Heritage Commission identifies as the Most Likely Descendant of any human remains. Further actions shall be determined, in part, by the desires of the Most Likely Descendant. The Most Likely Descendant has 48 hours to make recommendations regarding the disposition of the remains following notification from the Native American Heritage Commission of the discovery. If the Most Likely Descendant does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the Most Likely Descendant's recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.

Therefore, with the mandatory regulatory procedures described above, potential impacts related to the potential discovery or disturbance of any human remains accidently unearthed during construction activities associated with the proposed project would be *less than significant* and no mitigation measures would be required.

V. TRIBAL CULTURAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1.	❒	■	❒	❒

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.				

EXISTING CONDITIONS

Assembly Bill (AB) 52, which took effect on July 1, 2015, amended CEQA to add standards of significance that relate to Native American consultation and certain types of cultural resources. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2015. As of July 1, 2016, the Governor's Office of Planning and Research developed guidelines and the Native American Heritage Commission informed tribes which agencies are in their traditional area.

AB 52 requires the CEQA lead agency to begin consultation with a California Native American Tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if the Tribe requests in writing, to be informed by the lead agency through formal notification of the proposed projects in the area. The consultation is required before the determination of whether a negative declaration, mitigated negative declaration, or EIR is required. In addition, AB 52 includes time limits for certain responses regarding consultation. AB 52 also adds "tribal cultural resources" to the specific cultural resources protected under CEQA.[50] CEQA Section 21084.3 has been added, which states that "public agencies shall, when feasible, avoid damaging effects to any tribal cultural resources." Information shared by tribes as a result of AB 52 consultation shall be documented in a confidential file, as necessary, and made part of a lead agencies administrative record. In regards to AB 52, the City of Cupertino has not received any request from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified about projects in the city.

CEQA Section 21074.3(a) defines a tribal cultural resource is defined under AB 52 as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, and object with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historic Resources or included a local register of historical resources, or if the City, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a tribal cultural resource.

[50] California Environmental Quality Act Statute, Section 21074.

DISCUSSION

a) *Would the proposed project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe?

The discussion in Section VI, Cultural Resources, is applicable to impacts to tribal cultural resources. As discussed under criteria (b) and (d) in Section IV, no known archeological resources, ethnographic sites or Native American remains are located on the project site. As discussed under criterion (b), implementation of Mitigation Measure CULT-1 would reduce impacts to unknown archaeological deposits, including tribal cultural resources, to a less-than-significant level. As discussed under criterion (d), compliance with State and federal regulations would reduce the likelihood of disturbing or discovering human remains, including those of Native Americans. Therefore, implementation of Mitigation Measure CULT-1 and compliance with State and federal regulations related to the protection of human remains would reduce impacts to tribal cultural resources to a *less-than-significant* level.

Mitigation Measure TCR-1: Implement Mitigation Measure CULT-1.

VI. GEOLOGY AND SOILS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	❐	❐	■	❐
ii) Strong seismic ground shaking?	❐	■	❐	❐
iii) Seismic-related ground failure, including liquefaction?	❐	❐	■	❐
iv) Landslides, mudslides or other similar hazards?	❐	❐	■	❐
b) Result in substantial soil erosion or the loss of topsoil?	❐	❐	■	❐

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	❒	■	❒	❒
d) Be located on expansive soil, creating substantial risks to life or property?	❒	❒	■	❒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	❒	❒	❒	■

EXISTING CONDITIONS

Geology

Cupertino lies in the west-central part of the Santa Clara Valley, which is a broad, mostly flat alluvial plain that extends southward from San Francisco Bay. The surficial geology is described as young, unconsolidated Quaternary alluvium. The site is generally flat with elevation of 170 feet above mean sea level.[51]

Soils

Web-accessible soil mapping data compiled by the USDA's Soil Conservation Survey and the California Soil Resource Laboratory hosted by University of California at Davis was used to identify the major soil types on the project site. The predominant soil types for the project site are soils of the Urban Land-Flaskan, Urban-Land Stevens Creek, and Urban Land-Botella complexes generally formed on slopes of 0 to 2 percent. In almost all instances, these soils are reportedly deep and well drained, and are typified by low runoff.[52]

Fault Rupture

The San Francisco Bay Area is one of the most seismically active regions in the United States. The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones such as the San Andreas Fault system. Many of these zones exhibit a regional trend to the northwest. The site is not located within a State-designated Alquist-Priolo

[51] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

[52] UC Davis Soil Resource Laboratory, 2014. California Soil Resource Lab, Online Soil Survey, URL: http://casoilresource.lawr.ucdavis.edu/soilweb/, accessed on May 30, 2018.

Earthquake Fault Zone (known formerly as a Special Studies Zone) or a Santa Clara County-designated Fault Rupture Hazard Zone.[53] No active fault traces are known to cross the site.

Liquefaction

The site is not located within a seismically inducted liquefaction hazard zone, as mapped by the State of California and Santa Clara County. During cyclic ground shaking, such as seismic shaking during an earthquake, cyclically-induced stresses may cause increased pore water pressures within the soil matrix, resulting in liquefaction. Liquefied soil may lose shear strength that may lead to large shear deformations and/or flow failure. Liquefied soil can also settle as pore pressures dissipate following an earthquake.

Soils most susceptible to liquefaction are loose to moderately dense, saturated, non-cohesive soils with poor drainage, such as sands and silts with interbedded or capping layers of relatively low permeability soil.

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “free” face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane, and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil are displaced laterally toward the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Because of the low potential for liquefaction, the risk of lateral spreading at the site is also considered low.

DISCUSSION

a) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; (ii) Strong seismic ground shaking; (iii) Seismic-related ground failure, including liquefaction; (iv) Landslides, mudslides or other similar hazards?*

Fault Rupture

Only one Alquist-Priolo Earthquake Fault Zone has been mapped within the City of Cupertino, namely, the zone that flanks the San Andreas Fault in the southwestern most part of the city. Because the site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone or Santa Clara County-designated Fault Rupture Hazard Zone, and no active faults are known to traverse the site, the risk of surface fault rupture is considered low. The impacts from project development as they relate to surface fault rupture are considered *less than significant*. No mitigation measures would be required.

[53] Santa Clara County, 2012. Santa Clara County Geologic Hazard Zones, Map 18, updated October 26, 2012.

Strong Seismic Ground Shaking

The hazards posed by strong seismic ground shaking during a major earthquake, while variable, are nearly omnipresent in the San Francisco Bay Area. As discussed in the General Plan EIR, in the event of a large, magnitude 6.7 or greater seismic event, much of the city is projected to experience “strong” ground shaking, with the most intense shaking forecast for the northeast part of the city where the project is located. Adherence to applicable building code, including conformance to California Building Code (CBC) and the City’s building permit requirements would ensure that the impacts associated with strong seismic ground shaking are minimized to the maximum extent practicable. The impacts of project development as they relate to strong seismic ground shaking would be *less than significant*.

Liquefaction

As described above in Existing Conditions, the project site is not located within an area mapped by the State of California and Santa Clara County as having a high potential for seismically induced liquefaction. The potential for seismically induced liquefaction in the vicinity appears low, and is limited to a very narrow strip of alluvial deposits that flank Calabazas Creek approximately 0.80 miles east of the project site. Accordingly, impacts associated with project development as they may relate to seismically induced liquefaction would be *less than significant*.

Landslides

The site is generally flat with elevation of 170 feet above mean sea level.[54] The project site is not located within an area mapped by the State of California or Santa Clara County as having a high potential for seismically induced landslides. Therefore, impacts associated with project development as they may relate to seismically induced landslides would be *less than significant*.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Substantial soil erosion or loss of topsoil during construction could, in theory, undermine structures and minor slopes during development of the project site. However, compliance with existing regulatory requirements, such as the implementation of grading erosion control measures specified in the CBC and the CMC, would reduce impacts from erosion and the loss of topsoil.

Examples of these control measures are best management practices such as hydroseeding or short-term biodegradable erosion control blankets; vegetated swales, silt fences, or other forms of protection at storm drain inlets; post-construction inspection of drainage structures for accumulated sediment; and post-construction clearing of debris and sediment from these structures.

[54] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

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Section 16.08.110 of the CMC requires the preparation and submittal of *Interim Erosion and Sediment Control Plans* for all projects subject to City-issued grading permits, which would minimize the removal of topsoil, avoid overly steep cut and/or fill slopes, and protect existing vegetation during grading operations. These requirements are broadly applicable to residential development projects. Adherence to these regulations would help ensure that the impacts of project development as they relate to substantial soil erosion or loss of topsoil would be *less than significant*.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As discussed in criterion (a), the project site is not located within an area mapped as having significant potential for seismically induced liquefaction. Because of the low potential for liquefaction, the risk of lateral spreading at the site would also be low. Therefore, the impacts of project development as they relate to liquefaction and lateral spreading would be *less than significant* and no mitigation measures would be required.

The site is generally flat with elevation of 170 feet above mean sea level.[55] The properties surrounding the project site are also typified by low topographic relief. The impacts of project development as they relate to landslides would be *less than significant*.

d) Would the project be located on expansive soil, creating substantial risks to life or property?

Expansive soils can undergo dramatic changes in volume in response to variations in soil moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon can include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can develop wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils. Expansive soils are typically very fine-grained with a high to very high percentage of clay, typically montmorillonite, smectite, or bentonite clay.

The proposed project would be subject to the CBC regulations and provisions, as adopted in CMC Chapter 12.04 and enforced by the City during plan review prior to building permit issuance. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition, and also regulates grading activities, including drainage and erosion control. Thus, compliance with existing regulations and policies would ensure that the potential future development impacts permitted under the proposed project would be reduced. Therefore, the impacts of project development as they relate to expansive soils are considered *less than significant*.

[55] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?*

The development of the proposed project would not require the construction or use of septic tanks or alternative wastewater disposal systems. Therefore, there would be *no impact* from the proposed project associated with soils that are inadequate for the use of septic tanks or alternative wastewater disposal systems.

VII. GREENHOUSE GAS EMISSIONS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❐	❐	■	❐
b) Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❐	❐	■	❐

EXISTING CONDITIONS

Current development on the project site consists of a vacant 10,044-square-foot commercial building and the 3,385-square-foot Duke of Edinburgh Pub and Restaurant. The restaurant generates greenhouse gas emissions from transportation sources, energy use (natural gas and purchased energy), water use, generation of wastewater, generation of solid waste, and other sources such as landscaping equipment and architectural coatings referred to as area sources.[56] As discussed in Section XV, Transportation and Circulation, the existing restaurant generates approximately 1,636 average daily trips to the project site. Greenhouse gas emissions generated by the existing land uses are shown in Table 4-6 below.

DISCUSSION

a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this section measures the project's contribution to the cumulative environmental impact. Development of the proposed project would contribute to global climate change through direct and indirect emissions of GHG from transportation sources, energy use (natural gas and purchased energy), water use and wastewater generation, and solid waste generation. In addition, construction activities

[56] Sources that emit less than 10 tons annually of a single hazardous air pollutant or less than 25 tons annually of a combination of hazardous air pollutants. U.S. Environmental Protection Agency, Area Source Standards, https://www3.epa.gov/airtoxics/area/arearules.html, accessed October 1, 2018.

would generate a short-term increase in GHG emissions. The net increase in emissions generated by the project was evaluated using the CalEEMod, Version 2016.3.25. The total and net increase in GHG emissions associated with the proposed project are shown in Table 4-6.

TABLE 4-6 PROJECT GHG EMISSIONS

	GHG Emissions ($MTCO_2e$/Year)			
Category	Existing Emissions	Project Emissions	Percent of Total	Net Change from Existing
Area	<1	<1	1%	<1
Energy	217	848	44%	631
On-Road Mobile Sources	681	1,040	53%	360
Waste	6	53	2%	46
Water/Wastewater	6	6	1%	<1
Amortized Construction Emissions[a]	NA	22	1%	22
Total	**910**	**1,969**	**100%**	**1,059**
BAAQMD Emissions Threshold ($MTCO_2e$)				**1,100**
Exceeds BAAQMD Thresholds?				**No**

Note: Emissions may not total to 100 percent due to rounding. New buildings would be constructed to the 2016 Building & Energy Efficiency Standards (effective January 1, 2017); $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year.
a. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building, which is assumed to be 30 years.
Source: California Emissions Estimator Model (CalEEMod), Version 2016.3.25.

Construction Impacts

BAAQMD does not have thresholds of significance for construction-related GHG emissions, however, the BAAQMD advises that the lead agency should quantify and disclose GHG emissions that would occur during construction and make a determination on the significance of these construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals. Therefore, this impact discussion applies BAAQMD's project-level operation threshold of 1,100 million metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year) for construction, which is based on BAAQMD's operational-related threshold of 1,100 million $MTCO_2e$/year.[57] GHG emissions from construction activities are one-time, short-term emissions and, therefore, would not significantly contribute to long-term cumulative GHG emissions impacts of the proposed project. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation.[58] As shown in Table 4-6 above, when amortized over a 30-year project lifetime, average annual construction emissions from the proposed project would represent a nominal source of GHG emissions and would not

[57] Bay Area Air Quality Management District, 2017, *California Environmental Quality Act Air Quality Guidelines,* p.2-4, accessed July 31, 2018.

[58] International Energy Agency, 2008, *Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings,* March. While the BAAQMD CEQA Guidelines do not provide specific criteria in evaluating construction-related GHG emissions impacts, this methodology is consistent with the methodology utilized by the South Coast Air Quality Management District.

exceed BAAQMD's operational-related threshold. Construction emissions would be *less than significant* and no mitigation measures would be required.

Operational Impacts

As shown in Table 4-6 above, development of the proposed project would result in a net increase of GHG emissions of 1,059 $MTCO_2e$/year at opening year (2021), which would not exceed BAAQMD's bright-line threshold of 1,100 $MTCO_2e$ per year for operations. Therefore, project-related GHG emissions impacts would be *less than significant*.

b) *Would the project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Applicable plans adopted for the purpose of reducing GHG emissions include the CARB Scoping Plan, the MTC's/ ABAG's *Plan Bay Area 2040*, and Cupertino's *Climate Action Plan*. A consistency analysis with these plans is presented below.

CARB's Scoping Plan

In accordance with Assembly Bill 32 and Senate Bill 32 the CARB *2017 Climate Change Scoping Plan*[59] (Scoping Plan) contains the State's strategy to achieve 1990 level emissions by year 2020 and a 40 percent reduction from 1990 emissions by year 2030. The Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nevertheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the latest Scoping Plan (2017) include implementing Senate Bill 350, which expands the Renewables Portfolio Standard to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standard to 18 percent by 2030; implementing the *Mobile Source Strategy* to deploy zero-electric vehicle buses and trucks; implementation of the *Sustainable Freight Action Plan*; implementation of the *Short-Lived Climate Pollutant Reduction Strategy*, which reduces methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and black carbon emissions 50 percent below 2013 levels by 2030; continuing to implement Senate Bill 375; creation of a post-2020 Cap-and-Trade Program; and development of an *Integrated Natural and Working Lands Action Plan* to secure California's land base as a net carbon sink. Statewide GHG emissions reduction measures that are being implemented as a result of the Scoping Plan would reduce the proposed project's GHG emissions.

The proposed project would be constructed to achieve the standards in effect at the time of development and would not conflict with statewide programs adopted for the purpose of reducing GHG emissions. As stated above, while the measures in the State's Scoping Plan are not directly applicable to individual

[59] Note that the *2017 Climate Change Scoping Plan* is an update to the 2008 and 2014 Scoping Plans.

development projects, the project's GHG emissions would be reduced through compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the impact would be *less than significant*.

MTC's/ABAG's Plan Bay Area

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). To achieve MTC's/ABAG's sustainable vision for the Bay Area, the *Plan Bay Area 2040* land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. Although the proposed project is not within a PDA, as discussed in Section XII, Population and Housing, growth associated with the proposed project is consistent with ABAG projections and would not exceed regional population and employment projections (see Chapter 4, General Plan EIR Consistency Analysis, of this Initial Study). The proposed project is an infill development project that would result in an increase in land use intensity in a portion of the City that has access to existing infrastructure and services, including transit service (see Section XV, Transportation and Circulation). In addition, the proposed project would implement a Transportation Demand Management (TDM) program (see Section 3.2.2.4, Transportation Demand Management Program, in Chapter 3, Project Description, of this Initial Study) that would include, but is not limited to, transit passes for guest and employees, car share program for guests, and a shuttle service for hotel guests, employees, and when there is capacity can provide service to the community at large. Therefore, the proposed project would not conflict with the land use concept plan for the City of Cupertino identified in the *Plan Bay Area 2040* and the impact would be *less than significant*.

City of Cupertino Climate Action Plan

The *Cupertino Climate Action Plan* (CAP) is a strategic planning document that identifies sources of GHG emissions within the City's boundaries, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic goals, measures, and actions to reduce emissions from the energy, transportation and land use, water, solid waste, and green infrastructure sectors.

The emissions reduction strategies developed by the City followed the BAAQMD's CEQA Guidelines (2011) and the corresponding criteria for a Qualified Greenhouse Gas Emissions Reduction Program as defined by the BAAQMD, which in turn were developed to comply with the requirements of AB 32 and achieve the goals of CARB's *2008 Scoping Plan*. After the adoption of the CAP in January of 2015, the Legislature adopted SB 32 (September 2016) and CARB adopted the *2017 Climate Change Scoping Plan* (December 2017), aimed at meeting SB 32's GHG reduction goal of 40 percent below 1990 levels by 2030.

Qualified GHG Reduction Strategy

A qualified GHG reduction strategy adopted by a local jurisdiction should include the following elements, described in the State CEQA Guidelines Section 15183.5. BAAQMD's revised CEQA Guidelines provides the methodology to determine if a GHG reduction strategy meets these requirements.

A. Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area: Cupertino's CAP identifies a baseline GHG emissions inventory for year 2010 and business-as-usual forecasts for 2020, 2035, and 2050 for land uses within the City.

B. Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable: The City of Cupertino has established a goal of 15 percent below 2005 levels by 2020 and 35 percent below 2005 levels by 2035. The 2020 GHG reduction goal is in line with AB 32. However the 2030 goal was adopted prior to SB 32, which is 40 percent below 1990 levels; therefore, the 2030 goal is the standard.

C. Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area: The emissions sources calculated in the baseline GHG inventory include commercial, residential, and industrial electricity and natural gas use, on-road transportation, solid waste disposal, energy use related to water and wastewater, agricultural off-road equipment and emissions associated with fertilizer application, and off-road equipment use for construction and lawn and garden activities. GHG emissions from these activities were calculated from activity data such as kilowatt hours of electricity, therms of natural gas, tons of waste disposed, and vehicle miles traveled from trips with an origin or destination in the City of Cupertino.

D. Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level: The CAP has identified groups of measures and performance standards aimed at achieving these targets: Reduce Energy Use/Improve Facilities; Encourage Alternative Transportation/Convert Vehicle Fleet; Conserve Potable Water; Reduce Solid Waste; and Expand Green Infrastructure. The City's CAP strategies achieve the near-term (i.e., 2020) GHG reduction target. Strategies for the post-2020 targets were not quantified.

E. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels: The City has a sustainability coordinator which implements and tracks the City's GHG reduction strategies and progress toward GHG reduction targets. The City's sustainability team prepares annual reports on CAP implementation and progress as part of the monitoring program, including projects and policies, data and metrics, as well as inventory updates to determine if the plan is achieving its targeted goals.

F. Be adopted in a public process following environmental review: In January 2015, the City of Cupertino adopted an Addendum to the General Plan EIR, which found that that adoption of the City proposed CAP would not create any new or substantially more severe significant effects on the environment that were not analyzed in the General Plan EIR, and adopted the CAP.

Based on the analysis above, the City's CAP is a qualified GHG reduction plan for the AB 32 targets.

In addition, a specific project proposal is considered consistent with the Cupertino CAP if it complies with the "required" GHG reduction measures contained in the adopted CAP. Of these previously adopted GHG reduction measures, the measures applicable to the proposed project are the following:

- **Measure C-E-1 Energy Use Data and Analysis:** Increase resident and building owner/tenant/operator knowledge about how, when, and where building energy is used.
- **Measure C-W-1 SB-X7-7:** Implement water conservation policies contained within Cupertino's Urban Water Management Plan to achieve 20 percent per capita water reduction by 2020.
- **Measure C-SW-1 Zero Waste Goal:** Maximize solid waste diversion community-wide through preparation of a zero-waste strategic plan.
- **Measure C-SW-3 Construction & Demolition Waste Diversion Program:** Continue to enforce diversion requirements in City's Construction & Demolition Debris Diversion and Green Building Ordinances.

The proposed project would not make any changes to current City standards. Development in Cupertino, including the proposed project, is required to adhere to City-adopted policy provisions, including those contained in the adopted CAP. The City ensures that the provisions of the Cupertino CAP are incorporated into projects and their permits through development review and applications of conditions of approval as applicable. Therefore, the impact would be *less than significant*.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	❒	❒	■	❒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❒	❒	■	❒
c) Emit hazardous emissions or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	❒	❒	❒	■
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	❒	❒	❒	■
e) For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people living or working in the project area?	❒	❒	❒	■

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people living or working in the project area?	❒	❒	❒	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❒	❒	❒	■

EXISTING CONDITIONS

The search of the Department of Toxic Substance Control's EnviroStor Database and the GeoTracker database search did not reveal any hazardous materials or LUST sites on or within close proximity to the project site.[60] The project site, developed in 1977, does not contain any asbestos-containing materials or lead-based paint, which have been regulated in construction since the early 1970's.[61] There are no known hazardous materials sites located on the project site. Cupertino High School and Sedgwick Elementary School in the Cupertino Union School District are approximately 1.5 miles to the south, and Laurelwood Elementary School in the Santa Clara Unified School District is located approximately 1.5 miles to the northeast in the City of Santa Clara. There are no moderate, high, or very high fire hazard severity zones in the State Responsibility Areas in the vicinity of the project site. The nearest public airports are San Jose International Airport, approximately 5.1 miles to the northeast, and Palo Alto Airport, approximately 10.5 miles to the northwest. The nearest heliports are McCandless Towers Heliport, approximately 4.3 miles to the northeast, and County Medical Center Heliport, approximately 4.5 miles to the southeast. The nearest private airport is Moffett Federal Airfield, approximately 6.1 miles to the northwest.

DISCUSSION

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?*

Project Operation

The proposed project, a hotel, would not involve the routine transport or disposing of hazardous materials. Project operation would involve the use of small amounts of hazardous materials for cleaning

[60] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Chapter 4.7, Hazards and Hazardous Materials, Table 4.7-2, Hazardous Materials and LUST (leaking underground storage tanks) Sites.

[61] Northgate Environmental Management, 2017. Phase I Environmental Site Assessment, 10765 – 10801 North Wolfe Road, Cupertino, California. November 6, 2017, page 1 (Summary).

and maintenance purposes, such as cleansers, degreasers, pesticides, and fertilizers. These potentially hazardous materials would not be of a type or be present in sufficient quantities to pose a significant hazard to public health and safety or the environment. Furthermore, such substances would be used, transported, stored, and disposed of in accordance with applicable federal, State, and local laws, policies, and regulations. Any businesses that transport, generate, use, and/or dispose of hazardous materials in Cupertino are subject to existing hazardous materials regulations, such as those implemented by Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division and hazardous materials permits from the Santa Clara Fire Department (SCCFD). The SCCFD also conducts inspections for fire safety and hazardous materials management of businesses and multi-family dwellings, in accordance with the City of Cupertino Hazardous Materials Storage Ordinance in Title 9, Health and Sanitation, Chapter 9.12, Hazardous Materials Storage. Thus, associated impacts from the operational phase of the project would be *less than significant*.

Project Construction

Construction activities at the project site would involve the use of larger amounts of hazardous materials than would operation of the proposed project, such as petroleum-based fuels for maintenance and construction equipment, and coatings used in construction, which would be transported to the site periodically by vehicle and would be present temporarily during construction. These potentially hazardous materials would not be of a type or occur in sufficient quantities on-site to pose a significant hazard to public health and safety or the environment, and would their use during construction would be short-term. Additionally, as with proposed project operation, the use, transport, and disposal of construction-related hazardous materials would be required to conform to existing laws and regulations. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner, and would minimize the potential for safety impacts to occur. Consequently, associated impacts from construction of the proposed project would be *less than significant*.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As described in criterion (a), above, operation and construction of the proposed project would involve the storage and use of common cleaning substances, building maintenance products, paints, and solvents, as well as petroleum-based fuels for maintenance and construction equipment, and coatings used in construction. Also, as described in the existing conditions, all of the existing buildings on the project site were developed in 1977; thus, the buildings would not contain asbestos-containing materials and lead-based paints. An impact could occur if construction and operation of the proposed project creates conditions where hazardous materials could easily contaminate surrounding soil, water, or air. The most likely scenarios would be from rainwater runoff spreading contaminated waste. Stormwater runoff is discussed in Section IX, Hydrology and Water Quality, of this Initial Study and the impacts were found to be less than significant.

Project Operation

The proposed project, a hotel, is not considered the type of project that would create an unacceptable hazardous materials risk to the users of the site or the surrounding land uses. The Santa Clara County HMCD is the Certified Unified Program Agency (CUPA) for Santa Clara County including the City of Cupertino, and is responsible for enforcing Chapter 6.95 of the California Health and Safety Code. As the CUPA, Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division is required to regulate hazardous materials business plans (HMBP) and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk-management plans. The HMBP is required to contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of on development sites. The HMBP also contains an emergency-response plan, which describes the procedures for mitigating a hazardous release, procedures, and equipment for minimizing the potential damage of a hazardous materials release, and provisions for immediate notification of the California Emergency Management Agency and other emergency-response personnel, such as the SCCFD. Implementation of the emergency response plan facilitates rapid response in the event of an accidental spill or release, thereby reducing potential adverse impacts. Furthermore, Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division is required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release; and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances. Compliance with these regulations would ensure that the risk of accidents and spills is minimized to the maximum extent practicable during the operation of the proposed project. Consequently, associated impacts would be *less than significant*.

Project Construction

Similar to the operation of the proposed project, the type of construction materials and equipment would be considered standard for this type of development. All spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations. All contaminated waste would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Furthermore, strict adherence to all emergency response plan requirements of the Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division would be implemented through the duration of the construction of each individual development project. Therefore, substantial hazards to the public or the environment arising from the routine use of hazardous materials during project construction would not occur. Accordingly, impacts would *be less than significant*.

c) *Would the project emit hazardous emissions or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?*

There are no schools within one-quarter mile of the project site. Furthermore, the proposed project would not involve the storage, handling, or disposal of hazardous materials in sufficient quantities to pose a significant risk to the public. Thus, *no impact* related to hazardous emissions or hazardous material handling within one-quarter mile of a school would occur and no mitigation measures would be required.

d) *Would the project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?*

As stated in the existing conditions discussion above, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Accordingly, *no impact* would occur.

e) *For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people living or working in the project area?*

The project site is not within an airport land use plan or within 2 miles of a public use airport. Thus, there would be *no impact* related to public airport hazards.

f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people living or working in the project area?*

There are no private use airstrips or airports within 2 miles of the project site. Therefore, there would be *no impact* related to private airstrip hazards as a result of implementing the proposed project.

g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The City of Cupertino Office of Emergency Services is responsible for coordinating agency response to disasters and other large-scale emergencies in the City of Cupertino with assistance from the Santa Clara County Office of Emergency Services and the SCCFD. The Cupertino Emergency Operations Plan (EOP)[62] establishes policy direction for emergency planning, mitigation, response, and recovery activities within the city. The Cupertino EOP addresses interagency coordination, procedures to maintain communications with county and State emergency response teams, and methods to assess the extent of damage and management of volunteers.

The proposed project would not block roads and would not impede emergency access to surrounding properties or neighborhoods. Emergency vehicle access would be provided at two points; the hotel lobby along the western side of the project site and the hotel loading zone on the northern side, which is accessible through the driveway on the northern end of the project site.

During demolition and construction, vehicles, equipment, and materials would be staged and stored on a portion of the project site. The construction site and staging areas would be clearly marked, and construction fencing would be installed to prevent disturbance and safety hazards. No staging would occur in the public right-of-way. A combination of on- and off-site parking facilities for construction workers would be identified during demolition, grading, and construction. The proposed project would

[62] City of Cupertino, Office of Emergency Services. *Emergency Operations Plan.* September 2005.

not interfere with an adopted emergency response plan, or emergency evacuation plan; therefore, impacts would be *less than significant*.

h) *Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildland are adjacent to urbanized areas or where residences are intermixed with wildlands?*

The project site is fully developed and is surrounded by built-out urban uses. There are no very high fire hazard severity zones within the Local Responsibility Areas of Cupertino and there are no high or very high fire risk areas as shown on the City's adopted Wildland Urban Interface Fire Area map.[63] The proposed project would not subject people or structures to wildfire hazards, and *no impact* would occur.

IX. HYDROLOGY AND WATER QUALITY

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?	❐	❐	■	❐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).	❐	❐	■	❐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flooding on- or off-site.	❐	❐	■	❐
d) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	❐	❐	■	❐
e) Otherwise substantially degrade water quality?	❐	❐	■	❐
f) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place structures that would impede or redirect flood flows within a 100-year flood hazard area?	❐	❐	❐	■
g) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❐	❐	❐	■

[63] City of Cupertino Municipal Code, Title 16, Building and Construction, Chapter 16.74. Wildland Urban Interface Fire Area.

ENVIRONMENTAL ANALYSIS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
h) Potentially be inundated by seiche, tsunami, or mudflow?	❐	❐	❐	■

EXISTING CONDITIONS

The project site lies within the Calabazas Creek watershed. No creeks are present on the project site. In addition to the natural drainage system, a network of storm drains collects runoff from city streets and carries it to the creeks and San Francisco Bay.

The City of Cupertino Department of Public Works is responsible for the design, construction, and maintenance of City-owned facilities including public streets, sidewalks, curb, gutter, storm drains. The capacity of the storm drain facilities within the City of Cupertino were evaluated and documented in the 1993 Storm Drain Master Plan, which identifies the areas within the system that do not have the capacity to handle runoff during the 10-year storm event, which is the City's design standard. The project site is not located in an area where the storm drains are potentially deficient in conveying the 10-year storm.[64]

The project site, as does the entire city, lies within the Santa Clara Subbasin of the Santa Clara Valley Groundwater Basin. In 2012, approximately 40 percent of the water used in Santa Clara County was pumped from groundwater.[65] The rest of the water used in the County is purchased from the Santa Clara Valley Water District (SCVWD), which receives surface water from the State Water Project (SWP) and the Central Valley Project (CVP). Additional details on water usage and local water purveyors are provided in Section XVI, Utilities and Service Systems, of this Initial Study.

Santa Clara Valley streams do not receive discharges from industrial or municipal wastewater.[66] Industrial discharges are routed to municipal sanitary sewers and then to regional municipal wastewater treatment plants that discharge treated effluent to the tidal sloughs of San Francisco Bay. The National Pollutant Discharge Elimination System (NPDES) permit program was established by the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the United States from their municipal separate storm sewer systems (MS4s). Municipal storm water discharges in the City of Cupertino is subject to the Waste Discharge Requirements of the new Municipal Regional Permit (MRP; Order Number R2-2015-0049) and NPDES Permit Number CAS612008, which became effective on January 1, 2016. Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the State Water Regional Water Control Board (SWRCB)

[64] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Chapter 4.8, Hydrology and Water Quality, Table 4.8-3, Under Capacity Storm Drainage Infrastructure.

[65] Santa Clara Valley Water District, 2012. Annual Groundwater Report for Calendar Year 2012.

[66] Santa Clara Basin Watershed Initiative, 2003. *Volume 1, Watershed Characteristics Report,* http://www.scbwmi.org/ accessed May 30, 2018.

Construction General Permit (2009-0009-DWQ) as amended by 2010-0014-DWQ and 2012-0006-DWQ. Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are now submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) monitors surface water quality through implementation of the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) and designates beneficial uses for surface water bodies and groundwater within the Santa Clara Valley. The Basin Plan also contains water quality criteria for groundwater. Groundwater quality in the Santa Clara subbasin is generally considered to be good and water quality objectives are met in at least 95 percent of the County water supply wells without the use of treatment methods.[67]

The project site is not located in a FEMA-designated 100-year floodplain or Special Flood Hazard Area. The project site is not within a dam inundation zone. The City of Cupertino is more than 8 miles south of San Francisco Bay and is more than 100 feet above mean sea level, which places the city at a distance that is considered too far to be affected by a tsunami.[68] There are no large bodies of water within the City of Cupertino or near the project site; thus, the project site would not be impacted by a seiche.

DISCUSSION

a) Would the project violate any water quality standards or waste discharge requirements?

Because the project would disturb one or more acres during construction, the project applicant would be required to comply with Construction General Permit and submit PRDs to the SWRCB prior to the start of construction. The PRDs include a NOI and a site-specific construction SWPPP that describes the incorporation of best management practices to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. New requirements by the SWRCB would also require the project applicant to prepare a construction SWPPP that includes post construction treatment measures aimed at minimizing storm water runoff. With implementation of these measures, water quality impacts during construction would be *less than significant*.

In addition, all new development or redevelopment projects that create and/or replace 10,000 square feet or more of impervious surfaces would be required to incorporate source control, site design, and stormwater treatment measures into the project, pursuant to the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) C.3 requirements. The requirements include minimization of impervious surfaces, measures to detain or infiltrate runoff from peak flows to match pre-development conditions, and agreements to ensure that the stormwater treatment and flow control facilities are

[67] Santa Clara Valley Water District, 2012. Santa Clara Valley Water District, 2012. *2012 Groundwater Management Plan.*
[68] Association of Bay Area Governments, 2014. *Interactive Tsunami Inundation Map.* http://gis.abag.ca.gov/website/Hazards/?hlyr=tsunami accessed May 30, 2018.

maintained in perpetuity. The proposed project would implement a treatment system – two bioretention areas on the north and south side of the property totaling 2,309 square feet. Implementation of these measures and compliance with the C.3 requirements of the MRP would ensure that post-development impacts to water quality would be *less than significant.*

Adherence to applicable water quality regulations, preparation of a SWPPP, implementation of best management practices during construction, and compliance with the CMC would ensure that water quality standards are not violated during construction. Implementation of stormwater site design, source control, and stormwater treatment measures and compliance with C.3 provisions of the MRP and the City of Cupertino's stormwater requirements would result in less-than-significant impacts during operation of the project. Consequently, potential impacts associated with water quality during construction and operation would be *less than significant*.

b) *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?*

The project would be connected to municipal water supplies and does not propose any groundwater wells on the property. The project site is supplied by California Water Service Company (Cal Water), which obtains its water from groundwater production (35 percent) and purchases of surface water from the Santa Clara Valley Water District. The 2015 *Urban Water Management Plan* for the Los Altos Suburban District, which includes the area for the project site, states that there is sufficient water for their customers for normal, single-dry, and multiple-dry years and that additional groundwater can be pumped to meet demand through 2040.[69] Therefore, the project would not result in a depletion of groundwater supplies or result in a lowering of groundwater levels. Water supply is discussed in Section XVI, Utilities and Service Systems, below. Furthermore, due to the project's location, the development of the proposed project would not interfere with groundwater recharge that takes place in the McClellan Ponds recharge facility located within the City of Cupertino or the creeks and streams that run through the city. Therefore, the project would have a *less-than-significant* impact to groundwater recharge.

The proposed project would be located on a site that is already developed and currently has a high percentage of impervious surfaces. The proposed project would result in a decrease in the amount of impervious surfaces of approximately 2,034 square feet as compared to existing conditions. The project would install two bioretention areas and multiple landscaped areas, which would contribute to groundwater recharge by infiltration. As a result, the project would result in a decrease in the amount of runoff from the property. Therefore, the project would have a *less than significant* impact on groundwater supplies and groundwater recharge and no mitigation measures are needed.

[69] California Water Service Company, 2015. *2015 Urban Water Management Plan, Los Altos Suburban District.*

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flooding on- or off-site?*

The proposed project would take place within the boundaries of a fully developed site that is currently connected to the City's storm drain system. The proposed redevelopment does not involve the alteration of any natural drainage channels or any watercourse. As shown on Figure 3-18 in Chapter 3, Project Description, of this Initial Study, the proposed project would provide bioretention water treatment areas throughout the project site (see Figures 3-17 and 3-18 in Chapter 3 of this Initial Study). These would collect runoff from roof areas, parking lots, sidewalks and streets for treatment and flow control prior to discharge into the internal storm drain system, which connects to the City's storm drain system in North Wolfe Road and Pruneridge Avenue.

The project applicant would be required, pursuant to the C.3 provisions of the MRP, to implement construction phase best management practices, post-construction design measures that encourage infiltration in pervious areas, and post-construction source control measures to help keep pollutants out of stormwater. In addition, post-construction stormwater treatment measures would be required since the project would create and/or replace more than 10,000 square feet of impervious surface. These measures would reduce the amount of stormwater runoff from the project.

During construction, the project applicant would be subject to the SWRCB Construction General Permit requirements, including preparation of a SWPPP. The SWPPP includes erosion and sediment control measures to stabilize the site, protect slopes and channels, control the perimeter of the site, minimize the area and duration of exposed soils, and protect receiving waters adjacent to the site.

Once constructed, the requirements for new development or redevelopment projects include source control measures and site design measures that address stormwater runoff and would reduce the potential for erosion or siltation. In addition, Provision C.3 of the MRP would require the project to implement stormwater treatment measures to contain site runoff, using specific numeric sizing criteria based on volume and flow rate.

With implementation of these erosion and sediment control measures and regulatory provisions to limit runoff for new development sites, the proposed project would not result in significant increases in erosion and sedimentation or contribute to flooding on-site or off-site and impacts would be *less than significant*.

d) *Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*

There are two potential impacts to stormwater runoff hydrology with urban development. Impervious surfaces, such as roads, sidewalks, and buildings prevent the natural infiltration of stormwater into the soil and thus create higher runoff volumes. In addition, more rapid transport of runoff over impermeable surfaces combined with higher runoff volumes result in elevated peak flows. This increase in flows could adversely impact stormwater drainage systems.

As stated above in criterion (b), the proposed project involves construction of a hotel on an existing developed property that is currently connected to the City's storm drain system. The proposed project would result in a decrease of approximately 2,034 square feet of impervious surfaces over existing conditions and would install bioretention areas on the project site as shown on Figures 3-17 and 3-18 in Chapter 3 of this Initial Study. This reduction in pervious surface would reduce the amount of runoff when compared to existing conditions resulting in less demand to the existing storm drain system. The bioretention areas would provide both treatment of site runoff, reduction in peak flow rates, and flow control prior to discharge to the City's storm drain system. Furthermore, as described above in the existing conditions section, the project site is not located in an area where the storm drains are potentially deficient in conveying the 10-year storm. The existing storm drain system would be able to handle the stormwater flow from the site and the impact to stormwater drainage systems would be less than significant. In addition, with the implementation of stormwater treatment measures, the project would not provide substantial additional sources of polluted runoff and the impact would be *less than significant.*

e) *Would the project otherwise substantially degrade water quality?*

As required by storm water management guidelines discussed under criterion (a), best management practices and low impact development measures would be implemented across the project site during both construction and operation of the proposed project. These measures would control and prevent the release of sediment, debris, and other pollutants into the storm drain system. Implementation of best management practices during construction would be in accordance with the provisions of the SWPPP, which would minimize the release of sediment, soil, and other pollutants. Operational best management practices would be required to meet the C.3 provisions of the MRP and these requirements include the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system. The proposed treatment measures would include the use of bioretention areas to treat and detain runoff prior to discharge to the City's storm drain system. With implementation of these best management practices and low impact development measures in accordance with City and MRP requirements, the potential impact on water quality would be *less than significant.*

f) *Would the project place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place structures that would impede or redirect flood flows within a 100-year flood hazard area?*

The project would not result in the development of residential structures in a FEMA-designated 100-year floodplain or Special Flood Hazard Area (SFHA). *No impact* would occur and no mitigation measures would be required.

g) *Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

The project site is in the dam inundation zone for the Stevens Creek Reservoir Dam. Dam inundation zones are based on the highly unlikely scenario of a catastrophic dam failure occurring in a very short period of time. The General Plan EIR assessed the risk to people and structures in Cupertino as a result of a failure of the Stevens Creek Reservoir Dam. This analysis determined that the potential risk was less than significant based on existing policies and regulations.[70] The proposed project was evaluated as a hotel development site under the General Plan EIR and as such, this finding is applicable to the proposed project. Existing State and local regulations address the potential for flood hazards as a result of dam failure. The Stevens Creek Reservoir is under the jurisdiction of the Department of Safety of Dams which conducts annual inspections and reviews all aspects of safety. The dam has been assessed for seismic stability and was determined to be capable of withstanding the maximum credible earthquake. Dam owners also maintain Emergency Action Plans (EAPs) that include procedures for damage assessment and emergency warnings. In addition, the City of Cupertino, in conjunction with Santa Clara County, addressed the possibility of dam failure in the Local Hazard Mitigation Plan (LHMP), which also provides emergency response actions. The probability of dam failure is extremely low and the City of Cupertino and Santa Clara County have never been impacted by a major dam failure. Moreover, analysis in the General Plan EIR determined that the potential risk was less than significant based on existing policies and regulations. Therefore, implementation of the project would not expose people or structures to a significant risk of loss, injury, or death in the case of dam failure and the impact is *less than significant.* No mitigation measures would be required.

h) Would the project potentially be inundated by seiche, tsunami, or mudflow?

The project site is not located in close proximity to San Francisco Bay or the Pacific Ocean, and is not within a mapped tsunami inundation zone.[71] Because there are no large bodies of water, such as reservoirs or lakes, in the vicinity of the project site, there would be no potential for seiches to impact the project site. In addition, the site is in a relatively flat area of the City and is outside of the ABAG mapped zones for earthquake-induced landslides or debris flow source areas.[72] Therefore, *no impact* would occur with respect to these issues.

X. LAND USE

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Physically divide an established community?	❐	❐	❐	■

[70] City of Cupertino, certified General Plan Amendment, Housing Element Update, and Associated Rezoning EIR, State Clearinghouse Number 2014032007. December 4, 2014, Chapter 4.8, Hydrology and Water Quality.

[71] Association of Bay Area Governments, 2016. *Interactive Tsunami Inundation Map.* http://gis.abag.ca.gov/website/Hazards/?hlyr=tsunami accessed on January 20, 2016.

[72] Association of Bay Area Governments, 2016. Rainfall-Induced Landslides, Debris Flow Source Areas and Earthquake Induced Landslides. Accessed at http://resilience.abag.ca.gov/landslides/ on January 20, 2016.

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	■	❒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	❒	❒	❒	■

EXISTING CONDITIONS

General Plan

The General Plan land use designation is Commercial/Residential. The maximum height of 60 feet is permitted for buildings located to the west of North Wolfe Road. The project is located in the North Vallco Gateway, which is within the North Vallco Park Special Area. As described in Chapter 2, Planning Areas, of the General Plan, the North Vallco Park Special Area is an important employment center for Cupertino and the region. The North Vallco Gateway includes two hotels, the Cupertino Village Shopping Center west of North Wolfe Road, and the Hamptons Apartment complex east of North Wolfe Road. The North Vallco Park Special Area is envisioned to become a sustainable office and campus environment surrounded by a mix of connected, high-quality and pedestrian-oriented neighborhood center, hotels and residential uses. Taller building heights and additional density may be allowed in the North Vallco Gateway.

Zoning

The project site is within the Planned Development with Residential (P(CG,Res)) zoning district. As described in CMC Section 19.80.010,[73] the planned development zoning district is intended to provide a means of guiding land development or redevelopment of the city that is uniquely suited for planned coordination of land uses. Development in this zoning district provides for a greater flexibility of land use intensity and design because of accessibility, ownership patterns, topographical considerations, and community design objectives. This zoning district is intended to accomplish the following:

- Encourage variety in the development pattern of the community.
- Promote a more desirable living environment.
- Encourage creative approaches in land development.
- Provide a means of reducing the amount of improvements required in development through better design and land planning.
- Conserve natural features.
- Facilitate a more aesthetic and efficient use of open spaces.

[73] Cupertino Municipal Code, Title 19, Zoning, Chapter 19.80, Planed Development, section 19.80.010, Purpose.

- Encourage the creation of public or private common open space.

All planned development districts are identified on the zoning map with the letter coding "P" followed by a specific reference to the general type of use allowed in the particular planning development zoning district.

The project site does not require specific front, side, or rear yard setbacks unless the lot abuts any residential or agricultural zones. The project site must still adhere to general setback, including the General Plan slope line requirement of 1:1, requirement for sufficient space for adequate light, requirement for air and visibility at intersection, and requirement for general conformity to yard requirements of adjacent or nearby zones, lot or parcels.

DISCUSSION

a) Would the project physically divide an established community?

Because the development of the proposed project would occur on a site that is currently developed, would retain the existing roadway patterns, and would not introduce any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers, the project would not physically divide an established community. Therefore, *no impact* would occur.

b) Would the project conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The proposed project would develop a hotel development with a five-story building, which would be consistent with the types of development envisioned in the General Plan for the North Vallco Special Area and North Vallco Gateway. The proposed project would be approximately 60 feet tall at the top of the roofline, with the exception of the rooftop mechanical equipment and utility structures, which would exceed the 60-foot height limit. Accordingly, as described above in the existing conditions discussion, the proposed project would be consistent with types of development specified in the General Plan. Additionally, the proposed project would have an approximate front yard setback of 60 feet from the property line (with a 1:1 slope line from the face of the curb), side setbacks of 8 feet on the south side and 11 feet on the north side, and rear setback of 90 feet, which comply to the minimum 1:1 slope line required per the General Plan and side and rear setback of 0 feet allowed by the General Commercial ordinance. Therefore, impacts would be *less than significant*.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

As discussed in the General Plan EIR, the City of Cupertino is located outside the boundaries of the Santa Clara Valley Habitat Plan. The city is not located within any other habitat conservation plan or natural community conservation plan and would not conflict with any such plan. Therefore, *no impact* would occur.

XI. NOISE

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or other applicable standards?	❒	❒	■	❒
b) Expose people to or generate excessive groundborne vibration or ground borne noise levels?	❒	❒	■	❒
c) Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	■	❒
d) Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	■	❒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	■
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	■

EXISTING CONDITIONS

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, State of California, and City of Cupertino have established criteria to protect public health and safety and to prevent disruption of certain human activities. Noise-related terminology/descriptors, pertinent existing regulations and Cupertino General Plan Health and Safety Element guidelines, calculations for traffic noise levels, and calculations for construction noise and vibration levels can be found in Appendix C, Noise Data, to this Initial Study.

The principal noise sources affecting the project site are traffic noise from I-280 and North Wolfe Road and from stationary noise sources from exterior mechanical and heating, ventilation, and air conditioning (HVAC) equipment noise from the on-site and surrounding buildings. The nearest public airports are San Jose International Airport, approximately 5.1 miles to the northeast, and Palo Alto Airport, approximately 10.5 miles to the northwest. The nearest heliports are Mc Candless Towers Heliport, approximately 4.3 miles to the northeast, and County Medical Center Heliport, approximately 4.5 miles to the southeast. The nearest private airport is Moffett Federal Airfield, approximately 6.1 miles to the northwest.

DISCUSSION

a) *Would the project expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or other applicable standards?*

A significant stationary-source impact would occur if the activities or equipment at the proposed project site produce noise levels at nearby sensitive receptors in excess of local standards.

With respect to projected-related increases, noise impacts can be broken down into three categories. The first is "audible" impacts, which refer to increases in noise level that are perceptible to humans. Audible increases in general community noise levels generally refer to a change of 3 decibels (dB) or more since this level has been found to be the threshold of perceptibility in exterior environments. The second category, "potentially audible" impacts, refers to a change in noise level between 1 and 3 dB. The last category includes changes in noise level of less than 1 dB that are typically "inaudible" to the human ear except under quiet conditions in controlled environments. Only "audible" changes in noise levels at sensitive receptor locations (i.e., 3 dB or more) are considered potentially significant. Note that a doubling of traffic flows (i.e., 10,000 vehicles per day to 20,000 per day) would be needed to create a 3 dB increase in traffic-generated noise levels. An increase of 3 dB is often used as a threshold for a substantial increase.

Project-Related Stationary Noise

The exterior mechanical and HVAC equipment associated with the proposed use are expected to be similar to the equipment at surrounding commercial, multi-family residential, and hotel uses. Typical HVAC units range from approximately 70 to 75 dBA L_{eq} at a distance of 3 feet. Future mechanical equipment associated with the proposed hotel would be located at least 70 feet from the nearest residential receptor (Arioso Apartments to the west). At this distance, the sound pressure level associated with a common central air conditioning unit would be reduced to approximately 48 dBA or less. Future mechanical equipment associated with the proposed hotel would be located at least 45 feet from the nearest nonresidential receptor (commercial uses to the north). At this distance, the sound pressure level associated with a common central air conditioning unit would be reduced to approximately 51 dBA or less. Thus, the noise level associated with future central air conditioning units would be below CMC Section 10.48.040, limiting noise to 50 dBA at nearby residential uses during the nighttime and to 55 dBA at nearby commercial uses. In addition, the rooftop mechanical equipment would be within enclosures, which would further attenuate the sound emanating from the mechanical equipment.

Noise from sources such as people talking, employees using outdoor common areas, or property maintenance may also contribute to the total noise environment within the direct vicinity of the proposed project site. However, these are commonly associated with commercial uses that already exist on the project site. As mentioned above, noise sources associated with the maintenance of real property is exempted from the provisions of the CMC, provided said activities take place between the hours of 8:00 a.m. to 8:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends and holidays. Therefore, impacts from stationary noise sources, and occasional property maintenance activities associated with the proposed project would be *less than significant*.

Project-Related Traffic Noise

The peak hour traffic volumes along roadways in the project area were provided for the proposed project. To determine the permanent traffic noise level increase, the Existing Plus Project traffic volumes were compared to the Existing traffic volumes. The permanent noise level increase was estimated to be less than 1 dBA on study roadway segments. Since the permanent noise level increase due to project-generated traffic increase at the surrounding noise-sensitive receptors would be less than 1 dBA, the proposed project would not cause a substantial permanent noise level increase at the surrounding noise-sensitive receptors and would have a *less-than-significant* impact.

b) Would the project expose people to or generate excessive groundborne vibration or ground borne noise levels?

Operations Vibration

Operation of the proposed project would not generate substantial levels of vibration because there are no notable sources of vibrational energy associated with the project. Thus, operation of the proposed project would not result in *less than significant* groundborne vibration impacts. No mitigation measures would be required.

Construction Vibration

Construction activities generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Table 4-7 lists reference vibration levels for different types of commonly used construction equipment.

TABLE 4-7 CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Equipment	Approximate PPV Velocity at 25 Feet (in/sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: Federal Transit Administration 2008.

It is expected that groundborne vibration from project-related construction activities would cause only intermittent, localized intrusion on surrounding residents and residential structures. Project-related demolition and construction activities most likely to cause vibration impacts include:

- **Heavy Construction Equipment.** Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as large equipment would operate close enough to any residences to cause a vibration impact.

- **Trucks.** Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Proposed construction would include grading, which would include equipment such as loaders. Paving activities may also generate high levels of construction vibration and would include equipment such as pavers and rollers. Some of these equipment types may generate substantial levels of vibration at close distances. Using the vibration source level of construction equipment provided in Table 4-7 above and the construction vibration assessment guidelines published by the FTA, the vibration impacts associated with the proposed project were assessed in terms of potential architectural damage due to vibration.

Construction Vibration-Induced Architectural Damage

The City does not have specific, vibration-related standards. Thus, project-related construction vibration was evaluated for its potential to cause minor architectural damage[74] based on Federal Transit Administration's (FTA) architectural damage criteria. For reference, a peak particle velocity (PPV) of 0.2 inches/second is used as the limit for "non-engineered timber and masonry buildings" (which would apply to the surrounding structures). Small construction equipment generates vibration levels less than 0.1 PPV in/sec at 25 feet away. The term 'architectural damage' is defined as minor surface cracks (in plaster, drywall, tile, or stucco) or the sticking of doors and windows. This is below the severity of 'structural damage' which entails the compromising of structural soundness or the threatening the basic integrity of the building shell. Building damage is typically not a concern for most projects, with the occasional exception of blasting and pile driving during construction. No blasting, pile driving, or hard rock ripping/crushing activities would be required during project construction. Since vibration-induced architectural damage could result from an instantaneous vibration event, distances are measured from the receptor façade to the nearest location of potential construction activities. Table 4-8 shows the vibration levels from typical earthmoving construction equipment at the nearest receptors.

TABLE 4-8 ARCHITECTURAL DAMAGE VIBRATION LEVELS FROM CONSTRUCTION EQUIPMENT

	Peak Particle Velocity in inches per second				
Equipment	PPV Limit	Arioso Apartments to West (70 feet)	Commercial Uses to North (45 feet)	Hilton Garden Inn to South (125 feet)	Good Samaritan Preschool to Northwest (750 feet)
Vibratory Roller[a]	0.20	0.05	0.09	0.02	<0.01
Large Bulldozer	0.20	0.02	0.04	0.01	<0.01
Loaded Trucks	0.20	0.02	0.03	0.01	<0.01
Jackhammer	0.20	0.01	0.01	<0.01	<0.01
Small Bulldozer	0.20	<0.01	<0.01	<0.01	<0.01

Note: Distances are from the nearest portion of potential construction activity to the nearest receptor building within each land use type.
a. This analysis shows a "vibratory roller", which may be more vibration-intensive than the roller used during the paving phase
Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment, 2006.

[74] The term architectural damage is typically used to describe effects such as cracked plaster, cracks in drywall seams, sticking doors or windows, loosened baseboard/crown moldings, and the like.

Construction-generated vibration levels at the nearest receptors would be less than the vibration damage criteria for "non-engineered timber and masonry buildings," per FTA guidelines. Impacts related to architectural damage due to construction vibration would not be significant and mitigation is not necessary.

c) *Would the project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

As presented in criterion (a) above, project-generated operational noise from traffic, stationary noise sources (i.e., mechanical systems), and operational activities will not result in a substantial permanent increase in ambient noise levels. Therefore, these on-going activities would generate *less-than-significant* noise impacts and no mitigation measures would be required.

d) *Would the project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

The total duration for project construction would be approximately 2 years. In terms of the proposed construction activities, demolition, site preparation, rough grading, and site paving activities are expected to generate the highest noise levels since they involve the largest and most powerful equipment. Construction equipment for the proposed project would include equipment such as concrete saws, graders, excavators, scrapers, tractor/loader/backhoes, paving equipment, forklifts, rollers, and a crane.

Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment. The following discusses construction noise impacts to the off-site sensitive receptors.

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along Pruneridge Avenue and North Wolfe Road. Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived. Therefore, noise impacts from construction vehicles would be less than significant. Therefore, noise impacts from construction-related truck traffic would be *less than significant* at noise-sensitive receptors along the construction routes and no mitigation measures would be required.

Construction Equipment

According to CMC Section 10.48.053, construction is allowed during "daytime hours" (7:00 a.m. to 8:00 p.m. Monday through Friday, and 9:00 a.m. to 6:00 p.m. on weekends), provided that such construction activities do not exceed 80 dBA at the nearest affected property or individual equipment items do not exceed 87 dBA at 25 feet.[75] Construction is prohibited on holidays and within 750 feet of residential areas on weekends, unless a special exception has been granted, and during nighttime hours unless it meets the nighttime noise level standards. Even with these restrictions, project construction would temporarily increase ambient noise. However, noise levels would subside again after construction.

Noise generated by onsite construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction stage is determined by combining the L_{eq} contributions from each piece of equipment used at a given time, while accounting for the on-going time-variations of noise emissions (commonly referred to as the usage factor). Heavy equipment, such as a bulldozer or a loader, can have maximum, short-duration noise levels in excess of 80 to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on what specific activity is being performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dB per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and/or shielding/scattering effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site with different loads and power requirements. Noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the acoustical center of the general construction site) to the property line of the nearest receptors. Although construction may occur across the entire phase area, the area around the center of construction activities best represents the potential average construction-related noise levels at the various sensitive receptors.

Using information provided by the applicant, the expected construction equipment mix was estimated and categorized by construction activity using the Federal Highway Administration Roadway Construction Noise Model. The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 4-9.

[75] These 80 and 87 dBA sound levels are taken to be the maximum continuous or repeated peak value measured by the use of a sound level meter and the "A" weighting network and the "SLOW" metering response, per CMC section 10.48.010.

TABLE 4-9 PROJECT-RELATED CONSTRUCTION NOISE, ENERGY-AVERAGE (L_{EQ}) SOUND LEVELS, DBA

	Sound Level at Various Distances from Construction Activities, dBA L_{eq}
Construction Activity Phase	Residential Uses to West (125 Feet)[a]
Demolition	77
Site Preparation	77
Grading	77
Building Construction	73
Paving	74

a. As measured from the acoustical center of the construction site to the nearest property line

Construction activities would increase noise levels at and near the proposed area of improvements. The highest expected construction-related noise levels—up to approximately 77 dBA L_{eq}—would occur at the residential receptors to the west during the demolition, site preparation, and grading phases, which would be less than the 80 dBA L_{eq} limit in the CMC. However, the CMC also requires that no individual piece of equipment generate noise levels above 87 dBA at a distance of 25 feet. Conservatively assuming that this requirement is in terms of maximum noise level (L_{max}), the concrete saws, tractor/loader/backhoes, graders, and scrapers would exceed this limit. This would be considered a potentially significant impact. With implementation of Mitigation Measure NOISE-1, project-related construction noise impacts to the surrounding residences would be *less than significant*.

Mitigation Measure NOISE-1: The following shall be incorporated in all demolition, grading, and construction plans, as required by the CMC, construction activities shall take place only during daytime hours of 7:00 a.m. and 8:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends. In addition, the following best management practices shall be observed:

- At least 90 days prior to the start of construction activities, all offsite businesses and residents within 300 feet of the project site will be notified of the planned construction activities. The notification will include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification should include the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint.
- The project applicant and contractors will prepare a Construction Noise Control Plan prior to issuance of any grading, demolition, and/or building permits. The details of the Construction Noise Control Plan, including those details listed herein, will be included as part of the permit application drawing set and as part of the construction drawing set.
- At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the public, which includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that

are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she will investigate, take appropriate corrective action, and report the action to the City.

- During the entire active construction period, equipment and trucks used for project construction will utilize the best available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.
- Include noise control requirements for equipment and tools, including concrete saws, to the maximum extent feasible. Such requirements could include, but are not limited to, erecting temporary plywood noise barriers between areas where concrete saws will be used and nearby sensitive receptors; performing work in a manner that minimizes noise; and undertaking the noisiest activities during times of least disturbance to nearby sensitive receptors.
- During the entire active construction period, stationary noise sources will be located as far from sensitive receptors as possible, and they will be muffled and enclosed within temporary sheds, or insulation barriers or other measures will be incorporated to the extent feasible.
- During the entire active construction period, noisy operations will be conducted simultaneously to the degree feasible in order to reduce the time periods of these operations.
- Select haul routes that avoid the greatest amount of sensitive use areas and submit to the City of Cupertino Public Works Department for approval prior to the start of the construction phase.
- Signs will be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment will be turned off if not in use for more than 5 minutes.
- During the entire active construction period and to the extent feasible, the use of noise producing signals, including horns, whistles, alarms, and bells will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The proposed project is not located within an airport land use plan or within 2 miles of an airport. The nearest public airports are San Jose International Airport, approximately 5.1 miles to the northeast, and Palo Alto Airport, approximately 10.5 miles to the northwest. At these distances from the aircraft facilities, the proposed project would not expose residents or patrons to excessive noise levels from aircraft noise. *No impacts* related to noise from public airport would occur and no mitigation measures are necessary.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The proposed project is not located within the immediate vicinity of a private airstrip or heliport. The nearest heliports are Mc Candless Towers Heliport, approximately 4.3 miles to the northeast, and County Medical Center Heliport, approximately 4.5 miles to the southeast. The nearest private airport is Moffett Federal Airfield, approximately 6.1 miles to the northwest. At these relatively long distances from the aircraft facilities, the proposed project would not expose residents to excessive noise levels from private airstrip or heliport noise. *No impacts* related to noise from private airstrip would occur and no mitigation measures would be required.

XII. POPULATION AND HOUSING

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Induce substantial unexpected population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❐	❐	❐	■
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	❐	❐	❐	■
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❐	❐	❐	■

EXISTING CONDITIONS

The project is anticipated to be complete within the buildout projections of the General Plan (2040). According to ABAG, Cupertino would have 33,350 jobs by 2040.[76]

The site is currently developed with commercial uses only. Applying a generation rate of 1 job to 450 square feet for commercial land uses to the existing 3,385 square feet restaurant, the existing restaurant generates up to approximately 7 jobs. The existing 10,044 square feet commercial building on the project site is currently vacant and, therefore, does not have any existing jobs.

[76] Association of Bay Area Governments, *Plan Bay Area 2040, Appendix A: Growth Forecast by Jurisdiction*, https://www.planbayarea.org/sites/default/files/pdf/JHCS/May_2012_Jobs_Housing_Connection_Strategy_Appendices_Low_Res.pdf, accessed May 30, 2018.

DISCUSSION

a) *Would the project induce substantial unexpected population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The proposed project would construct a 185-room hotel and would not directly result in any additional new population growth or employment growth beyond what was accounted for in the General Plan. Persons staying temporarily in a place, such as the proposed hotel, are not considered permanent residents. Thus, the proposed project would not directly increase permanent population through guests at the hotel. In addition, the proposed project is not a regionally significant employer and it is anticipated that future employees of the proposed project would come from Cupertino and the surrounding Bay Area communities. As described in Chapter 3, Project Description, of this Initial Study, the operation of the project is estimated to generate up to 93 employees on the project site. As described under Existing Conditions above, the existing land uses on the site have the potential to generate up to 7 employees, resulting in about 86 net new employees on the site. According to the ABAG, Cupertino is projected to have 30,110 jobs by 2020 about the time project would be completed (i.e., 2021). The estimated 86 net new jobs generated by project operation would be well within forecast employment increases in Cupertino. The proposed project's potential impact on growth from new employment would be *less than significant*.

Additionally, the proposed project does not include the construction of infrastructure or roads which would indirectly induce additional population growth. Therefore, a *less than significant* impact would result in this respect. No mitigation measures would be required.

b) *Would the project displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?*

The project site does not contain any residential units and would not directly displace housing. Additionally, the project is not a regional employer, and would not cause additional housing to be constructed elsewhere. It is anticipated that future employees of the proposed project would come from Cupertino and the surrounding Bay Area communities. Therefore, the project would have *no impact* associated with the displacement of substantial numbers of housing.

c) *Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

The project site does not contain any residential units and would not directly displace people. Therefore, the project would have *no impact* associated with the displacement of substantial numbers of people.

XIII. PUBLIC SERVICES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	❐	❐	■	❐
Police protection?	❐	❐	■	❐
Schools?	❐	❐	❐	■
Libraries?	❐	❐	❐	■

EXISTING CONDITIONS

The public service providers for the project site are as follows:

- The City of Cupertino contracts with the Santa Clara County Fire District (SCCFD) for fire protection, emergency, medical, and hazardous material services.
- The City of Cupertino contracts with the Santa Clara County Sheriff's Office (Sheriff's Office) and West Valley Patrol Division for police protection services.
- Cupertino High School and Sedgwick Elementary School in the Cupertino Union School District are approximately 1.5 miles to the south, while Laurelwood Elementary School in the Santa Clara Unified School District is located approximately 1.5 miles to the northeast in the City of Santa Clara.
- The Santa Clara County Library District (SCCLD) governs and administers seven community libraries, one branch library, two bookmobiles, the Home Service Library, and the 24-7 online library for all library users. The closest library to the project site is the Cupertino Library located at 10800 Torre Avenue in Cupertino.

A recent discussion of the existing conditions for each of these service providers is provided in Chapter 4.12 of the General Plan EIR.

DISCUSSION

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, and libraries?*

The primary purpose of the public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times or other performance objectives. Public service facilities need improvements (i.e., construction, renovation or expansion) as demand for services increase. Increased demand is typically driven by increases in population. The proposed project would have a significant environmental impact if it would exceed the ability of public service providers to adequately serve residents, thereby requiring construction of new facilities or modification of existing facilities.

As discussed above in Section XII, Population and Housing, above, the proposed project would result in a 185-room hotel and no new permanent residents. The proposed project is within the 1,339-hotel-room maximum evaluated in the General Plan EIR and would not directly result in any additional new population growth or employment growth beyond what was accounted for in the General Plan EIR. Because impacts to public service providers were determined to be less than significant in the General Plan EIR and the proposed project is within the number of hotel rooms evaluated in the General Plan EIR, impacts to public services providers as a result of the proposed project would also be *less than significant*. No mitigation measures would be required. Furthermore, the property tax generated from the proposed hotel would support the City's public services funds that are used in part to maintain some City services. Likewise and pursuant to Senate Bill 50,[77] the project applicant would be required the school impact fees required for commercial development that would deem any impacts to the Cupertino Union School District *less than significant*.

XIV. PARKS AND RECREATION

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	❐	❐	■	❐

[77] Senate Bill 50 amended California Government Code Section 65995, which contains limitations on Education Code section 17620, the statute that authorizes school districts to assess development fees within school district boundaries.

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
b) Result in substantial adverse physical impacts associated with the provision of new or physically altered park and recreational facilities, or result in the need for new or physically altered park and recreational facilities, the construction of which could cause significant environmental impacts?	❒	❒	■	❒

EXISTING CONDITIONS

The City of Cupertino Recreation and Community Services is responsible for the maintenance of the City's 14 parks and seven community and recreational facilities. The City of Cupertino has an adopted parkland dedication standard of three acres of parkland for every 1,000 residents. There is a total of approximately 156 acres of parkland in Cupertino, or approximately 2.7 acres per 1,000 residents, based on an existing population of 58,302. The City parks nearest to the project site are Portal Park, located approximately one mile to the southwest, Jenny Strand Park, located approximately three-quarters of a mile to the southeast, and Westwood Oaks Park, located approximately one-half mile to the east of the site.

Regional park facilities operated by the Midpeninsula Regional Open Space District and the Santa Clara County Parks could be used by residents of the project site. The closest Midpeninsula Regional Open Space District parks to Cupertino are the Fremont Older, Picchetti Ranch, and Rancho San Antonia, which are located just southwest and west of the city boundaries, respectively. Santa Clara County Park facilities that serve Cupertino include Rancho San Antonio County Park, south of I-280 and west of Foothill Boulevard, and the Stevens Creek County Park.

DISCUSSION

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?*

The proposed project would increase the number of persons and level of activity of the project site; however, no families with children or other permanent residents that are assumed to frequently use the existing neighborhood and regional parks would be introduced as a result of the proposed hotel. Accordingly, the project is not expected to increase the use of any existing neighborhood and regional parks or other recreational facilities.

As described above in Section XII, Population and Housing, the estimated 93 total employees (86 net new employees) would likely be residents of Cupertino or the surrounding Bay Area and would not relocate from other locations thus generating new population to the city. The proposed project would construct a 185-room hotel, which is within the 1,339-hotel-room maximum evaluated in the General Plan EIR and would not directly result in any additional new population growth or employment growth beyond what was accounted for in the General Plan EIR. Because impacts to parks were determined to be less than significant in the General Plan EIR and the proposed project is within the number of hotel rooms evaluated in the General Plan EIR, impacts to parks and recreational services as a result of the proposed project would also be *less than significant*. No mitigation measures would be required. Furthermore, the Transient Occupancy Tax generated from the proposed hotel would support the City's public services funds that are used in part to maintain the City's recreational facilities.

b) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered park and recreational facilities, or result in the need for new or physically altered park and recreational facilities, the construction of which could cause significant environmental impacts?

As discussed in criterion (a) above, unlike permanent residents in Cupertino, future patrons of the hotel are not expected to use park and recreational facilities, therefore the proposed project would not result in substantial deterioration or trigger the construction of new built facilities over and beyond foreseen in the long-range planning completed for the regional park facilities of the project site. The Transient Occupancy Tax generated from the proposed hotel would also support the City's public services funds that are used in part to maintain the City's recreational facilities. Because impacts to parks were determined to be less than significant in the General Plan EIR and the proposed project is within the number of hotel rooms evaluated in the General Plan EIR, impacts to parks and recreational services as a result of the proposed project would also be *less than significant*. No mitigation measures would be required.

XV. TRANSPORTATION AND CIRCULATION

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	❐	❐	■	❐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	❐	❐	■	❐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❐	❐	❐	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❐	❐	❐	■
e) Result in inadequate emergency access?	❐	❐	❐	■

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	❐	❐	❐	■

METHODOLOGY

The following is based on the Traffic Impact Analysis (TIA) prepared for the proposed project. The TIA is included in Appendix D, Transportation Impact Analysis, of this Initial Study. The cumulative impacts, in conjunction with overall General Plan buildout were evaluated as part of the General Plan EIR; thus, the project's traffic impact analysis evaluates the near-term impacts of the project under Existing and Background conditions. The TIA was prepared following the guidelines of the cities of Cupertino, Sunnyvale, and Santa Clara, as well as the Santa Clara Valley Transportation Authority (VTA), the congestion management agency for Santa Clara County. The VTA Congestion Management Program (CMP) TIA Guidelines (last updated in October 2014) are guidelines for assessing the transportation impacts of development projects and identifying whether improvements are needed to roadways, bike facilities, sidewalks, and transit services for CMP roadways The TIA guidelines have been adopted by local agencies within Santa Clara County, and are applied to analyze the regional transportation system. For projects that would generate fewer than 100 net new peak hour vehicle trips, a CMP analysis is not required. Although the proposed project is expected to generate fewer than 100 net peak hour trips, a CMP analysis was prepared because the calculated number of net new peak hour trips nearly meets the 100-trip threshold.[78]

Thresholds of Significance

Thresholds of significance are used to establish what constitutes an impact. For the purposes of this Initial Study, the criteria used to determine significant impacts on signalized intersections is based on the level of service standards of the city in which the intersection is located: Cupertino, Sunnyvale and Santa Clara. Project impacts also were analyzed according to the County Congestion Management Program (CMP) methodology for the CMP study intersections and freeway segments.

Definition of Significant Intersection Impacts

A project would create a significant adverse impact on traffic conditions at a signalized intersection in the cities of Cupertino, Sunnyvale or Santa Clara if for either AM or PM peak hour:

[78] The proposed project is anticipated to generate 96 AM (morning) and 89 PM (evening) trips. See Table 4-16 under impact discussion TRANS-1.

1. The level of service at the intersection under background conditions drops below the applicable level of service standard when project traffic is added, or
2. An intersection that operates below the applicable level of service standard under background conditions experiences an increase in critical-movement delay of four (4) or more seconds and the volume-to-capacity ratio (V/C) increases by 1 percent (0.01) or more when project traffic is added.

An exception to these significance thresholds applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is negative). In this case, the significance threshold is an increase in the critical V/C value by 1 percent (0.01) or more.

CMP Definition of Significant Intersection Impacts

The definition of a significant impact at a CMP intersection is the same as described above, except that the CMP standard for acceptable level of service is LOS E or better. Thus, a CMP intersection that operates at LOS F would fail to meet the CMP level of service standard.

A significant impact according to the standards used by the cities of Cupertino, Sunnyvale, Santa Clara, and CMP standards is mitigated to a less-than-significant level when measures are implemented that would restore intersection conditions to its level of service standard or to an average delay that eliminates the project impact.

Freeway Segment Impact Criteria

The CMP defines an acceptable level of service for freeway segments as LOS E or better. A project is said to create a significant impact on traffic conditions on a freeway segment if for either AM or PM peak hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F with the addition of project trips, or
2. The level of service on the freeway segment is already operating at an unacceptable LOS F and the number of project trips added to the segment constitutes at least 1 percent (0.01) of capacity of the segment.

A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore freeway conditions to existing conditions or better.

Intersection Level of Service

Signalized Study Intersections

The cities of Cupertino, Sunnyvale, and Santa Clara evaluate level of service at signalized intersections based on the *2000 Highway Capacity Manual* (HCM) level of service methodology using TRAFFIX software. This method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The correlation between average control delay and level of service at signalized intersections is shown in Table 4-10.

TABLE 4-10 SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS BASED ON CONTROL DELAY

LOS	Description	Average Control Delay (seconds per vehicle)
A	Signal progression is extremely favorable. Most Vehicles are during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable to most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contribution causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, 2000 Highway Capacity Manual (Washington, D.C., 2000) page 10 to 16. Santa Clara Valley Transportation Authority Traffic Level of Service Analysis Guidelines (June 2003), Table 2. See Table 1 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

The cities of Cupertino, Sunnyvale, and Santa Clara level of service standard for signalized intersections is LOS D or better, except on roadways considered “regionally significant” within Sunnyvale and on CMP facilities within Santa Clara, which have a standard of LOS E. Of the four study intersections located in the City of Sunnyvale, one is designated a CMP intersection. The Santa Clara study intersection is also a CMP intersection.

CMP Intersections

The designated level of service methodology for the CMP also is the 2000 HCM operations method for signalized intersections, using TRAFFIX. The CMP level of service standard for signalized intersections within Sunnyvale and Santa Clara is LOS E or better. Within the City of Cupertino, the level of service standard for all signalized intersections, including CMP intersections, is LOS D or better.

Freeway Segment Level of Service

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density where density refers to the number of vehicles per mile per lane (vpmpl)

The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for mixed-flow lane segments that are three lanes or wider in one direction, and a capacity of 2,200 vphpl for mixed-flow lane segments that are two lanes wide in one direction. A capacity of 1,800 vphpl was used for high occupancy vehicle (HOV) lanes. The CMP defines an acceptable level of service for freeway segments as LOS E or better. The correlation between vehicle density and level of service on freeway segments is shown in Table 4-11.

TABLE 4-11 FREEWAY LEVEL OF SERVICE DEFINITIONS BASED ON DENSITY

LOS	Description	Density (Vehicles Per Mile Per Lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	11.0 or less
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	11.1 to 18.0
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and land changes require more vigilance on the part of the driver.	18.1 to 26.0
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	26.1 to 46.0
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no useable gaps in the traffic stream, leaving little r0om to maneuver within the traffic stream.	46.1 to 58.0
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	greater than 58.0

Source: Santa Clara Valley Transportation Authority, Traffic Impact Analysis Guidelines Updated March 2009 (Based on the Highways Capacity Manual (2000), Washington D.C.) See Table 2 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

Intersection Queuing

The analysis of intersection level of service was supplemented with an analysis of traffic operations for intersections where the project would add a significant number of left turns. The operations analysis is based on vehicle queuing for high demand left-turn movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of the number of vehicles for a vehicle turning movement to determine the average number of vehicles in the queue per lane. The basis of the queuing analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at signalized intersections.

The 95th percentile queue length value indicates that during the morning (AM) or evening (PM) peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length longer than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the "design queue length."

Vehicles Miles Traveled

As discussed in the Chapter 4.13, Transportation and Traffic, of the General Plan EIR, Senate Bill (SB) 743 will eventually alter how transportation and traffic impacts are analyzed under State CEQA Guidelines; however, this process is still underway.[79] SB 743 requires the California Governor's Office of Planning and Research to amend the CEQA Guidelines to provide an alternative to level of service as the metric for evaluating transportation impacts under CEQA. Particularly within areas served by transit, the alternative criteria must promote the reduction of GHG emissions, development of multimodal transportation networks, and diversity of land uses. Measurements of transportation impacts may include vehicle miles travelled (VMT), VMT per capita, automobile trip generation rates, or automobile trips generated. Once alternative criteria are incorporated into the CEQA Guidelines, auto delay will no longer be considered a significant impact under CEQA. SB 743 also amended State congestion management law to allow cities and counties to opt out of level of service standards in certain infill areas. Amendments to the CEQA Guidelines to address SB 743 are scheduled to apply statewide as soon as January 1, 2020.

VMT is a useful metric in understanding the overall effects of a project on the transportation system. VMT is the sum of all of the vehicle trips generated by a project multiplied by the lengths of their trips to and from the site on an average weekday. A vehicle driven one mile is one VMT. Therefore, a project with a higher VMT would have a greater environmental effect than a project with a low VMT.

The trip lengths vary by the land use type and the trip purpose. For example, a trip from a residence to a job may be longer than the trip from a residence to a neighborhood school. The VMT values stated below represent the full length of a given trip, and are not truncated at city, county, or region boundaries.

Many factors affect travel behavior and trip lengths such as density of land use, diversity of land uses, design of the transportation network, distance to high-quality transit, and demographics. Low-density development separated from other land uses and located in areas with poor access to transit generates more automobile travel and higher VMT compared to development located in urban areas with more access to transit.

As discussed in the General Plan EIR, the VMT per capita is projected to increase from 10.5 to 10.9 under General Plan buildout conditions. The proposed project would construct a 185-room hotel, which is consistent with the land use evaluated in the General Plan EIR and would not directly result in any additional new population growth or employment growth beyond what was accounted for in the General

[79] State of California Office of Planning and Research, Transportation Impacts (SB 743), http://opr.ca.gov/ceqa/updates/sb-743/, accessed August 24, 2018.

Plan EIR. Accordingly, implementation of the project would be consistent with and would have no effect on the VMT estimates presented in the General Plan EIR.

EXISTING WITHOUT PROJECT CONDITIONS

The existing conditions without the proposed project for intersections, freeway segments, pedestrian and bicycle facilities, as well as transit services are discussed below.

Existing without Project Intersection Operations

The results of the intersection level of service analysis show that all but one of the study intersections currently operate at LOS D or better during both the AM and PM peak hours of traffic. The CMP intersection of Lawrence Expressway and Homestead Road currently operates at LOS E during both the AM and PM peak hours of traffic, which is considered acceptable when measured against the CMP standard (LOS E). Therefore, all the study intersections are currently operating at acceptable levels of service. The results of the level of service analysis for Existing Conditions are presented in Table 4-12.

TABLE 4-12 EXISTING INTERSECTION LEVEL OF SERVICE RESULTS

ID #	Intersection	Jurisdiction/ CMP[a]	LOS Threshold	Peak Hour[b]	Delay	LOS
1	Wolfe Road / El Camino Real	Sunnyvale (CMP)	E	AM	53.6	D-
				PM	43.0	D
2	Wolfe Road / Fremont Avenue	Sunnyvale	D	AM	51.9	D-
				PM	45.6	D
3	Wolfe Road / Marion Way	Sunnyvale	D	AM	10.6	B+
				PM	15.9	B
4	Wolfe Road / Inverness Avenue	Sunnyvale	D	AM	12.5	B
				PM	15.2	B
5	De Anza Boulevard / Homestead Road	Cupertino (CMP)	D	AM	35.7	D+
				PM	36.4	D+
6	Wolfe Road / Homestead Road	Cupertino	D	AM	38.5	D+
				PM	43.2	D
7	Lawrence Expressway / Homestead Road	Santa Clara (CMP)	E	AM	69.7	E
				PM	74.8	E
8	Wolfe Road / Apple Park Way	Cupertino	D	AM	14.1	B
				PM	21.3	C+
9	Wolfe Road / Pruneridge Avenue	Cupertino	D	AM	21.2	C+
				PM	18.3	B-
10	Wolfe Road / I-280 Northbound Ramps	Cupertino (CMP)	D	AM	8.3	A
				PM	7.0	A
11	Wolfe Road / I-280 Southbound Ramps	Cupertino (CMP)	D	AM	13.9	B
				PM	7.5	A
12	Wolfe Road / Vallco Parkway	Cupertino	D	AM	22.1	C+
				PM	20.1	C+
13	Wolfe Road / Stevens Creek Boulevard	Cupertino (CMP)	D	AM	39.9	D
				PM	39.9	D

Notes All of the study intersections are signalized.
a. Intersection jurisdiction and identification of CMP (Congestion Management Program) intersections.
b. AM = morning peak hour, PM = evening peak hour.
Source: See Table 4 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

Existing without Project Freeway Operations

Traffic volumes for the study freeway segments were obtained from the 2016 CMP Annual Monitoring Report, which contains the most recent data collected for freeway segments located in Santa Clara County. The results of the analysis are summarized in Table 4-13. The results show that the following directional freeway segments currently operate at an unacceptable LOS F:

- I-280, eastbound between SR 85 and De Anza Boulevard – PM Peak Hour
- I-280, westbound between SR 85 and De Anza Boulevard – AM Peak Hour
- I-280, eastbound between De Anza Boulevard and Wolfe Road – PM Peak Hour
- I-280, westbound between De Anza Boulevard and Wolfe Road – AM Peak Hour
- I-280, eastbound between Wolfe Road and Lawrence Expressway – PM Peak Hour
- I-280, westbound between Wolfe Road and Lawrence Expressway – AM Peak Hour
- I-280, westbound between Lawrence Expressway and Saratoga Avenue – AM peak hour

TABLE 4-13 EXISTING FREEWAY (I-280) LEVEL OF SERVICE RESULTS

Freeway Segment	Peak Hour	Number of Lanes		Density		LOS	
		Mixed	HOV	Mixed	HOV	Mixed	HOV
Eastbound							
SR 85 to De Anza Boulevard	AM	3	1	22	12.1	C	B
	PM			**106.0**	83.0	**F**	**F**
De Anza Boulevard to Wolfe Road	AM	3	1	22.0	22.1	C	C
	PM			61.0	42.0	**F**	D
Wolfe Road to Lawrence Expressway	AM	3	1	21.0	12.1	C	B
	PM			**77.0**	52	**F**	E
Lawrence Expressway to Saratoga Avenue	AM	3	1	37	14	D	B
	PM			26	15	C	B
Westbound							
Saratoga Avenue to Lawrence Expressway	AM	3	1	**78.0**	**70**	**F**	**F**
	PM			25.0	12	C	B
Lawrence Expressway to Wolfe Road	AM	3	1	**72.0**	70	**F**	**F**
	PM			26.0	14	C	B
Wolfe Road to De Anza Boulevard	AM	3	1	**75.0**	48	**F**	E
	PM			26.0	10	C	A
De Anza Boulevard to SR 85	AM	3	1	**76.1**	42.6	**F**	E
	PM			26.0	10.0	C	A

Notes: **Bold** font indicates substandard level of service.
Source: See Table 5 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

Existing without Project Pedestrian, Bicycle, and Transit Facilities

Pedestrian Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals. In the vicinity of the project site, sidewalks exist along both sides of Wolfe Road and Homestead Road, providing pedestrian access to and from the project site; however, sidewalks are missing on Pruneridge Avenue along the project frontage. Marked crosswalks with pedestrian signal heads and push buttons are provided on most approaches of the signalized study intersections except the intersections along Wolfe Road at Apple Park Way, Pruneridge Avenue, and the I-280 northbound and southbound ramps. Marked crosswalks are provided along the following approaches:

- North and east crossings at Wolfe Road and Apple Park Way
- North, east, and west crossings at Wolfe Road and Pruneridge Avenue
- West crossing at Wolfe Road and I-280 northbound ramps
- East crossing at Wolfe Road and I-280 southbound ramps

Although some sidewalk and crosswalk connections are missing, the overall network of sidewalks and crosswalks in the study area has adequate connectivity and provides pedestrians with safe routes to transit services and other points of interest in the vicinity of the project site.

The *2018 Cupertino Pedestrian Transportation Plan* (Pedestrian Plan) contains goals, policies, and specific recommendations to increase the walkability of Cupertino, including the Pedestrian Guidelines. The 2018 Pedestrian Plan is a companion document to the *City of Cupertino Bicycle Transportation Plan* (discussed below). It includes specific recommendations to improve pedestrian conditions. Consistent with the 2018 Pedestrian Plan and any other applicable recommendations, the project applicant would be required to contribute to implementing any recommended pedestrian improvements in the project area.

Bicycle Facilities

Bicycle facilities in the study area are comprised of Class II bicycle lanes, and Class III bicycle routes. Class II Bikeways (Bike Lanes) are lanes for bicyclists generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are generally 5 feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted. Class III Bikeway (Bike Route) are designated by signs or pavement markings for shared use with pedestrians or motor vehicles, but have no separated bike right-of-way or lane striping. Bike routes serve either to: a) provide continuity to other bicycle facilities, or b) designate preferred routes through high demand corridors. Bike lanes in the area include the following:

- North-south bicycle connections in the study area include Class II bike lanes along Wolfe Road between Stevens Creek Boulevard and Fremont Avenue in Sunnyvale, where it transitions into a Class III bike route. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are existing streets that accommodate bicycles but are not separate from the existing travel lanes. Bike routes are typically designated only with signage or with painted shared lane markings (Sharrows) on a road that indicate to motorists that bicyclists may use the full travel lane.

- East-west bicycle connections in the study area consist of Class II bike lanes along Homestead Road between Lafayette Street and Foothill Expressway, Stevens Creek Boulevard between Lawrence Expressway and California Oak Way, and along Vallco Parkway between Tantau Avenue and Wolfe Road.
- Class III bike routes are also present in the vicinity of the project site, along Marion Way between Oriole Avenue and Wolfe Road.

In 2016, the City of Cupertino adopted its *Bicycle Transportation Master Plan* (Bike Plan), which is a citywide plan to encourage bicycling as a safe, practical and healthy alternative to the use of the family car. The Bike Plan illustrates Cupertino's current bicycle network, identifies gaps in the network, and proposes improvement projects to address the identified gaps.[80] The 2016 Bike Plan includes standards for engineering, encouragement, education, and enforcement intended to improve the bicycle infrastructure in the City to enable people to bike to work and school, to use a bicycle to run errands, and to enjoy the health and environmental benefits that bicycling provides cyclists of every age. Consistent with the 2016 Bike Plan and any other applicable recommendations the project applicant would be required to contribute to implementing the recommended bike improvements in the project area.

The VTA adopted the Santa Clara Countywide Bicycle Plan (CBP). The CBP guides the development of major bicycle facilities in the County by identifying Cross County Bicycle Corridors and other bicycle projects of countywide or intercity significance. Several of the Cross County Bicycle Corridors travel through the study area, including routes along Vallco Parkway, Stevens Creek Boulevard, Wolfe Road/Miller Avenue, and Tantau Avenue.

Public Transportation Facilities

<u>Transit Service</u>

Nearby transit services are described below and Table 4-14 summarizes the destinations, closest stop to the project site, hours/days of operation, and service frequencies for transit services within walking distance.

[80] City of Cupertino, 2016 Bicycle Transportation Plan, Figure 3-7: Bikeway projects.

TABLE 4-14 EXISTING TRANSIT SERVICE

Routes	From	To	Distance to Nearest Stop[a]	Weekdays		Saturdays	
				Operating Hours[b]	Peak Headway[c]	Operating Hours[b]	Peak Headway[c]
VTA BUS SERVICE							
Local Bus Routes							
26	Sunnyvale / Lockheed Martin Transit Center	Eastridge Transit Center	0.10	5:20 am to 11:20 pm	30	7:17 am to 10:40 pm	30
23[d]	De Anza College	Alum Rock Transit Center	0.80	5:20 am to 1:05 am (next day)	15 to 20	6:10 am to 12:11 am (next day)	15 to 20
81	Moffett Field/Ames Center	San Jose State University	0.10	6:15 am to 9:05 pm	25 to 35	9:30 am to 4:30 pm	60
Express Bus Routes							
101 [d]	Camden & Highway 85	Palo Alto	0.55	6:20 am to 8:20 am 4:10 pm to 6:45 pm	2 NB Runs (AM) 2 SB Runs (PM)	No Service	
182 [d]	Palo Alto	IBM/Bailey Avenue	0.60	7:30 am to 8:30 am 5:05 pm to 6:10 pm	1 SB Run (AM) 1 NB Run (PM)	No Service	

Notes: AM = morning commuter period; PM = evening commute period; NB = northbound; SB = southbound; VTA = Santa Clara Valley Transportation Authority
a. Approximate distance in miles from nearest stop to project site.
b. Operating hours consider earliest and latest stop at each bus lines closest stop to the project site.
c. Headways are defined as the time interval between two transit vehicles traveling in the same direction over the same route.
d. These routes provide access to the Vallco Shopping Center Park and Ride Lot.
Source: See Table 3 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

Commuter Rail Service

Caltrain is a commuter rail service that runs from downtown San Francisco (4th and King Streets) to downtown San Jose (Diridon Station), with a limited number of commute period trains running farther south to Gilroy. During commute periods, Caltrain offers express service (“Baby Bullet”) between downtown San Jose and San Francisco. Currently, Baby Bullet service is provided both in the northbound and southbound directions during the morning and evening commute periods at the Mountain View Caltrain station. Baby Bullet trains serve the Sunnyvale Caltrain station in the northbound direction during the morning peak and in the southbound direction during the evening peak hours.

The nearest station to the project site is the Lawrence Station, which is located on Lawrence Expressway approximately three miles northwest of the project site. During the weekdays, service in the northbound direction begins at 4:40 a.m. and ends at 10:40 p.m. In the southbound direction, service at this station begins at 6:14 a.m. and ends at 1:20 a.m. During the weekends, northbound service begins at 7:10 a.m.

and ends at 10:40 p.m. Southbound service begins at 9:40 a.m. and ends at 1:26 a.m. For passengers arriving by bicycle, there are 18 bike racks and 24 bicycle lockers. Vehicle parking at this location includes 122 parking spaces.

BACKGROUND WITHOUT PROJECT CONDITIONS

This section describes the background traffic conditions without the proposed project. The background traffic conditions are defined as conditions just prior to completion of the proposed project. Traffic volumes for background conditions consist of volumes from existing traffic volumes plus traffic generated by other approved projects in the vicinity of the site. The transportation network under background conditions would be the same as the existing transportation network because there are no planned and funded transportation improvements at the study intersections. Background peak hour traffic volumes were estimated by adding to existing traffic volumes the trips generated by nearby approved but not yet completed or occupied projects in the cities of Cupertino, Sunnyvale, and Santa Clara. Trip generation estimates for the approved projects were based on their respective traffic studies, if available, and on Institute of Transportation Engineers (ITE) trip rates.

Background without Project Intersection Operations

As shown in Table 4-15, the results of the level of service analysis show that most of the study intersections would continue to operate at LOS D or better during both the AM and PM peak hours of traffic under background conditions. The CMP intersections of Wolfe Road/El Camino Real (#1) and Lawrence Expressway/Homestead Road (#7) both would operate at LOS E during the AM peak hour of traffic, which is considered acceptable when measured against the CMP standard. However, the Lawrence Expressway/Homestead Road (#7) intersection would operate at an unacceptable LOS F during the PM peak hour due to additional traffic from approved developments in the study area. The intersection level of service calculation sheets are provided in Appendix C of the TIA, which is included in Appendix D of this Initial Study.

TABLE 4-15 BACKGROUND INTERSECTION LEVEL OF SERVICE RESULTS

					Existing Conditions		Background Conditions	
ID #	Intersection	Jurisdiction/ CMP[a]	LOS Threshold	Peak Hour[b]	Delay	LOS	Delay	LOS
1	Wolfe Road / El Camino Real	Sunnyvale (CMP)	E	AM	53.6	D-	55.3	E+
				PM	43.0	D	44.1	D
2	Wolfe Road / Fremont Avenue	Sunnyvale	D	AM	51.9	D-	53.2	D-
				PM	45.6	D	47.5	D
3	Wolfe Road / Marion Way	Sunnyvale	D	AM	10.6	B+	10.5	B+
				PM	15.9	B	15.9	B
4	Wolfe Road / Inverness Avenue	Sunnyvale	D	AM	12.5	B	12.5	B
				PM	15.2	B	15.3	B
5	De Anza Boulevard / Homestead Road	Cupertino (CMP)	D	AM	35.7	D+	36.2	D+
				PM	36.4	D+	37.3	D+

TABLE 4-15 BACKGROUND INTERSECTION LEVEL OF SERVICE RESULTS

ID #	Intersection	Jurisdiction/ CMP[a]	LOS Threshold	Peak Hour[b]	Existing Conditions Delay	Existing Conditions LOS	Background Conditions Delay	Background Conditions LOS
6	Wolfe Road / Homestead Road	Cupertino	D	AM	38.5	D+	40.7	D
				PM	43.2	D	46.2	D
7	Lawrence Expressway / Homestead Road	Santa Clara (CMP)	E	AM	69.7	E	72.3	E
				PM	74.8	E	**82.1**	**F**
8	Wolfe Road / Apple Park Way	Cupertino	D	AM	14.1	B	19.4	B-
				PM	21.3	C+	27.8	C
9	Wolfe Road / Pruneridge Avenue	Cupertino	D	AM	21.2	C+	26.6	C
				PM	18.3	B-	22.4	C+
10	Wolfe Road / I-280 Northbound Ramps	Cupertino (CMP)	D	AM	8.3	A	9.9	A
				PM	7.0	A	6.9	A
11	Wolfe Road / I-280 Southbound Ramps	Cupertino (CMP)	D	AM	13.9	B	18.4	B-
				PM	7.5	A	8.3	A
12	Wolfe Road / Vallco Parkway	Cupertino	D	AM	22.1	C+	24.4	C
				PM	20.1	C+	21.7	C+
13	Wolfe Road / Stevens Creek Boulevard	Cupertino (CMP)	D	AM	39.9	D	40.8	D
				PM	39.9	D	40.7	D

Note: All of the study intersections are signalized.
a. Intersection jurisdiction and identification of CMP (Congestion Management Program) intersections.
b. AM = morning peak hour, PM = evening peak hour.
Source: See Table 6 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

DISCUSSION

a) *Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

After applying the ITE trip rates for hotels, appropriate trip reductions for being within walking distance of services at Cupertino Village and implementation of a Transportation Demand Management (TDM) program with financial and dedicated shuttle provisions as well as trip credits for the existing uses (Duke of Edinburgh Restaurant only), the proposed hotel project would generate 1,636 net new daily vehicle trips, with 96 new trips occurring during the AM peak hour and 89 new trips occurring during the PM peak hour. The project is estimated to generate 272 net new weekday morning (AM) peak hour vehicle trips (48 inbound and 224 outbound) and 421 net new weekday evening (PM) peak hour vehicle trips (268 inbound and 153 outbound). Using the inbound/outbound splits contained in the ITE *Trip Generation Manual*, the project would produce 56 new inbound and 40 new outbound trips during the AM peak hour, and 36 new inbound and 53 new outbound trips during the PM peak hour. A summary of the project's trip generation is shown in Table 4-16 below.

TABLE 4-16 PROJECT TRIP GENERATION ESTIMATES

Land Use	Daily		AM Peak Hour				PM Peak Hour			
	Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Uses										
Boutique Hotel with 185 rooms[a]	12.23	2,263	0.62	67	48	115	0.73	66	69	135
Hotel and Retail Internal Mixed-Use Reduction (10%)[b]		-226		-6	-5	-11		-7	-7	-14
TDM Reduction for Financial Incentives (5%)[c]		-113		-3	-2	-5		-3	-3	-6
TDM Reduction for Shuttle Program (5%)[c]		-68		-2	-1	-3		-2	-2	-4
Subtotal		1,856		56	40	96		54	57	111
Existing Uses										
Duke of Edinburgh Restaurant (3,385 square feet)[c]		-220		0	0	0		18	4	22
Net Project Trips		**1,636**		**56**	**40**	**96**		**36**	**53**	**89**

Note: TDM = Transportation Demand Management
a. Trip generation based on average trip rates for Hotel (land use 310. Occupied Rooms) published in ITE's Trip Generation Manual, 10th Edition, 2017.
b. Trip reduction based on Standard Auto Trip Reduction Rates published in VTA's *Transportation Impact Analysis Guidelines*, 2014.
c. Trip credits base on PM peak hour count conducted on March 27, 2018. Daily trip credit calculated by multiplying PM peak hour trips by a factor of 10.
Source: See Table 7 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

The following analysis was performed to evaluate traffic conditions during the weekday morning (AM) and weekday evening (PM) peak hours for the following scenarios:

- *Existing plus Project Conditions.* In addition to the Existing conditions without the project discussed previously, the Existing plus Project conditions were evaluated by adding traffic from the proposed project.
- *Background plus Project Conditions*. In addition to the Background conditions without the project discussed previously, the Background plus Project conditions were evaluated by adding traffic from the other approved developments in the vicinity of the site.

Existing plus Project Conditions

Intersection levels of service were calculated with the project traffic added to evaluate the operating conditions of the intersections and identify potential impacts to the roadway system. The results of the intersection level of service calculations for Existing plus Project conditions are presented in Table 4-17.

TABLE 4-17 EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE RESULTS

ID	Intersection	Jurisdiction/ CMP[a]	LOS Threshold[b]	Peak Hour[c]	Existing without Project Delay	Existing without Project LOS	Existing plus Project Delay	Existing plus Project LOS	Increment in Critical Delay
1	Wolfe Road / El Camino Real	Sunnyvale (CMP)	E	AM	53.6	D-	53.7	D-	0.0
				PM	43.0	D	43.1	D	0.2
2	Wolfe Road / Fremont Avenue	Sunnyvale	D	AM	51.9	D-	52.1	D-	0.3
				PM	45.6	D	45.7	D	0.4
3	Wolfe Road / Marion Way	Sunnyvale	D	AM	10.6	B+	10.6	B+	0.0
				PM	15.9	B	15.9	B	0.0
4	Wolfe Road / Inverness Avenue	Sunnyvale	D	AM	12.5	B	12.5	B	0.0
				PM	15.2	B	15.2	B	0.0
5	De Anza Boulevard / Homestead Road	Cupertino (CMP)	D	AM	35.7	D+	35.7	D+	0.0
				PM	36.4	D+	36.5	D+	0.1
6	Wolfe Road / Homestead Road	Cupertino	D	AM	38.5	D+	38.6	D+	0.0
				PM	43.2	D	43.3	D	0.3
7	Lawrence Expressway / Homestead Road	Santa Clara (CMP)	E	AM	69.7	E	69.7	E	0.2
				PM	74.8	E	74.9	E	0.1
8	Wolfe Road / Apple Park Way	Cupertino	D	AM	14.1	B	14.0	B	0.0
				PM	21.3	C+	21.3	C+	0.0
9	Wolfe Road / Pruneridge Avenue	Cupertino	D	AM	21.2	C+	22.8	C+	1.4
				PM	18.3	B-	20.6	B-	2.7
10	Wolfe Road / I-280 Northbound Ramps	Cupertino (CMP)	D	AM	8.3	A	8.3	A	0.1
				PM	7.0	A	6.9	A	-0.1
11	Wolfe Road / I-280 Southbound Ramps	Cupertino (CMP)	D	AM	13.9	B	14.0	B	0.1
				PM	7.5	A	7.5	A	0.0
12	Wolfe Road / Vallco Parkway	Cupertino	D	AM	22.1	C+	22.0	C+	0.0
				PM	20.1	C+	20.1	C+	0.0
13	Wolfe Road / Stevens Creek Boulevard	Cupertino (CMP)	D	AM	39.9	D	40.0	D	0.2
				PM	39.9	D	40.0	D	0.1

a. Intersection jurisdiction and identification of CMP (Congestion Management Program) intersections.
b. LOS Threshold is the lowest acceptable LOS (the threshold between acceptable and unacceptable level of service).
c. AM = morning peak hour, PM = evening peak hour.
Source: See Table 8 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

As shown on Table 4-17 above, the level of service analysis shows that all the study intersections would operate at an acceptable level of service (LOS D or better for City-controlled intersections and LOS E or better for CMP intersections) during both the AM and PM peak hours of traffic. However, because it would take approximately 2 years to complete the construction of the project and begin operating the hotel, the proposed project would not have any effect on the existing 2018 conditions. For this reason, no impact conclusions are drawn from the existing 2018 conditions scenario. The criteria that define a significant project impact at a signalized intersection in the cities of Cupertino, Sunnyvale, and Santa Clara are based on comparing Background plus Project conditions to Background without Project Conditions that would be in effect at the time the proposed project would operating, which is discussed below.

Background plus Project Conditions

The level of service analysis from the Background plus Project conditions is summarized in Table 4-18.

TABLE 4-18 BACKGROUND PLUS PROJECT INTERSECTION LEVEL OF SERVICE RESULTS

					Background without Project Conditions		Background plus Project Conditions			
ID #	Intersection	Jurisdiction/ CMP[a]	LOS Threshold[b]	Peak Hour[c]	Delay	LOS	Delay[d]	LOS	Increment in Critical Delay	Increment in Critical V/C
1	Wolfe Road / El Camino Real	Sunnyvale (CMP)	E	AM	55.3	E+	55.4	E+	0.0	0.001
				PM	44.1	D	44.2	D	0.2	0.003
2	Wolfe Road / Fremont Avenue	Sunnyvale	D	AM	53.2	D-	53.3	D-	0.4	0.007
				PM	47.5	D	47.6	D	0.4	0.006
3	Wolfe Road / Marion Way	Sunnyvale	D	AM	10.5	B+	10.4	B+	0.0	0.003
				PM	15.9	B	15.9	B	0.0	0.004
4	Wolfe Road / Inverness Avenue	Sunnyvale	D	AM	12.5	B	12.5	B	0.0	0.003
				PM	15.3	B	15.3	B	0.0	0.003
5	De Anza Boulevard / Homestead Road	Cupertino (CMP)	D	AM	36.2	D+	36.3	D+	0.0	0.001
				PM	37.3	D+	37.3	D+	0.1	0.001
6	Wolfe Road / Homestead Road	Cupertino	D	AM	40.7	D	40.8	D	0.3	0.007
				PM	46.2	D	46.4	D	0.4	0.005
7	Lawrence Expressway / Homestead Road	Santa Clara (CMP)	E	AM	72.3	E	72.4	E	0.2	0.002
				PM	**82.1**	**F**	**82.3**	**F**	**0.5**	**0.002**
8	Wolfe Road / Apple Park Way	Cupertino	D	AM	19.4	B-	19.4	B-	0.0	0.000
				PM	27.8	C	27.8	C	0.0	0.003
9	Wolfe Road / Pruneridge Avenue	Cupertino	D	AM	26.6	C	27.9	C	1.2	0.014
				PM	22.4	C+	24.5	C	2.7	0.026
10	Wolfe Road / I-280 Northbound Ramps	Cupertino (CMP)	D	AM	9.9	A	10.1	B+	0.3	0.009
				PM	6.9	A	6.9	A	0.0	0.007
11	Wolfe Road / I-280 Southbound Ramps	Cupertino (CMP)	D	AM	18.4	B-	18.8	B-	0.5	0.006
				PM	8.3	A	8.3	A	0.0	0.002
12	Wolfe Road / Vallco Parkway	Cupertino	D	AM	24.4	C	24.4	C	0.0	0.002
				PM	21.7	C+	21.7	C+	0.0	0.002
13	Wolfe Road / Stevens Creek Boulevard	Cupertino (CMP)	D	AM	40.8	D	40.9	D	0.2	0.005
				PM	40.7	D	40.7	D	0.1	0.002

Note: All of the study intersections are signalized.
a. Intersection jurisdiction and identification of CMP (Congestion Management Program) intersections.
b. LOS Threshold is the lowest acceptable LOS (the threshold between acceptable and unacceptable level of service).
c. AM = morning peak hour, PM = evening peak hour.
d. **Bold** indicates a substandard level of service; however, it does not indicate a significant impact because it does not increase delay by 4 seconds or 1 percent compared to existing conditions.
Source: See Table 9 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

The results presented in Table 4-18 show that all but one of the study intersections would continue to operate at an acceptable level of service (LOS D or better for City-controlled intersections and LOS E or better for CMP intersections) during both the AM and PM peak hours of traffic under background plus project conditions. The CMP intersection of Lawrence Expressway/Homestead Road (#7) would operate at an unacceptable LOS F during the PM peak hour under Background plus Project conditions. However, the project would not cause the intersection's critical-movement delay to increase by 4 or more seconds and the V/C to increase by 1 percent (0.01) or more compared to Background without Project conditions. Therefore, the project's impact at all intersections is considered *less than significant*.

Furthermore, the project applicant would be required to pay the required City of Cupertino Traffic Impact fees, which supports the ongoing improvements to the citywide roadway infrastructure.[81]

Construction Traffic

Demolition and construction would take place over a 24-month period, which is anticipated to begin in August 2019 and be completed 24 months later in 2021, subject to regulatory approval. During this period, the project would generate changes to the existing transportation conditions. New traffic would be generated by construction employees and construction activities, including haul trucks. Construction traffic is temporary and would generate fewer trips than the projected trips during project operation. As discussed above, the project would not result in a significant impact at any study intersection. Therefore, traffic impacts during project construction would be *less than significant*.

b) *Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

The VTA Congestion Management Program TIA Guidelines (last updated in October 2014) present guidelines for assessing the transportation impacts of development projects and identifying whether improvements are needed to adjacent roadways, bike facilities, sidewalks, and transit services affected by the project. The TIA guidelines have been adopted by local agencies within Santa Clara County, and are applied to analyze the regional transportation system. The CMP requires that its facilities operate at LOS E or better. The following evaluates intersections and freeway segments per CMP criteria.

CMP Intersection Analysis

The impact discussion in criterion (a) above includes an evaluation of study intersections including intersections in the CMP network (#s 1, 5, 7, 10, 11, and 13). Tables 4-17 and 4-18 above present the results of the intersection level of service under Existing and Background conditions without and with the project. The analysis in criterion (a) concluded that the proposed project would result in *less-than-significant* impacts per CMP criteria.

CMP Freeway Segments Analysis

Traffic volumes on the study freeway segments with the project were estimated by adding project trips to the existing volumes obtained from the 2016 CMP Annual Monitoring Report. As shown on Table 4-19,

[81] City of Cupertino, City-Wide Traffic Impact Fee, https://www.cupertino.org/our-city/departments/public-works/permitting-development-services/proposed-city-wide-traffic-impact-fee, accessed on September 20, 2018.

the results of the freeway segment analysis show that the project would not cause significant increases in traffic volumes (1 percent [0.01] or more of freeway capacity) on any of the study freeway segments currently operating at LOS F, and none of the study freeway segments currently operating at LOS E or better would worsen to LOS F as a result of the project. Therefore, based on CMP freeway impact criteria, impacts would be *less than significant*.

TABLE 4-19 FREEWAY (I-280) SEGMENT CAPACITY ANALYSIS

		Existing plus Project					Project Trips				
		Mixed		HOV			Mixed		HOV		
Freeway Segment	Peak Hour	Capacity (vph)	LOS	Capacity (vph)	LOS	Total Volume	Volume	% Capacity	Volume	% Capacity	Impact?
Eastbound											
SR 85 to De Anza Boulevard	AM	6,900	C	1,800	B	8	6	0.1	2	0.1	No
	PM	**6,900**	**F**	**1,800**	**F**	5	4	0.1	1	0.1	No
De Anza Boulevard to Wolfe Road	AM	6,900	C	1,800	C	8	6	0.1	2	0.1	No
	PM	**6,900**	**F**	1,800	D	5	4	0.1	1	0.1	No
Wolfe Road to Lawrence Expressway	AM	6,900	C	11,800	B	10	8	0.1	2	0.1	No
	PM	**6,900**	**F**	1,800	E	13	10	0.2	3	0.2	No
Lawrence Expressway to Saratoga Avenue	AM	6,900	D	1,800	B	10	8	0.1	2	0.1	No
	PM	6,900	C	1,800	B	13	10	0.2	3	0.2	No
Westbound											
Saratoga Avenue to Lawrence Expressway	AM	**6,900**	**F**	**1,800**	**F**	14	11	0.2	3	0.2	No
	PM	6,900	C	1,800	B	9	7	0.1	2	0.1	No
Lawrence Expressway to Wolfe Road	AM	**6,900**	**F**	**1,800**	**F**	14	11	0.1	3	0.1	No
	PM	6900	C	1,800	B	9	7	0.1	2	0.1	No
Wolfe Road to De Anza Boulevard	AM	**6,900**	**F**	1,800	E	6	5	0.1	1	0.1	No
	PM	6,900	C	1,800	A	8	6	0.1	2	0.1	No
De Anza Boulevard to SR 85	AM	**6,900**	**F**	1,800	E	6	5	0.1	1	0.1	No
	PM	6,900	C	1,800	A	8	6	0.1	2	0.1	No

Notes **Bold** font indicates substandard level of service.
Source: *Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study*, 2016. See Table 10 of the Transportation Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants.

c) *Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

The project is a five-story hotel building that would be 60 feet tall at the highest point and is not located in an airport influence area or within an airport land use plan. The nearest public airports are San Jose International Airport, approximately 5.1 miles to the northeast, and Palo Alto Airport, approximately 10.5 miles to the northwest. Given the distance from the nearest public use airport, the project would not be subject to any airport safety hazards. The project would also not have an adverse effect on aviation safety or flight patterns. *No impacts* would occur and no mitigation measures would be required.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Project Access Points

As shown on Figure 3-16 in Chapter 3 of this Initial Study, vehicular and bicycle access to the project site would be from; 1) the driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way (#8) intersection and 2) the North Wolfe Road/Pruneridge Avenue (#9) intersection. These locations are evaluated in criterion (a) and the level-of-service impacts were determined to be less than significant.

The driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way (#8) intersection currently allows inbound and outbound right turns only from North Wolfe Road. The project proposes to modify this intersection in one of two options, which are discussed below.

Wolfe Road Access Option #1:

Approval of Option #1 would result in no modifications to the turn movements at the North Wolfe Road/Pruneridge Avenue (#9) intersection and modifications to the driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way (#8) would prohibit outbound trips but continue to allow inbound trips limited to right turns only from North Wolfe Road. This driveway is currently limited to inbound right turns only from North Wolfe Road because the driveway does not squarely line up with the Apple Park Way leg of the intersection. This misalignment is shown on Figure 3-3 in Chapter 3 of this Initial Study. As shown on Figure 3-4 in Chapter 3 of this Initial Study, the proposed project would install a strip of landscaping between this access point and the existing Cupertino Village to the north. The landscaping improvements and narrowing of this access point would improve pedestrian and bicycle movement at this intersection, which aligns with City's General Plan visions to improve walkability by eliminating an additional and potentially unsafe driveway opening (General Plan Policy M-3.5).

The incorporation of this modification to prohibit outbound trips, would shift existing traffic from the Cupertino Village currently utilizing this right-turn exit only driveway (two outbound trips during the AM, and 20 outbound trips during the PM) to the other existing right-turn only shopping center driveway located just under 300 feet to the north. Because these volumes are considered to be a small amount, the shift would not have a noticeable effect on the driveway operations to the north.

The project-generated gross trips that are estimated to occur at North Wolfe Road/Pruneridge Avenue (#9) intersection are 34 inbound trips and 40 outbound trips during the AM peak hour, and 32 inbound trips and 57 outbound trips during the PM peak hour. Based on the traffic volumes near the project site and observations of existing traffic operations along North Wolfe Road, vehicle queues are not expected to exceed a few (two to three) vehicles in length during the peak hours. Given that this driveway positioned as the west leg of the Wolfe Road/Pruneridge Avenue (#9) intersection, inbound and outbound left-turning project trips are made under a protected left-turn signal.

The project-generated gross trips that are estimated to occur at the driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way (#8) intersection are 22 inbound trips during both the AM and PM peak hours and no outbound trips would be permitted. Based on the traffic volumes near the project site and the proposed turn-restrictions at this entrance, vehicle queuing issues would not occur.

Accordingly, no hazards are anticipated at these entrance points under Option #1. Impacts related to hazardous intersection conditions would be *less than significant*.

Wolfe Road Access Option #2:

Approval of Option #2, like Option #1, would result in no modifications to the turn movements to the North Wolfe Road/Pruneridge Avenue (#9) intersection. However, Option #2 would result in the closure of the driveway to the Cupertino Village at the North Wolfe Road/Apple Park Way (#8) intersection. Accordingly, the existing right-turn entry/exit restrictions at this intersection would be removed.

The incorporation of this modification would shift existing traffic to/from the Cupertino Village currently utilizing this right-turn entrance/exit only driveway (two inbound and two outbound trips during the AM, and 15 inbound and 20 outbound trips during the PM) to the other existing right-turn only shopping center driveway located just under 300 feet to the north. Because these volumes are considered to be a small amount, the shift would not have a noticeable effect on the driveway operations to the north.

Project-generated traffic entering the project site from the north (22 AM and PM inbound trips) would be shifted south to the Wolfe Road/Pruneridge Avenue (#9) intersection. With implementation of this site access option, the level of service at the Wolfe Road/Pruneridge Avenue (#9) intersection would remain unchanged at LOS C or better during both peak hours under all traffic scenarios. Thus, with Option #2, project site access would remain adequate. Accordingly, no hazards would occur at these entrance points under this option and impacts would be *less than significant*.

Like Option #1, landscaping would be installed but would be expanded from the strip shown on Figure 3-3 in Chapter 3 to the entire width of the closed intersection and the sidewalk and bike lanes would be continued through the closed intersection gap. While both options would improve pedestrian and bicycle movement in the project area aligns with City's General Plan visions to improve walkability by eliminating a driveway opening (General Plan Policy M-3.5).

In summary, both options would result in less than significant impacts, but Option #2, which would completely close the driveway to the Cupertino Village at the at the North Wolfe Road/Apple Park Way (#8) intersection would eliminate the potential for illegal left turns into the site from northbound North Wolfe Road and illegal attempts to align with the lane allowing U-turns to go in the northbound direction on North Wolfe Road at the Apple Park Way intersection that have been observed and reported to City staff. Additionally, Option #2 would more fully align with General Plan Policy M-3.5 improve pedestrian and bicycle movement in the project area.

Sight Distance

There are no existing trees or visual obstructions along the project frontage to obscure sight distance at the project driveways. All proposed landscaping would be routinely maintained at the project access points to be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on North Wolfe Road. In addition, the proposed hotel signage would be located to maintain the existing Caltrans-acceptable sight distance of 300 feet for North Wolfe Road to ensure an unobstructed view for drivers exiting the site. Note this site distance is based on a speed limit of 40 miles per hour. However, Wolfe Road is posted at 35 miles per hour; therefore, this is a conservative distance. Safety impacts associated with sight distance would be *less than significant*.

Truck Circulation

The designated loading area for delivery trucks is proposed to be located on the northern edge of the project site, adjacent to Cupertino Village. A truck loading dock would be accessed through the loading area. The preliminary site plan was reviewed for truck access using truck turning-movement templates for a truck types similar in size to small emergency vehicles, garbage trucks, and small to medium delivery and moving trucks (e.g., single-unit 30-foot (SU-30) trucks). Based on the preliminary site plan configuration, the off-street loading space would measure 18 feet wide by 38 feet long by 14 feet high and would provide adequate access for SU-30 truck types. While the 14-foot height would not cause a safety concern, the City standard is 15 feet high and the project may need to be revised during the approval process. Due to this loading dock dimension, trucks at this site would be limited to SU-30 or less and signs will be posted at this location identifying these limits. Safety impacts associated with truck circulation would be *less than significant*.

e) Would the project result in inadequate emergency access?

Access to the proposed project would generally be the same as under existing conditions. As described in criterion (d) above, no hazardous driving conditions due to a design feature would occur and adequate access for emergency vehicles would be provided. Emergency vehicles would continue to access the site in much the same way it is accessed today. The SCCFD and City of Cupertino Building Division coordinate the review of building permits. All access driveways would be designed in accordance with City of Cupertino standards and would have to be reviewed and approved by SCCFD.

Project plans include approved fire and emergency access through all phases of construction and operation. Compliance with the provisions of the CFC and the CBC (described above), would ensure that adequate access would be provided. Therefore, the proposed project would not result in inadequate emergency access, *no impacts* would occur and no mitigation measures would be required.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Pedestrian facilities in the study area consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. The project is expected to increase the number of pedestrians using the sidewalks and crosswalks in the area. Project plans show existing sidewalks of approximately 8 feet in width backed by landscaping along its Wolfe Road frontage. The project would also construct a new 5-foot wide sidewalk along the southern frontage of the site. Although some sidewalk and crosswalk connections are missing along Pruneridge Avenue, the overall network of sidewalks and crosswalks in the study area has adequate connectivity and provides pedestrians with safe routes to transit services and other points of interest. Note that the project would not eliminate any existing pedestrian facilities, nor would it conflict with any adopted plans or policies any of the proposed for new pedestrian facilities.

There are some existing bike facilities in the immediate vicinity of the project site (see Chapter 2 for details). There are also many planned additional bicycle facilities in the study area, including buffered bike lanes along Wolfe Road, Homestead Road, and De Anza Boulevard, as well as a Class I bikeway along Blaney Avenue and the Cupertino Loop Trail south of I-280. The project would not remove any bicycle facilities, nor would it conflict with any adopted plans or policies for new bicycle facilities. However, the project applicant would still be required to pay the required City of Cupertino Traffic Impact fees, which supports the ongoing improvements to the citywide bicycle infrastructure.

The project site is well-served by VTA bus routes. The closest bus stops are located a two-minute walk (about 500 feet) to and from the project site, providing access to local bus routes 26 and 81. Additional bus routes are available at the Vallco Shopping Center Park & Ride Lot, located about a mile south of the project site, and Bus Route 26 provides direct access to the Vallco Shopping Center. The VTA has not established policies or significance criteria related to transit vehicle delay. The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

In summary, there would be adequate availability of alternative modes of travel including pedestrian, bicycle, and transit. The proposed project would not displace modify or interfere with any transit stop, sidewalk, or bicycle lanes. In addition, the project would not generate a demand for transit that would exceed the capacity of the system. Therefore, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Accordingly, impacts would be *less than significant*.

XVI. UTILITIES AND SERVICE SYSTEMS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❐	❐	■	❐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❐	❐	■	❐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❐	❐	■	❐
d) Have insufficient water supplies available to serve the project from existing and identified entitlements and resources?	❐	❐	■	❐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❐	■	❐	❐
f) Not be served by a landfill with sufficient permitted capacity to accommodate the buildout of the project's solid waste disposal needs?	❐	❐	■	❐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❐	❐	■	❐
h) Result in a substantial increase in natural gas and electrical service demands requiring new energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities?	❐	❐	■	❐

EXISTING CONDITIONS

Chapter 4.14 includes a recent discussion of the existing conditions for each of the utility providers listed below:

- The Santa Clara Valley Water District (SCVWD) is the primary water resources agency for Santa Clara County. The project site is located within the California Water Service (Cal Water) Los Altos Suburban District (LASD) service area, and Cal Water would supply water for the project. Water supply for the LAS District is a combination of groundwater from wells in the LASD and treated water purchased from SCVWD.
- Cupertino Sanitary District (CSD) provides sanitary sewer services for the project site. Wastewater would be treated at the San Jose/Santa Clara Water Pollution Control Plant (SJ/SCWPCP).

- Recology South Bay (Recology) would provide curbside recycling, garbage, and compost and yard waste service to the residents of the project. The City has a contract with Newby Island Sanitary Landfill until 2023, which, according to CalRecycle, had a remaining capacity of 21,200,000 cubic yards and daily disposal capacity is 4,000 tons per day as of October 31, 2014.[82] However, according to the Santa Clara County Integrated Waste Management Plan, the landfills in the County (including NISL where the City's collected solid waste is currently being landfilled) have adequate disposal capacity beyond 2026.[83] The City, therefore, has options for landfill service once the City's existing contract with NISL ends in 2023.
- Gas and electricity would be supplied to the project site by Pacific Gas & Electric (PG&E).

A water supply assessment (WSA) is required pursuant to Senate Bill 610 (SB 610) for certain projects such as hotel or motel developments exceeding 500 rooms. Because this development is within the 500-room threshold, a WSA would not be required and was not prepared for this project.

DISCUSSION

a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

The CSD sewer collection system directs wastewater to the SJ/SCWPCP, which is jointly owned by the cities of San José and Santa Clara. The San Francisco RWQCB established wastewater treatment requirements for the SJ/SCWPCP in an NPDES Permit (Order No. R2-2009-0038), adopted April 8, 2009 and effective June 1, 2009.[84] The NPDES Order sets out a framework for compliance and enforcement applicable to operation of the SJ/SCWPCP and its effluent, as well as those contributing influent to the SJ/SCWPCP. This NPDES Order currently allows dry weather discharges of up to 167 million gallons per day (mgd) with full tertiary treatment, and wet weather discharges of up to 271 mgd with full tertiary treatment.

The proposed project would have a significant environmental impact if it would result in a violation of the sanitary wastewater treatment requirements established in the NPDES Permit issued by the RWQCB. The SJ/SCWPCP, serving as the Discharger, has an approved pretreatment program, which includes approved local limits as required by prior permits. The SJ/SCWPCP is required to monitor the permitted discharges in order to evaluate compliance with permit conditions.

The proposed hotel project does not involve industrial uses likely to substantially increase pollutant loading levels in the sanitary sewer system. Therefore, the proposed project is not expected to exceed

[82] CalRecycle website, http://www.calrecycle.ca.gov/SWFacilities/Directory/43-AN-0003/Detail/, accessed May 8, 2018.
[83] Santa Clara County Integrated Waste Management Plan, County of Santa Clara Environmental Resources Agency, 1996.
[84] San Francisco RWQCB NPDES Permit (Order No. R2-2009-0038) for SJ/SCWPCP, http://www.waterboards.ca.gov/rwqcb2/board_info/agendas/2009/april/SJSC_FinalOrder%20-%204-09.pdf, accessed May 8, 2018.

treatment standards established by the RWQCB. Impacts to sanitary wastewater quality would be *less than significant*.

b) *Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

The proposed project would result in a significant impact if it would result in the construction of new wastewater treatment facilities or the expansion of existing facilities, the construction of which would have a significant effect on the environment. As discussed above in criterion (a) above and criterion (e) below, future demands from the proposed project would not exceed the design or permitted capacity of the SJ/SCWPCP that serves the project site. Future water treatment demand was assessed in consultation with the City of Cupertino and includes consideration of development in the city through the 2040 buildout horizon of the General Plan. Therefore, development of the proposed project would not require any improvements not already considered and the impact of the proposed project on SJ/SCWPCP would be *less than significant.*

c) *Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

As discussed under criterion (d) in Section IX, Hydrology and Water Quality, above, the proposed project would not require the expansion of existing storm drain facilities. The project would involve the redevelopment of a previously developed site and a decrease in impervious surface is expected. All new development that, like the proposed project, creates or replaces 10,000 square feet or more of impervious surface would be subject to Santa Clara Valley Urban Runoff Pollution Prevention Program Provision C.3 guidelines for stormwater control, as described under criterion a. Through C.3 compliance, the proposed project would involve actions to minimize runoff from the project site as described in Section IX, Hydrology and Water Quality, above. Consequently, the proposed project would not require the expansion of existing stormwater facilities or the construction of new facilities, the construction of which could otherwise have significant impacts. Therefore, impacts would be *less than significant* and no mitigation measures would be required.

d) *Would the project have insufficient water supplies available to serve the project from existing and identified entitlements and resources?*

As shown in the General Plan EIR in Chapter 4.14, the water supply at project buildout year 2020 would be 13,078 acre feet[85] per year (afy) and at General Plan buildout year 2040 would be 16,984 afy. As discussed in the General Plan EIR, buildout of the General Plan would not result in insufficient water supplies from Cal Water under normal year conditions or during single-dry year and multiple-dry years, with the proposed and existing water conservation regulations and measures in place. The water supply evaluation prepared for the General Plan EIR included new development in the City at a greater number

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[85] One *acre-foot* equals about 326,000 gallons, or enough water to cover an *acre* of land, about the size of a football field, one *foot* deep.

of hotel rooms than proposed under the project (1,000 rooms compared to 185 rooms); therefore, water supply impacts were adequately addressed in the General Plan EIR.

The applicable water use generation rate for hotel rooms and banquet areas, such as the proposed project, would be 0.50 gallons per day per square foot (gpd/sf). Therefore, the estimated water demand is 185 hotel rooms x 390 square foot per room x 0.50 gpd/sf for a total of 72,151 gpd or 81 afy.[86] The Water Supply Evaluation prepared for the General Plan EIR estimated a total of 1,339 hotel rooms (1,000 new rooms plus 339 existing rooms) would generate water demand of 261,100 gpd or 293 afy. Accordingly, the proposed project's water demand would not exceed the available water supply in 2020 at project buildout or by the General Plan buildout year (2040). Accordingly, impacts to water supply under the proposed project would be *less than significant*.

e) *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

The proposed project would have a significant impact if project demand exceeds the wastewater service capacity of the SJ/SCWPCP, or the contractual wastewater limits for the collection systems of the CSD or City of Santa Clara.

Based on the May 2007 *City of Santa Clara Sewer Capacity Assessment*, the estimated wastewater generation rate for hotel uses is 100 gpd per room. Applying this generation rate, the proposed 185-room hotel would generate up to 18,500 gpd or approximately 0.0185 mgd of wastewater.

The SJ/SCWPCP's current total capacity of 450 mgd. Combined, the proposed project's wastewater generation (0.0185 mgd) and the existing wastewater generated (105 mgd) would not exceed the SJ/SCWPCP's current total capacity of 450 mgd.

The CSD has a contractual maximum treatment allocation of 7.85 mgd, on average, with the SJ/SCWPCP. At the time of the General Plan EIR, the wastewater generation of 5.3 mgd was estimated by the CSD.[87] Combined, the existing wastewater flow (5.3 mgd) plus the proposed project (0.0185 mgd) would not exceed the City's contractual allocation limits (7.85 mgd). Furthermore, the proposed 185-room hotel is within the 1,339-hotel-room limit evaluated in the General Plan EIR; therefore, no new impact would result.

The CSD wastewater system flows through a portion of the City of Santa Clara's sewer system. The contractual agreement between CSD and the City of Santa Clara, for this portion of the Santa Clara sewer system, allows 13.8 mgd during peak wet weather flows. The existing CSD peak wet weather flow into the

[86] The SB 610 Water Supply Assessment, prepared for CalWater by Yarne & Associates, Inc., March 1, 2016 for the certified General Plan EIR.

[87] City of Cupertino, General Plan (Community Vision 2015–2040, Appendix B: Housing Element Technical Report, 4.3 Environmental, Infrastructure & Public Service Constraints, page B-93.

Santa Clara system is 10.7 mgd.[88]Therefore, there is an available capacity of approximately 3.1 mgd during peak wet weather flows for the CSD service area, which includes the project site. A peak wet weather flow multiplier of four times the average dry weather flow was used to establish the available wastewater generation capacity for average wastewater flows for the proposed project.[89] Therefore, the available sewer capacity of 3.1 mgd during peak wet weather flow equates to approximately 0.775 mgd of available capacity for average dry weather flow. Incorporating estimated wastewater generation from the proposed project and from other potential projects as established by the General Plan and other approved projects, the total capacity needed to serve these projects is approximately 0.749 mgd.[90] Because the needed capacity (0.749 mgd) is less than the total available average dry weather capacity (0.775 mgd), there is adequate sewer capacity in the contractual agreement between CSD and the City of Santa Clara to serve the project and the General Plan buildout.

According to the City, there is the possibility that additional hydraulic modeling could be completed by the CSD on the CSD wastewater system prior to issuing building permits for the proposed project, which is anticipated to be operating by year 2021. If additional hydraulic modeling is performed on the CSD system prior to issuing building permits for the Cupertino Village Hotel project that indicates that construction and operation of the proposed hotel would exceed the 13.8 mgd contractual limit through the City of Santa Clara and CSD a significant impact would occur. With implementation of Mitigation Measure UTIL-1, impacts would be *less than significant*.

Mitigation Measure UTIL-1: No building permits shall be issued by the City for the proposed Cupertino Village Hotel Project that would result in exceeding the permitted peak wet weather flow capacity of 13.8 mgd through the Santa Clara sanitary sewer system. The project applicant may demonstrate, to the satisfaction of the City of Cupertino and Cupertino Sanitary District (CSD), that the proposed hotel would not exceed the peak wet weather flow capacity of the Santa Clara sanitary sewer system by implementing one or more of the following methods:

1) Reduce inflow and infiltration in the CSD system to reduce peak wet weather flows; or

2) Increase on-site water reuse, such as increased grey water use, or reduce water consumption of the fixtures used within the proposed project, or other methods that are measurable and reduce sewer generation rates to acceptable levels, to the satisfaction of the CSD.

The proposed project's estimated wastewater generation shall be calculated using the generation rates used by the *San Jose-Santa Clara Water Pollution Control Plant Specific Use Code & Sewer Coefficient* table in the May 2007, *City of Santa Clara Sanitary Sewer Capacity Assessment*,[91] unless

[88] Mark Thomas. Email communication with Cupertino Public Works. July 19, 2018.
[89] A four times multiplier is generally considered a conservative figure.
[90] Sewage coefficients use to calculate the sewer generation rates for the various uses in the project and the General Plan buildout were taken from the San Jose - Santa Clara Water Pollution Control Plant Specific Use Code & Sewer Coefficient table and from the City of Santa Clara Sanitary Sewer Capacity Assessment, May 2007.
[91] Mark Thomas and Associates. Email communication with Cupertino Public Works. July 19, 2018.

alternative (i.e., lower) generation rates achieved by the proposed project are substantiated by the project applicant based on evidence to the satisfaction of the CSD.

Alternatively, if the prior agreement between CSD and the City of Santa Clara that currently limits the permitted peak wet weather flow capacity of 13.8 mgd through the Santa Clara sanitary sewer system were to be updated to increase the permitted peak wet weather flow, this would also render any impacts to be less than significant. If this were to occur prior to the City's approval of building permits, then Mitigation Measure UTIL-1 would no longer be required to be implemented.

Implementation of the Mitigation Measure UTIL-1 would guarantee that no development on the project site could occur that would exceed 13.8 mgd peak wet weather flow contractual limit through the City of Santa Clara and CSD by ensuring that no building permit would be issued for any structures or units that result in the contractual limit being exceeded until: (1) additional capacity is available through the City of Santa Clara's sewer system; (2) improvements would be made to the CSD sewer system that reduce the peak wet weather flows that enter the City of Santa Clara system; (3) improvements would be made on the project site that ensure the contractual limit is not exceed; or (4) the completion of any combination of these approaches that adequately addresses potential capacity issues. Accordingly, impacts would be *less than significant with mitigation.*

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the buildout of the project's solid waste disposal needs?

As discussed in the existing conditions, above, the City contracts with Recology South Bay (Recology) to provide solid waste collection services to residents and businesses in the city. The City has a contract with Newby Island Sanitary Landfill until 2023 and has not secured a new landfill contract. However, according to the Integrated Waste Management Plan, the landfills in the County (including NISL where the City's collected solid waste is currently being landfilled) have adequate disposal capacity beyond 2026. [92] The City, therefore, has options for landfill service once the City's existing contract with NISL ends in 2023. In addition to the Newby Island Landfill, solid waste generated in Cupertino can also be disposed of at the Altamont Landfill and Resource Recovery facility, the Corinda Los Trancos Landfill, Forward Landfill Inc., Guadalupe Sanitary Landfill, Kirby Canyon Recycling and Disposal Facility, the Monterey Peninsula Landfill, Recology Hay Road, the Vasco Road Sanitary Landfill, the Zanker Material Processing Facility, and the Zanker Road Class III Landfill.

Waste management for the proposed project would focus on waste, recycling, and composting. Solid waste generated by construction of the proposed project would largely consist of demolition waste from the existing buildings as well as construction debris. The project would be required to comply with CMC Chapter 16.72, Recycling and Diversion of Construction and Demolition Waste, and the City's Zero Waste Policy, which requires the recycling or diversion at least 65 percent of all generated construction and

[92] Santa Clara County Integrated Waste Management Plan, County of Santa Clara Environmental Resources Agency, 1996.

demolition (C&D) waste by salvage or by transfer to an approved facility.[93,94] Prior to the issuance of any demolition, grading, and/or building permits, the applicant is required to submit a properly completed Waste Management Plan. The Waste Management Plan shall do the following:

- Identify the materials to be diverted from disposal by recycling, reused on the project, or salvaged for future use or sale.
- Specify if materials would be sorted on-site or mixed for transportation to a diversion facility.
- Identify the diversion facility where the material collected will be taken.
- Identify construction methods employed to reduce the amount of waste generated.
- Specify that the amount of materials diverted shall be calculated by weight or volume, but not by both.

Compliance with CMC Chapter 16.72 and the City's Zero Waste Policy would reduce solid waste and construction-related impacts on the landfill capacity.

The operation of the project is estimated to generate approximately 86 net new employees on the site. In 2016, the city of Cupertino's actual disposal rate for employees was 4.5 pounds per person per day (PPD), a much lower disposal rate than the estimated target disposal rate of 8.1 PPD.[95] The city of Cupertino's disposal rates for employees have been below target rates and steadily decreasing since 2007, with the exception of 2014, when the rate (9.8 PPD) exceeded the target (8.10 PPD).[96] The project would also include temporary residents at the hotel. According to CalRecycle, the disposal rate of hotels is estimated to be 2 pounds per day for each room.[97] Applying these disposal rates, the project would generate approximately 1,067 pounds per day or 0.5 tons per day of new waste,[98] which is well within the Newby Island Sanitary Landfill permitted daily disposal capacity of 4,000 tons per day. Anticipated rates of solid waste disposal would have a less-than-significant impact with regard to staying within the target disposal rates, and the project would comply with the City's current recycling ordinances and zero-waste policies, which would further reduce solid waste disposed of in the landfill. Thus, operation-related impacts on landfill capacity would be *less than significant.*

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The proposed project would have a significant environmental impact if it would conflict with standards relating to solid waste or litter control. The City's per capita disposal rate is below the target rate

[93] Cupertino Municipal Code, Title 16, Buildings and Construction, Chapter 16.72, Recycling and Diversion of Construction and Demolition Waste, Section 16.72.040, Diversion Requirement.

[94] City of Cupertino, Public Works, Garbage & Recycling, https://www.cupertino.org/our-city/departments/environment-sustainability/waste, accessed October 4, 2018.

[95] CalRecycle, "Jurisdiction per Capita Disposal Trends: Cupertino," http://www.calrecycle.ca.gov/, accessed June 10, 2018.

[96] CalRecycle, "Jurisdiction per Capita Disposal Trends: Cupertino," http://www.calrecycle.ca.gov/, accessed June 10, 2018.

[97] CalRecycle, "Estimated Solid Waste Generation Rate," https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates, accessed June 10, 2018.

[98] (8.1 PPD x 86 net new employees) + (2 PPD x 185 rooms) = 1,067 PPD

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established by CalRecycle. As part of the *Countywide Integrated Waste Management Plan* to address waste management conditions within Santa Clara County, Cupertino adopted a Source Reduction and Recycling Element (SRRE)[99] and Household Hazardous Waste Element (HHWE)[100] in compliance with the California Integrated Waste Management Act.[101] The City has gone beyond the SRRE by implementing several programs, including the City's and Recology's organics or food waste collection program, and Environmental Recycling Day events offered to residents three times per year by Recology. Implementation of the referenced strategies, programs and plans, as well as the Climate Action Plan that was adopted in January 2015, will enable the city to meet the 75 percent solid waste diversion rate by the year 2020. Additionally, in December 2017, the City adopted a Zero Waste Policy.[102] According to the Zero Waste Policy, the City will require, through the City's waste hauling franchise agreement, steadfast and ongoing efforts by the City's franchisee to maintain a minimum residential and commercial waste diversion rate of 75 percent with a goal of reaching and maintaining 80 percent by 2025.These programs will be sufficient to ensure that future development in Cupertino, including the proposed project, would not compromise the ability to meet or perform better than the State mandated target. Additionally, construction and any demolition debris associated with the project would be subject to CMC Chapter 16.72, requiring that a minimum of 65 percent of C&D debris be diverted from landfill.[103] Additionally, the City's Zero Waste Policy also requires that all private construction projects that come through the City's permitting process, and all City projects (through contract requirements), to recover and divert at least 65 percent of the construction waste generated by the project. Compliance with applicable statutes and regulations would ensure that the impact would be *less than significant* and no mitigation measures would be required.

h) *Would the project result in a substantial increase in natural gas and electrical service demands requiring new energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities?*

The proposed project would demolish the existing commercial buildings and replace them with new structures that would meet the current Building and Energy Efficiency Standards. The 2013 Building and Energy Efficiency Standards became effective July 1, 2014. The 2013 Standards are 30 percent more energy efficient than previous standards for non-residential buildings. The project provides connectivity to existing transit, bicycle and pedestrian facilities and locates a hotel development in close proximity to existing hotel-serving land uses and employment centers.

The project site is currently served by existing PG&E distribution systems that would provide natural gas and electricity. As described in Section X, Land Use, above, the proposed project complies with the General Plan land use designation requirements as well as the Zoning district requirements and would not

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[99] City of Cupertino, Public Works, Source Reduction and Recycling Element, September 21, 1992.

[100] City of Cupertino, Public Works, Household Hazardous Waste Element, September 21, 1992.

[101] Cupertino Municipal Code, Title 9, Health and Sanitation, Chapter 9.6, Solid Waste, Non-Organic Recycling and Recycling Areas, Section 9.16.010(a), Purpose.

[102] City of Cupertino, Public Works, Garbage & Recycling, https://www.cupertino.org/our-city/departments/environment-sustainability/waste, accessed October 4, 2018.

[103] Cupertino Municipal Code, Title 16, Buildings and Construction, Chapter 16.72, Recycling and Diversion of Construction and Demolition Waste, Section 16.72.040, Diversion Requirement.

result in new growth potential from what was considered in the General Plan. The project would include appropriate on-site infrastructure to connect to the existing PG&E systems and would not require new off-site energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities. Accordingly, impacts would be *less than significant* and no mitigation measures would be required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❒	❒	■	❒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	❒	■	❒	❒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❒	❒	■	❒

DISCUSSION

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The project site is in an urbanized and extensively developed area of Cupertino. Almost entirely built out with commercial and residential development, and associated surface parking, the project site has few green spaces and trees within and surrounding the on-site buildings. There are no sensitive natural communities, no areas of sensitive habitat, and no areas of critical habitat occurring at the project site. Additionally, there are no buildings currently listed or eligible for listing on the California Register of Historical Resources, no recorded archaeological sites, and no known paleontological resources located on the project site. The implementation of Mitigation Measures BIO-1, CULT-1, CULT-2, and TCR-1 would serve to protect nesting birds and unknown cultural resources. Therefore, implementation of the proposed project would result in a *less-than-significant* impact to the quality of the environment, wildlife, and major periods of California history or prehistory.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

CEQA Guidelines Section 15355 defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. CEQA Guidelines Section 15130(b) advises that a discussion of cumulative impacts should reflect both the severity of the impacts and the likelihood of their occurrence. To accomplish these two objectives, CEQA Guidelines Section 15130 permits two different methodologies for completion of a cumulative impact analysis and allows for a reasonable combination of the two approaches:

- The 'list' approach permits the use of a list of past, present, and probable future projects producing related or cumulative impacts, including projects both within and outside the city; and
- The 'projections' approach allows the use of a summary of projections contained in an adopted plan or related planning document, such as a regional transportation plan, or in an EIR prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

Table 4-20 shows the other reasonably foreseeable projects in Cupertino and how they relate to the maximum buildout potential evaluated in the General Plan EIR.

TABLE 4-20 REASONABLY FORESEEABLE DEVELOPMENT PROJECTS IN CUPERTINO

	Hotel	Residential	Commercial	Office
General Plan EIR: Maximum Development Potential	1,339	4,421	1,343,679	4,040,231
Total Foreseeable Development	86	3,938	620,000	1,833,000
Marina Plaza[a]	*122*	*188*		*23,000*
The Hamptons Redevelopment[a]		*600*		
The Forum[a]		*23*		
Westport Cupertino[b]		*204*	*20,000*	
De Anza Hotel[b]	*140*			
Vallco[c]	*339*	*2,923*	*600,000*	*1,810,000*
General Plan EIR: Remaining Development Potential	738	483	723,679	2,207,231

Notes:
a. The project has been approved.
b. The project is under review.
c. The buildout numbers are a sum of the greatest buildout potential for this site and are derived from the approved Vallco Town Center Specific Plan and the approved Vallco SB 35 Application.
Source: City of Cupertino, 2018.

The General Plan EIR evaluated the cumulative effects using the summary of projections approach provided for in CEQA Guidelines Section 15130(b)(1)(B). The General Plan EIR took into account growth from the General Plan within the Cupertino city boundary and Sphere of Influence (SOI), in combination with projected growth in the rest of Santa Clara County and the surrounding region, as forecast by ABAG.

The General Plan EIR included an assessment of the redevelopment of the project site with mixed-use, hotel, retail, and residential projects. The hotel assumptions included an evaluation of up to 300 hotel rooms, which is greater than the proposed 185-room Cupertino Village Hotel. Therefore, as shown in Table 4-20, the project when combined with the other reasonably foreseeable projects in Cupertino would not exceed the maximum buildout potential evaluated in the General Plan EIR. The impact discussions in Section I through Section XVI above describes the proposed project's relationship to and consistency with the scope of development, land use designations, population projections, and cumulative impacts analyses contained in the General Plan EIR. As shown, the project's impacts were determined to be less than significant or less than significant with mitigation in the cumulative context. However, since the certification of the General Plan EIR, the City has approved new development at the Vallco project site. While, as shown in Table 4-20, this development at the Vallco site is consistent with the maximum buildout potential in the General Plan EIR for citywide cumulative discussions (e.g., population and housing, water supply, etc.), the General Plan EIR did not evaluate the specific amount of buildout at the Vallco site that is shown in Table 4-20, therefore, localized cumulative impacts such as traffic, noise, and utilities infrastructure were not captured in the General Plan EIR. Accordingly, the cumulative impact discussion presented below includes a discussion of the cumulative impacts associated with the Vallco site specific development.

The discussion below addresses two aspects of cumulative impacts: (1) would the effects of the cumulative development result in a cumulatively significant impact on the resources in question and, if that cumulative impact is likely to be significant, (2) would the contributions to that impact from the project, which is the subject of this Initial Study, be cumulatively considerable. Per CEQA Guidelines Section 15064(h)(1), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current, and probable future projects. The CEQA Guidelines state that a lead agency has discretion to determine if a project's contribution to a significant cumulative impact is cumulatively considerable.

As discussed in the sections below, the implementation of the proposed project would not be expected to contribute to or result in significant cumulative impacts. The following provides cumulative impact analysis for each impact area discussed in this Initial Study under both scenarios:

- Aesthetics: The cumulative impact for aesthetics includes potential future development under the proposed project combined with effects of development on lands in close proximity to the project site that together would result in a substantial adverse effect on a designated scenic vista or if it would result in a substantial degradation of the visual quality or character in the vicinity of the project site. Due to the existing buildings and natural topography, the new buildings at the Vallco site together with the proposed project would not obstruct any public views to the distant scenic mountains. Therefore, the cumulative development would not result in a cumulatively significant impact to scenic resources and impacts from the proposed project would not be cumulatively considerable.

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The project site is not located on a State scenic highway and no cumulative impact would occur; therefore, the project would also not contribute to a cumulative impact with respect to scenic highways.

Due to the distance of the Vallco site, the cumulative development would not result in a cumulatively significant impact to the visual character or light and glare of the Cupertino Village area and impacts from the proposed project would not be cumulatively considerable. Like the proposed project, other development in the city of Cupertino, including development at the Vallco site would be subject to the City's design review process to ensure that project features such as building design, landscaping, site planning, and signage, are consistent with the City's adopted plans, regulations, and design standards, as required. Moreover, similar to the proposed project, other projects would be required to be in conformance with General Plan goals and policies that seek to preserve and enhance the character of existing neighborhoods in Cupertino. The uniform application of these regulations, goals, and policies would ensure that all development in Cupertino is compatible with its surroundings upon approval. Additionally, the design review requirement as well as subsequent CEQA review, if necessary, would give the City the opportunity to evaluate projects' potential impacts on scenic resources prior to approval. Therefore, the proposed project would not contribute to or result in a significant cumulative impact. Cumulative impacts would be *less than significant*.

- Air Quality: Emissions affecting air quality are, by their nature, regionally and globally cumulative impacts; therefore, the discussion in Section II, Air Quality, of this Initial Study, evaluates cumulative conditions. As discussed in Section II, the San Francisco Bay Area Air Basin (SFBAAB) is currently designated as a nonattainment area for California and national O_3, California and national fine inhalable particular matter ($PM_{2.5}$), and California coarse inhalable particulate matter (PM_{10}) ambient air quality standards (AAQS). Any project that does not exceed or can be mitigated to less than the Bay Area Air Quality Management District (BAAQMD) significance levels will not result in a significant or cumulatively considerable impact. The proposed project would result in a less-than-significant impact with implementation of Mitigation Measures AQ-1 and AQ-2. Therefore, implementation of the proposed project would not contribute to or result in a cumulative impact with respect to air quality. Cumulative impacts would be *less than significant*.
- Biological Resources: The potential impacts of a proposed project on biological resources tend to be site-specific, and the overall cumulative effect is dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (e.g., marshlands, native grasslands, oak woodlands, riparian scrub and woodland, etc.), populations of special-status plant or animal species, and wetland features (including seasonal wetlands and drainages). Environmental review of specific development proposals in the vicinity of a development site should serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts, including development for the remaining undeveloped lands in the surrounding area.

  As discussed in Section III, Biological Resources, of this Initial Study, the footprint of the project site lacks any sensitive biological resources. In addition, compliance with Mitigation Measure BIO-1 and City's Tree Protection Ordinance, CMC Section 14.80.050 the projects impacts would be less than significant with mitigation. Accordingly, the project would not contribute to any cumulative impacts on special-status species, sensitive natural communities, or regulated wetlands. And the impacts associated with future development facilitated by the proposed project would not contribute to a cumulative reduction of important wildlife habitat. Therefore, implementation of the proposed project would have a *less-than-significant* cumulative impact with respect to biological resources.

- Cultural and Tribal Cultural Resources: The cumulative impact for cultural and tribal cultural resources includes development under the proposed project combined with effects of development on lands within Cupertino and the region. The proposed project, in conjunction with development on lands within the city, has the potential to cumulatively impact cultural resources including archaeological and paleontological deposits, human remains, and tribal cultural resources. As discussed in Sections IV Cultural and Section V, Tribal Cultural Resources, of this Initial Study, the project site is not included in the California Register and is not included as a designated historic resource in the City's Historic Resource Inventory database; thus, the proposed project would result in no impact to historic architectural resources. Compliance with Mitigation Measures CULT-1, CULT-2, as well as Health and Safety Code Section 7050.5 and the CEQA Guidelines Section 15064.5(e), would ensure that implementation of the proposed project would have a less-than-significant impact to unknown archaeological resources, paleontological resources, human remains, or tribal cultural resources. Accordingly, the proposed project would not create or contribute to a cumulative impact on cultural resources. Additionally, the existing federal, State, and General Plan policies serve to protect cultural resources Cupertino. Other projects in Cupertino would be required to comply with these regulations to avoid impacts to historical, archaeological, paleontological resources, human remains, and tribal cultural resources to the maximum extent practicable. Therefore, in combination with past, present, and reasonably foreseeable projects, the project would result in a *less-than-significant* cumulative impact with respect to cultural resources.
- Geology and Soils: The proposed project or another project the surrounding vicinity would be required to meet the latest standards set forth in the California Building Code. The California Building Code requirements, along with requirements in the CMC, ensure that any development on unstable soil or expansive soil is regulated to minimize potential hazards. The CMC includes requirements for the performance and review of geological investigations prior to the issuance of building permits in a State-designated Alquist-Priolo fault zone. Moreover, in combination with foreseeable development in the surrounding area, implementation of the proposed project would not change the geology or soil characteristics of the project area as a whole. The proposed project would not result in a significant impact with respect to geology and soils, and would not significantly contribute to cumulative impacts in this regard. Therefore, the cumulative impacts associated with potential future development allowed by the proposed project, together with anticipated cumulative growth, would result in a *less-than-significant* cumulative impact with respect to geology and soils.
- Greenhouse Gas Emissions: Emissions contributing to the accumulation of GHG emissions are by nature regionally and globally cumulative impacts; therefore, the discussion in Section VII, Greenhouse Gas Emissions, of this Initial Study, evaluates cumulative impacts. As discussed in Section VII, the proposed project would not exceed BAAQMD's bright-line screening threshold of 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$). The proposed project as well as cumulative projects would also be subject to measures in the City's CAP in addition to statewide measures to reduce GHG

emissions. Therefore, the proposed project would not substantially contribute to long-term cumulative GHG emissions and cumulative impacts would be *less than significant.*

- Hazards and Hazardous Materials: As discussed in Section VIII, Hazards and Hazardous Materials, of this Initial Study, the project site includes no hazardous materials. The proposed project would introduce a hotel development on the project site, which could release hazardous materials into the environment during construction, but this type of use would not involve the use of hazardous materials large enough quantity (cleansers, degreasers, pesticides, and fertilizers) to create a hazard to the public or the environment. Standard precautions and best management practices to prevent spills would minimize exposure of hazardous materials to people and the environment would be carried out in accordance with applicable local, State, and federal laws described in Section VIII. Therefore, the proposed project would not contribute to a significant cumulative hazardous materials impact. In addition, the project site is not in the vicinity of a private airstrip or airport, located in a wildfire hazard area, and would not obstruct any routes identified in the City of Cupertino Emergency Operations Plan. Accordingly, implementation of the proposed project would not contribute to a significant cumulative impact related to airports, wildfires, or interference with an emergency response plan. Future development on the project site and other future development in Cupertino would be required to comply with the existing regulations, which ensure the protection of worker and community safety during construction, in addition to other local, State and federal regulations discussed in Section VIII aimed at protecting public safety. As such, the cumulative impacts from of the proposed project would be *less than significant*.
- Hydrology and Water Quality: The geographic context used for the cumulative assessment of water quality and hydrology impacts is the Calabazas Creek watershed. As discussed in Section IX, Hydrology and Water Quality, the proposed project would be required to comply with State and local policies that would reduce hydrology and water quality impacts to less-than-significant levels. Any new development in Cupertino and the Calabazas Creek watershed would be subject, on a project-by-project basis, to independent CEQA review, if necessary, as well as policies in the General Plan, design guidelines, zoning codes, adherence to applicable City requirements that protect water quality. More specifically, potential changes from cumulative development related to stormwater quality, stormwater flows, drainage, impervious surfaces, and flooding would be minimized via the implementation of stormwater control measures, retention, and low impact development measures, and review by City personnel that could require additional measures to reduce potential flooding impacts.

  Compliance with the San Francisco Bay Regional Water Quality Control Board's (San Francisco Bay RWQCB's) Municipal Regional Permit (MRP) would require best management practices and low impact development features to be included in any proposed project. These best management practices include site design, source control, and treatment control measures that provide both flow control and treatment to runoff before it enters the storm drain system or receiving water bodies. In addition, all projects that disturb over 1 acre or more would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) with erosion and sediment controls that address construction impacts.

All cumulative projects would be subject to similar permit requirements. The water quality regulations implemented by the San Francisco Bay RWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MRP works with all municipalities to manage stormwater systems to be collectively protective of water quality. For these reasons, impacts to water quality for the proposed project are not cumulatively considerable and the cumulative impact would be *less than significant.*

- Land Use: As discussed in Section X, Land Use, of this Initial Study, the proposed project would not conflict with any applicable land use plans, policies, or regulations. In addition, the proposed project would not physically divide an existing community, nor would the proposed project conflict with an adopted conservation plan. Therefore, the proposed project would not contribute to or result in a significant cumulative impact land use and planning impact. Cumulative impacts would be *less than significant*.
- Noise: As discussed in Section XI, Noise, of this Initial Study, the proposed hotel could increase the community noise environment around the area due to stationary sources from construction equipment and building operation (e.g., heating, ventilation, and air conditioning equipment on top of the future buildings) and from vehicles trips traveling to and from the project site. However, operation of the proposed hotel would not exceed the City's noise standards, and impacts from construction noise could be reduced to less-than-significant levels with implementation of Mitigation Measure NOISE-1. There are no reasonably foreseeable cumulative projects in the area of the proposed project that could increase the community noise level. To determine the cumulative traffic noise level increase, the Cumulative Plus Project traffic volumes in the Vallco Special Area Specific Plan Transportation Impact Analysis [104] were compared to the existing traffic volumes. The permanent noise level increase was estimated to be 2.9 dBA or less on study roadway segments. A noise level increase of 3 dBA community noise equivalent level (CNEL) is considered barely perceptible in outdoor environments and would not represent a potentially significant noise increase. Accordingly, the proposed project would not contribute to or result in a significant cumulative impact. Cumulative impacts would be *less than significant*.
- Population and Housing: Impacts of cumulative growth are considered in the context of their consistency with regional planning efforts. As described in Section XII, Population and Housing, the proposed project would not induce a substantial amount of growth or require the construction of replacement housing elsewhere. As shown in Table 4-20, the cumulative projects are within the scope of development evaluated in the General Plan EIR which was found to be consistent with the regional growth projections (i.e., Plan Bay Area). The proposed project would be an infill hotel development and would not indirectly induce substantial growth through the extension of roads or other new infrastructure that would lead to additional growth outside the project site. Therefore, implementation of the proposed project would be consistent with these regional growth projections and would not induce substantial regional population growth. Thus, the proposed project would not

[104] Cumulative Plus Project traffic volumes were obtained from the Vallco Special Area Specific Plan Transportation Impact Analysis, May 22, 2018.

contribute to cumulative growth that would displace substantial numbers of people or housing or exceed planned levels of growth. As future projects are proposed, they would be required to demonstrate consistency with regional growth projections the same as the proposed project. Therefore, cumulative impacts would be *less than significant*.

- Public Services: The primary purpose of a public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times or other performance objectives. Public service facilities need improvements (i.e., construction, renovation or expansion) as demand for services increase. Increased demand is typically driven by increases in population. A significant environmental impact would occur if a proposed project would exceed the ability of public service providers to adequately serve residents, thereby requiring construction of new facilities or modification of existing facilities resulting in a physical impact to the environment. As with the proposed project, future development in Cupertino would be required to undergo project review and comply with the most recent California Building Code as California Fire Code as incorporated into the CMC and General Plan policies required to reduce impacts to public services. In addition, future projects would also be required to pay all developer impact fees to the school districts that serve their sites pursuant to Section 65996 of the California Government Code, which is deemed to fully mitigate the impacts of new development on school services. As discussed in Section XIV, Public Services, of this Initial Study, the proposed project would not cause any of the public service providers that serve the project site to construct a new facility or modify an existing facility in order to meet their performance objectives. Accordingly, the cumulative development would not result in a cumulatively significant impact to public services and impacts from the proposed project would not be cumulatively considerable. Cumulative impacts would be *less than significant*.
- Parks and Recreation: Like the proposed project, the cumulative projects in Cupertino that introduce new residents to Cupertino would be required to comply with the parkland requirements in the CMC, which requires new housing projects to provide 3.0 acres of parkland per 1,000 population or pay the equivalent parkland in-lieu fee. The use of parkland fees supports the development, acquisition, and renovation of park facilities and recreational facilities. In addition, other proposed hotels, like the proposed project would be pay the City's Transient Occupancy Tax that would support the City's public services funds that are used in part to maintain the City's recreational facilities. Accordingly, the cumulative development would not result in a cumulatively significant impact to park and recreation facilities and impacts from the proposed project would not be cumulatively considerable. Therefore, cumulative impacts would be *less than significant.*
- **Transportation and Circulation:** As discussed in Section XV, Transportation and Circulation, the TIA for the proposed project includes additional traffic generated by approved projects only. The Future Growth scenario volumes were calculated by applying a 1.2 percent annual growth factor that would capture new growth in the area to the project's buildout year of 2021. The TIA does not consider specific development projects, such as the development permitted on the Vallco site. Furthermore due to the minimal trips generated (less than 100 daily trips) the TIA evaluated CMP intersections only per the CMP Guidelines. As shown in Section XV, the proposed project's traffic-related impacts were found to be less than significant at project buildout year of 2021.

The EIR prepared for the Vallco development under the Specific Plan scenario was required to evaluate the cumulative long-range transportation impacts, which included the proposed Cupertino Village Hotel. The Vallco EIR found that the proposed Vallco development, under the Specific Plan option, would result in significant impacts to the CMP intersections that would be affected by the proposed project as follows:

- Wolfe Road/Fremont Avenue #2 (Vallco intersection 23)
- De Anza/Homestead #5(Vallco intersection #8);
- Homestead/North Wolfe #6 (Vallco Intersection #26)
- Homestead/Lawrence #7 (Vallco Intersection #48)
- Vallco/North Wolfe #12(Vallco intersection #31)

Accordingly, the cumulative development would result in a cumulatively significant impact. The proposed Cupertino Village Hotel project is anticipated to be constructed and operating by 2021. Because the full buildout development at Vallco is not anticipated to be online prior to this time, the proposed project's analysis that captured the 1.2 percent growth rate in the City would adequately address the level of cumulative development that could occur by year 2021 and would not result in a cumulatively considerable impact. Furthermore, the project applicant would be required to pay the required City of Cupertino Traffic Impact fees, which supports the ongoing improvements to the citywide roadway infrastructure.[105] No other significant cumulative impacts would occur with respect to safety, transit and impacts to other modes of transportation (i.e., pedestrians and bicycle infrastructure). Accordingly, cumulative impacts are considered *less than significant*.

- **Utilities and Service Systems:** Impacts evaluated under Section XVI, Utilities and Service Systems, are assessed in their cumulative context. Same as the proposed project, future projects developed in Cupertino would be required to demonstrate there are adequate supplies and capacity to serve their projects in addition to the other users in the service provider's area. Cumulative development would also be required to comply with regulations that reduce water use, solid waste disposal, and conserve energy as described in Section XVI. Therefore, cumulative impacts would be *less than significant.*

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

As discussed previously, the proposed project would not result in a significant impact that could not be mitigated to a less-than-significant level, thus the proposed project's environmental effects would be *less than significant.*

[105] City of Cupertino, City-Wide Traffic Impact Fee, https://www.cupertino.org/our-city/departments/public-works/permitting-development-services/proposed-city-wide-traffic-impact-fee, accessed on September 20, 2018.

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5. Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Cupertino Village Hotel Project. The purpose of the MMRP is to ensure the implementation of project-specific mitigation measures identified as part of the environmental review for the proposed project. The MMRP includes the following information:

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

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

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
AIR QUALITY					
Mitigation Measure AQ-1: The project's construction contractor shall comply with the following Bay Area Air Quality Management District best management practices for reducing construction emissions of fugitive dust (PM_{10} and $PM_{2.5}$): ▪ Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. ▪ Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas and staging areas at the construction site to control dust. ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydroseed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt/sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways.	Applicant	During construction	City of Cupertino Public Works and Building Departments	Plan Review and Approval	During scheduled construction site inspections
Mitigation Measure AQ-2: Prior to issuance of any grading, demolition and/or building permits, the construction contractor(s) shall demonstrate the following, during construction, on all plans:	Applicants	During construction	City of Cupertino Public Works and Building	Plan Review and Approval	During scheduled construction site inspections

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ The use of construction equipment fitted with Level 3 Diesel Particulate Filters for all equipment of 50 horsepower or more. ▪ Maintain a list of all operating equipment in use on the project site for verification by the City of Cupertino Building Division official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations. ▪ Ensure that all nonessential idling of construction equipment is restricted to 2 minutes, which is in compliance with California Air Resources Board Rule 2449, which limits idling to 5 minutes or less. ▪ Ensure that all construction plans submitted to the City of Cupertino Planning Department and/or Building Division clearly show the requirement for Level 3 Diesel Particulate Filters emissions standards for construction equipment over 50 horsepower.			Departments		
BIOLOGICAL RESOURCES					
Mitigation Measure BIO-1: Nests of raptors and other birds shall be protected when in active use, as required by the federal Migratory Bird Treaty Act and the California Department of Fish and Game Code. The construction contractor shall indicate the following on all construction plans, if construction activities and any required tree removal occur during the breeding season (February 1 and August 31). Preconstruction surveys shall: ▪ Be conducted by a qualified biologist prior to tree removal or grading, demolition, or construction activities. Note that preconstruction surveys are not required for tree removal or construction, grading, or demolition activities outside the nesting period. ▪ Be conducted no more than 14 days prior to the start of tree removal or construction. ▪ Be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. ▪ Document locations of active nests containing viable eggs or young	Applicant	Prior to construction During construction	Qualified biologist in consultation with California Department of Fish and Wildlife as needed	Preconstruction Survey	Once for survey; ongoing if nesting birds identified and until they have left the nest

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
birds. Protective measures for active nests containing viable eggs or young birds shall be implemented under the direction of the qualified biologist until the nests no longer contain eggs or young birds. Protective measures shall include: ▪ Establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by the qualified biologist, taking into account the species of birds nesting, their tolerance for disturbance and proximity to existing development. In general, exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds. ▪ Monitoring active nests within an exclusion zone on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status. ▪ An increase in the radius of an exclusion zone by the qualified biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with California Department of Fish and Wildlife. ▪ The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active.					
CULTURAL RESOURCES					
Mitigation Measure CULT-1: If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing (including grading, demolition and/or construction) activities: ▪ All work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5. ▪ If any find is determined to be significant, representatives from the City of Cupertino Building Department and the archaeologist shall meet to determine the appropriate avoidance measures or other	Applicant	During construction	Consulting archeologist and City of Cupertino Public Works Department	Plan Review and Approval	As needed if resources are unearthed

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
appropriate mitigation. ▪ All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. ▪ In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations. ▪ If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be implemented. ▪ Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.					
Mitigation Measure CULT-2: The construction contractor shall incorporate the following in all grading, demolition, and construction plans: ▪ In the event that fossils or fossil-bearing deposits are discovered during grading, demolition, or building, excavations within 50 feet of the find shall be temporarily halted or diverted. ▪ The contractor shall notify the City of Cupertino Building Department and a City-approved qualified paleontologist to examine the discovery. ▪ The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. ▪ The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. ▪ If the project applicant determines that avoidance is not feasible, the	Applicant	During construction	Consulting paleontologist and City of Cupertino Public Works Department	Plan Review and Approval	As needed if resources are unearthed

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The excavation plan shall be submitted to the City for review and approval prior to implementation.					
TRIBAL CULTURAL RESOURCES					
Mitigation Measure TCR-1: Implement Mitigation Measure CULT-1.	Applicant	During construction	Consulting archeologist and City of Cupertino Public Works Department	Plan Review and Approval	As needed if resources are unearthed
NOISE					
Mitigation Measure NOISE-1: The following shall be incorporated in all demolition, grading, and construction plans, as required by the CMC, construction activities shall take place only during daytime hours of 7:00 a.m. and 8:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends. In addition, the following best management practices shall be observed: ▪ At least 90 days prior to the start of construction activities, all offsite businesses and residents within 300 feet of the project site will be notified of the planned construction activities. The notification will include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification should include the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. ▪ The project applicant and contractors will prepare a Construction Noise Control Plan prior to issuance of any grading, demolition, and/or building permits. The details of the Construction Noise Control Plan, including those details listed herein, will be included as part of the permit application drawing set and as part of the construction drawing set. ▪ At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the	Applicant	During construction	City of Cupertino Public Works and Building Departments	Plan Review and Approval	During scheduled construction site inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
public, which includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she will investigate, take appropriate corrective action, and report the action to the City. ▪ During the entire active construction period, equipment and trucks used for project construction will utilize the best available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. ▪ Include noise control requirements for equipment and tools, including concrete saws, to the maximum extent feasible. Such requirements could include, but are not limited to, erecting temporary plywood noise barriers between areas where concrete saws will be used and nearby sensitive receptors; performing work in a manner that minimizes noise; and undertaking the noisiest activities during times of least disturbance to nearby sensitive receptors. ▪ During the entire active construction period, stationary noise sources will be located as far from sensitive receptors as possible, and they will be muffled and enclosed within temporary sheds, or insulation barriers or other measures will be incorporated to the extent feasible. ▪ During the entire active construction period, noisy operations will be conducted simultaneously to the degree feasible in order to reduce the time periods of these operations. ▪ Select haul routes that avoid the greatest amount of sensitive use areas and submit to the City of Cupertino Public Works Department for approval prior to the start of the construction phase. ▪ Signs will be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment will be turned off if not in use for more than 5 minutes.					

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ During the entire active construction period and to the extent feasible, the use of noise producing signals, including horns, whistles, alarms, and bells will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.					
UTILITIES AND SERVICE SYSTEMS					
Mitigation Measure UTIL-1: No building permits shall be issued by the City for the proposed Cupertino Village Hotel Project that would result in exceeding the permitted peak wet weather flow capacity of 13.8 mgd through the Santa Clara sanitary sewer system. The project applicant may demonstrate, to the satisfaction of the City of Cupertino and Cupertino Sanitary District (CSD), that the proposed hotel would not exceed the peak wet weather flow capacity of the Santa Clara sanitary sewer system by implementing one or more of the following methods: 1. Reduce inflow and infiltration in the CSD system to reduce peak wet weather flows; or 2. Increase on-site water reuse, such as increased grey water use, or reduce water consumption of the fixtures used within the proposed project, or other methods that are measurable and reduce sewer generation rates to acceptable levels, to the satisfaction of the CSD. The proposed project's estimated wastewater generation shall be calculated using the generation rates used by the *San Jose-Santa Clara Water Pollution Control Plant Specific Use Code & Sewer Coefficient* table in the May 2007, *City of Santa Clara Sanitary Sewer Capacity Assessment*,[106] unless alternative (i.e., lower) generation rates achieved by the proposed project are substantiated by the project applicant based on evidence to the satisfaction of the CSD.	Applicant	Prior to construction	City of Cupertino Public Works and Building Departments	Plan Review and Approval	During scheduled construction site inspections

[106] Mark Thomas and Associates. Email communication with Cupertino Public Works. July 19, 2018.

6. Organizations and Persons Consulted

This Initial Study was prepared by the following consultants and individuals:

LEAD AGENCY

CITY OF CUPERTINO

Aarti Shrivastava, Community Development Director/Assistant City Manager
Benjamin Fu, Assistant Community Development Director
Piu Ghosh, Principal Planner
Erick Serrano, Associate Planner

REPORT PREPARERS

LEAD EIR CONSULTANT

PlaceWorks

Terri McCracken, Associate Principal, Principal-in-Charge
Jessica Setiawan, Associate, Project Manager
Alexis Mena, Associate
Nicole Vermilion, Associate Principal, Air Quality and Greenhouse Gas
Steve Bush, Senior Engineer
John Vang, Senior Associate, Air Quality and Greenhouse Gas
Josh Carman, Senior Associate, Noise Specialist
Jacqueline Protsman, Project Planner
Torina Wilson, Planner
Grant Reddy, Graphics Specialist

TRANSPORTATION CONSULTANT

Hexagon Transportation Consultants, Inc.

Brian Jackson, Senior Associate
Lance Knox, Transportation Planner

ORGANIZATIONS AND PERSONS CONSULTED

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APPENDIX A:
AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

1. Air Quality

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The City of San Francisco is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

1.1 REGULATORY FRAMEWORK

1.1.1 Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

Criteria air pollutants are the air pollutants for which AAQS have been developed that are regulated under the CAA. The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 1. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 $\mu g/m^3$	12 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	30-Day Average	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 $\mu g/m^3$	
	Rolling 3-Month Average	*	0.15 $\mu g/m^3$	
Sulfates (SO_4)[5]	24 hours	25 $\mu g/m^3$	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board, 2016, May 4. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

1.1.2 Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made.

1.1.2.1 CRITERIA AIR POLLUTANTS

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little or no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the air basin. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity[1]. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[2] The air basin is designated under the California and National AAQS as being in attainment of CO criteria levels.[3]

- **Reactive Organic Gases (ROGs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, BAAQMD has established a significance threshold for this pollutant.

- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form

[1] US Environmental Protection Agency. 2017, April 7. Six Common Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

[2] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[3] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 is an acute irritant and at equal concentrations more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[4,5] The air basin is designated an attainment area for NO_2 under the National AAQS and California AAQS.[6]

- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[7] The air basin is designated an attainment area for SO_2 under the California and National AAQS.[8]

- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004-inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch).

  Some particulate matter, such as pollen, occurs naturally. Most particulate matter in the air basin is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. An EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms (e.g. irritation of the airways, coughing, or difficulty breathing). Motor vehicles

[4] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[5] US Environmental Protection Agency. 2017, April 7. Six Common Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

[6] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

[7] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[8] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

are currently responsible for about half of particulates in the air basin. Wood burning in fireplaces and stoves is another large source of fine particulates.[9]

Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individual with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms.[10] Diesel particulate matter (DPM) is classified a carcinogen by CARB. The air basin is designated nonattainment under the California AAQS for PM_{10} and nonattainment under both the California and National AAQS for $PM_{2.5}$.[11,12]

- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x,—both by-products of internal combustion engine exhaust—undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[13] The air basin is designated nonattainment of the 1-hour California AAQS and 8-hour California and National AAQS for O_3.[14]

- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

  Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic

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[9] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[10] South Coast Air Quality Management District. 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

[11] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

[12] On January 9, 2013, the EPA issued a final rule to determine that the SFBAAB has attained the 24-hour $PM_{2.5}$ National AAQS. This action suspends federal State Implementation Plan planning requirements for the Bay Area. The SFBAAB will continue to be designated nonattainment for the National 24-hour $PM_{2.5}$ standard until such time as BAAQMD elects to submit a redesignation request and a maintenance plan to EPA and EPA approves the proposed redesignation.

[13] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[14] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm

converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.[15] The air basin is designated in attainment of the California and National AAQS for lead.[16] Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the proposed project.

1.1.2.2 TOXIC AIR CONTAMINANTS

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 U.S. Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e. a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that it identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[17] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

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[15] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[16] California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

[17] California Air Resources Board , 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities.[18] This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

1.1.3 Bay Area Air Quality Management District

BAAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the SFBAAB. BAAQMD is responsible for:

- Adopting and enforcing rules and regulations concerning air pollutant sources.
- Issuing permits for stationary sources of air pollutants.
- Inspecting stationary sources of air pollutants.
- Responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.

[18] California Air Resources Board. 2005, April. Air Quality Handbook: A Community Health Perspective.

- Conducting public education campaigns.
- Air quality management planning.

Air quality conditions in the air basin have improved significantly since the BAAQMD was created in 1955.[19] The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans (OAPs) for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these AQMPs in coordination with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the 2017 Clean Air Plan, which was adopted on April 19, 2017, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

1.1.3.1 BAAQMD BAY AREA CLEAN AIR PLAN

2017 Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area

BAAQMD adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) on April 19, 2017. The 2017 Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. Similar to the Bay Area 2010 Clean Air Plan, the 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California CAA. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following [20]:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6)

[19] Bay Area Air Quality Management District. 2017, May. Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.
[20] Bay Area Air Quality Management District. 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/plans-under-development.

waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

1.1.3.2 BAAQMD'S COMMUNITY AIR RISK EVALUATION PROGRAM (CARE)

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[21]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

1. Western Contra Costa County and the cities of Richmond and San Pablo
2. Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
3. San Jose
4. Eastern side of San Francisco
5. Concord

[21] Bay Area Air Quality Management District. 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013), April.

6. Vallejo

7. Pittsburgh and Antioch

The project site is not within a CARE-program impacted community.

The major contributor to acute and chronic non-cancer health effects in the air basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[22] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[23]

1.1.3.3 REGULATION 7, ODOROUS SUBSTANCES

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

1.1.3.4 OTHER BAAQMD REGULATIONS

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects allowed under the proposed General Plan, including:

- BAAQMD, Regulation 2, Rule 2, New Source Review
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- BAAQMD Regulation 6, Rule 1, General Requirements
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment
- BAAQMD Regulation 8, Rule 3, Architectural Coatings
- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)

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[22] Bay Area Air Quality Management District. 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

[23] Bay Area Air Quality Management District. 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

1.1.4 Santa Clara Valley Transportation Authority

The Santa Clara Valley Transportation Authority (VTA) is the congestion management agency for Santa Clara County. VTA is tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision making and air quality. VTA's latest congestion management program (CMP) is the *2015 Congestion Management Program*. VTA's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, VTA's updated CMP includes multi-modal performance standards and trip reduction and transportation demand management strategies consistent with the goal of reducing regional VMT in accordance with Senate Bill 375 (SB 375). Strategies identified in the 2015 CMP for Santa Clara County, where local jurisdictions are responsible agencies, include:[24]

- **Traffic Level of Service:** Monitor and submit report on the level of service (LOS) on CMP roadway network intersections using CMP software and procedures.
- **Transportation Model and Database:** Certify that member agency models are consistent with the CMP model.
- **Community Form and Impact Analysis:** Prepare a transportation impact analysis (TIA) for projects that generate 100 or more peak hour trips and submit to the CMP according to TIA Guidelines schedule.
- **Community Form and Impact Analysis:** Submit relevant conditions of approval to VTA for projects generating TIAs.
- **Community Form and Impact Analysis:** Prepare and submit land use monitoring data to the CMP on all land use projects approved from July 1 to June 30 of the previous year.
- **Community Form and Impact Analysis:** Submit an annual statement certifying that the member agency has complied with the CMP Land Use Impact Analysis Program.
- **Monitoring and Conformance:** Outline the requirements and procedures established for conducting annual traffic LOS and land use monitoring efforts. Support the Traffic Level of Service and Community Form and Impact Analysis Elements.
- **Capital Improvement Program:** Develop a list of projects intended to maintain or improve the level of service on the designated system and to maintain transit performance standards.
- **Deficiency Plan:** Prepare deficiency plans for facilities that violate CMP traffic LOS standards or that are projected to violate LOS standards using the adopted deficiency plan requirements.
- **Deficiency Plan:** Submit a deficiency plan implementation status report as part of annual monitoring.

[24] Santa Clara Valley Transportation Authority (VTA), 2013. 2013 Congestion Management Program, http://www.vta.org/sfc/servlet.shepherd/version/download/068A0000001Q7pt, October.

ENVIRONMENTAL SETTING

1.1.5 San Francisco Bay Area Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[25]

1.1.5.1 METEOROLOGY

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

1.1.5.2 WIND PATTERNS

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part

[25] This section describing the air basin is from Bay Area Air Quality Management District, 2017, May, Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act Air Quality Guidelines*.

upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

1.1.5.3 TEMPERATURE

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (ºF) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

1.1.5.4 PRECIPITATION

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e. air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, when mixing and ventilation are low and pollutant levels build up.

1.1.5.5 WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

1.1.5.6 INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

1.1.6 Existing Ambient Air Quality

1.1.6.1 ATTAINMENT STATUS OF THE SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the air basin is shown in Table 2. The air basin is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

Table 2 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Unclassified/Attainment[1]
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: California Air Resources Board, 2017, October. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.

[1] In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ National AAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015 (Bay Area Air Quality Management District. 2017, January 5. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status).

1.1.6.2 EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements made by the BAAQMD. The BAAQMD monitoring station closest to the project site is the San Jose – Jackson Street Avenue Monitoring Station. Data from this station is summarized in Table 3. The data show occasional violations of the State and federal O_3 standards, as well as state PM_{10} and federal $PM_{2.5}$ standards. The State and federal CO and NO_2 standards have not been exceeded in the last five years in the vicinity of the project site.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2012	2013	2014	2015	2016
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	0	0	0	0
State 8-hour ≥ 0.07 ppm	0	1	0	2	0
Federal 8-Hour > 0.075 ppm	0	1	0	2	0
Maximum 1-Hour Conc. (ppm)	0.083	0.091	0.089	0.094	0.088
Maximum 8-Hour Conc. (ppm)	0.067	0.078	0.066	0.081	0.061
Carbon Monoxide (CO)					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Maximum 8-Hour Conc. (ppm)	0.73	*	*	*	*
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	44.7	41.9	58.4	49.3	51.1
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m³	0	0	1	1	0
Federal 24-Hour > 150 µg/m³	0	0	0	0	0
Maximum 24-Hour Conc. (µg/m³)	41.5	33.5	54.7	58.0	40.0
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m³	*	*	2	2	0
Maximum 24-Hour Conc. (µg/m³)	27.5	38.9	60.4	49.4	22.6

Source: California Air Resources Board, 2015, Air Pollution Data Monitoring Cards (2011, 2012, 2013, 2014, and 2015), Accessed May 4, 2016, http://www.arb.ca.gov/adam/index.html. Data from Cupertino Monitoring Station for years 2010–2013. Data from the San Jose Jackson Street Monitoring Station for years 2014-2015.

Notes: ppm: parts per million; ppb: parts per billion; µg/m³: or micrograms per cubic meter

* = insufficient data

1.1.6.3 EXISTING EMISSIONS

The project site is currently developed with a 3,500 square foot restaurant and vacant office building. The current site uses generate criteria air pollutants emissions from energy use, transportation, and area sources associated with the operational restaurant.

1.1.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population.

The nearest sensitive receptors are the multi-family residences at the Arioso Apartments to the east of the project site. These residences are approximately 70 feet from the edge of the project site.

1.2 METHODOLOGY

The BAAQMD "CEQA Air Quality Guidelines" were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[26]

1.2.1 Criteria Air Pollutant Emissions

The proposed project qualifies as a project-level project under BAAQMD's criteria. For project-level analyses, BAAQMD has adopted screening criteria and significance criteria that would be applicable to the proposed project. If a project exceeds the screening level, it would be required to conduct a full analysis using BAAQMD's significance criteria.

[26] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association versus BAAQMD, Case No. A135335 and A136212 (Court of Appeal, First District, August 13, 2013*).)

Regional Significance Criteria

BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both construction and operational phases of the project are shown.

Table 4 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.

- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[27]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public

[27] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[28]

1.2.2 Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to the siting of a new source. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District [2015] 62 Cal.4th 369 [Case No. S213478]*). CEQA does not require an environmental evaluation to analyze the environmental effects of attracting development and people to an area. However, the environmental evaluation must analyze the impacts of environmental hazards on future users when the proposed project exacerbates an existing environmental hazard or condition or if there is an exception to this exemption identified in the Public Resources Code. Schools, residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.[29,30]

The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[31] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[32]

The project threshold identified below is applied to the proposed project's construction phase emissions:

[28] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.
[29] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[30] Bay Area Air Quality Management District. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards.
[31] Bay Area Air Quality Management District. 2010. Screening Tables for Air Toxics Evaluations during Construction.
[32] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

Community Risk and Hazards – Project

Project-level construction emissions of TACs or $PM_{2.5}$ from the proposed project to individual sensitive receptors within 1,000 feet of the project site that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant, cumulatively considerable contribution.[33]

Community Risk and Hazards – Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[34]

Current BAAQMD guidance recommends the determination of cancer risks using the Office of Environmental Health Hazard Assessment's (OEHHA) methodology, which was originally adopted in 2003.[35,36] In February 2015, OEHHA adopted new health risk assessment guidance which includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rates.[37] However, BAAQMD has not formally adopted the new OEHHA methodology into their CEQA guidance. To be conservative, the cancer risks associated with project implementation and significance conclusions were determined using the new 2015 OEHHA guidance for risk assessments.

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[33] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

[34] Ibid.

[35] Bay Area Air Quality Management District. 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.

[36] Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

[37] Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

2. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[38,39,40] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global warming potential (GWP) gases.
    - *Chlorofluorocarbons (CFCs)* are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

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[38] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

[39] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop of changing radiative forcing rather than a primary cause of change.

[40] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities. However, state and national GHG inventories do not include black carbon yet due to ongoing work related to resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced, along with HFCs, as alternatives to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas, soluble in alcohol and ether and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs. [41,42]

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high global warming potential (GWP) gases. Table 5 lists the GHG and their relative GWP compared to CO_2. The GWP is used to convert GHGs to CO_2-equivalent (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Second Assessment Report, GWP values for CH_4 are such that a project generating 10 metric tons (MT) of CH_4 would be equivalent to 210 MT of CO_2.

[41] United States Environmental Protection Agency. 2015. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

[42] Intergovernmental Panel on Climate Change. 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

Table 5 GHG Emissions and their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Source: Intergovernmental Panel on Climate Change, 1996, Second Assessment Report: Climate Change 1996, New York: Cambridge University Press; and Intergovernmental Panel on Climate Change, 2007, Fourth Assessment Report: Climate Change 2001, New York: Cambridge University Press.
Notes: The IPCC has published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in the Second Assessment Report are still used by SCAQMD to maintain consistency in GHG emissions modeling. In addition, the 2008 Scoping Plan was based on the GWP values in the Second Assessment Report.

1 Based on 100-year time horizon of the GWP of the air pollutant relative to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2.1 CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

California is 20th largest GHG emitter in the world and the second largest emitter of GHG in the United States, only surpassed by Texas.[43] However, California also has over 12 million more people than the State of Texas. Because of more stringent air emission regulations, in 2015, California ranked third lowest in energy-related carbon emissions per capita.[44]

In 2016, the statewide GHG emissions inventory was updated for 2000 to 2014 emissions using the GWPs in IPCC's Fourth Assessment Report (AR4).[45] Based on these GWPs, California produced 442 $MMTCO_2e$

[43] California Air Resources Board. 2014, March. California Greenhouse Gas Inventory for 2000-2012 - by Category as Defined in the 2008 Scoping Plan. https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2012/ghg_inventory_scopingplan_00-12_2014-03-24.pdf.

[44] US Energy Information Administration (USEIA). 2018, January 22. Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2015. https://www.eia.gov/environment/emissions/state/analysis/..

[45] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

GHG emissions in 2014. California's transportation sector remains the single largest generator of GHG emissions, producing 36.1 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent and electric power generation made up 20.0 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (8.7 percent), agriculture (8.2 percent), high global warming potential GHGs (3.9 percent), and recycling and waste (2.0 percent).[46]

2.2 HUMAN INFLUENCE ON CLIMATE CHANGE

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that are attributable to human activities. The amount of CO_2 in the Earth's atmosphere has increased by more than 35 percent since preindustrial times, and the concentration of CO_2 in the atmosphere has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation.[47] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone.[48] Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[49] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[50]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historic trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas;
- Warmer and more frequent hot days and nights over most land areas;
- An increase in frequency of warm spells/heat waves over most land areas;
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas;
- Areas affected by drought increases;

[46] California Air Resources Board . 2017, June. 2017 Edition California Greenhouse Gas Inventory. 2017 edition. http://www.arb.ca.gov/cc/inventory/data/data.htm.

[47] Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report: Climate Change 2007, New York: Cambridge University Press.

[48] At the end of the last ice age, the concentration of CO_2 increased by around 100 ppm (parts per million) over about 8,000 years, or approximately 1.25 ppm per century. Since the start of the industrial revolution, the rate of increase has accelerated markedly. The rate of CO_2 accumulation currently stands at around 150 ppm/century—more than 200 times faster than the background rate for the past 15,000 years.

[49] California Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature, March.

[50] Intergovernmental Panel on Climate Change. 2007. *Fourth Assessment Report: Climate Change 2007,* New York: Cambridge University Press.

- Intense tropical cyclone activity increases;
- Increased incidence of extreme high sea level (excluding tsunamis).

2.3 POTENTIAL CLIMATE CHANGE IMPACTS FOR CALIFORNIA

Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1–8.6°F, depending on emissions levels.[51]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation falling as snow, 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in the springs, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[52] According to the California Climate Action Team, even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include public health impacts, water resources impacts, agricultural impacts, coastal sea level impacts, forest and biological resource impacts, and energy impacts.

[51] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July

[52] California Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. March.

Table 6 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission, 2006, Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, California Climate Change Center, CEC-500-2006-077; California Energy Commission, 2008, The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California, CEC-500-2008-0077. California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.

Specific climate change impacts that could affect the project include:

- ***Water Resources Impacts.*** By late-century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the State can be expected to be drier from the warming effects alone as the spring snowpack will melt sooner, and the moisture contained in soils will evaporate during long dry summer months.[53]
- ***Wildfire Risks***. Earlier snowmelt, higher temperatures and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will

[53] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.

continue to be the biggest factor in ignition risk. The number of large fires statewide are estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[54]

- ***Health Impacts.*** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and heat waves occurring simultaneously in several regions throughout the State. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[55]

- ***Increase Energy Demand.*** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the State will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process from higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[56]

2.1 REGULATORY FRAMEWORK

2.1.1 Federal Laws

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[57]

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project because they constitute the majority of GHG emissions from the onsite land uses, and per BAAQMD guidance are the GHG emissions that should be evaluated as part of a GHG emissions inventory.

[54] Ibid.
[55] Ibid.
[56] Ibid.
[57] United States Environmental Protection Agency. 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment, Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, December, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

2.1.1.1 US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MT) or more of CO_2 per year are required to submit an annual report.

2.1.1.2 UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2010/2012)

The current Corporate Average Fuel Economy (CAFE) standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon [mpg] by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be considered to be in compliance with State requirements. The federal government issued new standards in 2012 for model years 2017–2025, which will require a fleet average of 54.5 mpg in 2025.

2.1.1.3 EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act (CAA), the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to President Obama's 2013 Climate Action Plan, the EPA was directed to also develop regulations for existing stationary sources. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

2.1.2 State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and Senate Bill 375.

2.1.2.1 EXECUTIVE ORDER S-03-05

Executive Order S-03-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

2.1.2.2 ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

2.1.2.3 CARB 2008 SCOPING PLAN

The final Scoping Plan was adopted by CARB on December 11, 2008. The *2008 Scoping Plan* identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state.[58] In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

2.1.2.4 FIRST UPDATE TO THE SCOPING PLAN

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted at the May 22, 2014, board hearing, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$.[59]

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[60] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.[61]

2.1.2.5 EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

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[58] California Air Resources Board. 2008, October. Climate Change Proposed Scoping Plan, a Framework for Change.

[59] California Air Resources Board. 2014, March 24. California Greenhouse Gas Inventory for 2000–2012: By Category as Defined by the Scoping Plan, http://www.arb.ca.gov/cc/inventory/data/data.htm.

[60] Ibid.

[61] Ibid.

2.1.2.6 SENATE BILL 32 AND ASSEMBLY BILL 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the *2017 Climate Change Scoping Plan Update*. The *2017 Climate Change Scoping Plan Update* includes the regulations and programs to achieve the 2030 target, including strategies consistent with AB 197 requirements. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[62]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency and utilizes NZE technology and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.

[62] California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and the state's sustainable development objectives, and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions in the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.[63]

The Scoping Plan scenario is set against what is called the business-as-usual yardstick—that is, what GHG emissions would look like if the state did nothing beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 7, *2017 Climate Change Scoping Plan Emissions Reductions Gap*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. As shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 7 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	260
Gap to 2030 Target with Known Commitments	60

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

[63] Ibid.

Table 8, *2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target*, provides estimated GHG emissions by sector compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 8 2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	431	260	-40%

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

2.1.2.7 SENATE BILL 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter (PM) produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfill. In April 2016, CARB adopted the *Proposed Short-Lived Climate Pollutant Strategy*, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[64] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[64] California Air Resources Board. 2017, March. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf.

2.1.2.8 SENATE BILL 375/SUSTAINABLE COMMUNITIES STRATEGY

SB 375, the Sustainable Communities and Climate Protection Act, was adopted in 2005 to connect the Scoping Plan's GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (MPO). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[65]

2017 Update to the SB 375 Targets

SB 375 requires CARB to periodically update the targets, no later than every 8 years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the draft 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. As proposed, CARB staff's proposed targets would result in an additional reduction of over 10 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent).[66] The updated targets and methodology will take effect on January 1, 2018, and SCS adopted in 2018 and later would be subject to these new targets.

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. Plan Bay Area 2040 is a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.

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[65] California Air Resources Board. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.

[66] California Air Resources Board. 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. Per the Final Plan Bay Area 2040, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the adopted Plan Bay Area 2013, its overall share would be reduced to 77 percent and 55 percent.[67] However, Plan Bay Area 2040 remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.[68] The proposed project site is not within a PPA.[69]

2.1.2.9 ASSEMBLY BILL 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles.[70] In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.[71]

2.1.2.10 EXECUTIVE ORDER S-1-07

On January 18, 2007, the State set a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.

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[67] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[68] Ibid.

[69] Associated Bay Area Governments (ABAG). July 2015. Priority Development Area Showcase, http://gis.abag.ca.gov/website/PDAShowcase/.

[70] See also the discussion on the update to the CAFE standards under federal laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

[71] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

2.1.2.11 EXECUTIVE ORDER B-16-2012

On March 23, 2012, the State identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g. electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's State vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

2.1.2.12 SENATE BILLS 1078 AND 107 AND EXECUTIVE ORDER S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the State's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

2.1.2.13 SENATE BILL 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

2.1.2.14 CALIFORNIA BUILDING STANDARDS CODE – BUILDING ENERGY EFFICIENCY STANDARDS

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building Energy Efficiency Standards, which went into effect on July 1, 2014. Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Most recently, the CEC adopted the 2016 Building Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards went into effect on January 1, 2017. Under the

2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards while non-residential buildings are 5 percent more energy efficient than the 2013 Standards.[72]

The 2016 standards will not get us to zero net energy (ZNE). However, they do get us very close to the State's goal and make important steps toward changing residential building practices in California.[73]

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements.[74] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.[75]

2.1.2.15 CALIFORNIA GREEN BUILDING STANDARDS CODE – CALGREEN

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, CCR). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[76] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, was last updated in 2016. The CEC adopted the 2019 CALGreen on May 9, 2018. The 2019 CALGreen standards become effective January 1, 2020.

2.1.2.16 2006 APPLIANCE ENERGY EFFICIENCY REGULATIONS

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

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[72] California Energy Commission (CEC). 2015, June 10. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.

[73] California Energy Commission (CEC). 2015. 2016 Building Energy Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

[74] California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html.

[75] California Energy Commission (CEC). 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

[76] The green building standards became mandatory in the 2010 edition of the code.

2.1.2.17 SOLID WASTE REGULATIONS

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11) also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

2.1.2.18 WATER EFFICIENCY REGULATIONS

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

2.1.3 Local Regulations

2.1.3.1 CITY OF CUPERTINO CLIMATE ACTION PLAN

The City of Cupertino published the public draft Climate Action Plan (CAP) in December, 2014 to achieve the GHG reduction target of AB 32 for target year 2020. The CAP serves to support California's statewide climate change efforts through identification of actions that can be taken locally, by residents, businesses, and the City itself, to ensure the State's ambitious reduction goals can be achieved. The strategies outlined in the CAP seek to not only reduce GHG emissions, but also provide energy, water, fuel, and cost savings for the City.[77] The goals established by the City's CAP are the following:

- Goal 1 – Reduce Energy Use: Increase energy efficiency in existing homes and buildings and increase use of renewable energy community-wide.
- Goal 2 – Encourage Alternative Transportation: Support transit, carpooling, walking, and bicycling as viable transportation modes to decrease the number of single-occupancy vehicle trips within the community.
- Goal 3 – Conserve Water: Promote the efficient use and conservation of water in buildings and landscapes.
- Goal 4 – Reduce Solid Waste: Strengthen waste reduction efforts through recycling and organics collection and reduced consumption of materials that otherwise end up in landfills.
- Goal 5 – Expand Green Infrastructure: Enhance the City's existing urban forest on public and private lands.

2.2 ENVIRONMENTAL SETTING

2.2.1 Existing Emissions

The project site is currently developed with surface parking and two structures, one operational restaurant and one vacant office building. Existing site uses generate greenhouse gas emissions from mobile, area, and energy sources.

2.3 METHODOLOGY

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential GHG emissions impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background information.

2.3.1 Greenhouse Gas Emissions

BAAQMD has a tiered approach for assessing GHG emissions impacts of a project. If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.

BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the proposed project. If a project exceeds the Guidelines' GHG screening-level sizes, the project would be required to conduct a full GHG analysis using the following BAAQMD significance criteria:

[77] City of Cupertino, 2015. Climate Action Plan. January, 2015. http://www.cupertino.org/home/showdocument?id=13531

- 1,100 MT of CO_2e per year; or
- 4.6 MT of CO_2e per service population (SP) for year 2020

AB 32 requires the statewide GHG emission be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020.[78] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$and the 2020 California service population (SP) to be 64.3 million. Therefore, the significance threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e$/SP for year 2020.[79]

Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g. organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. Although GHG emissions from waste generation are included in the GHG inventory for the proposed project, the efficiency threshold of 4.6 $MTCO_2e$ per service population for 2020 identified above does not include the waste sector, and it is therefore not considered in the evaluation.

BAAQMD does not have thresholds of significance for construction-related GHG emissions, but requires quantification and disclosure of construction-related GHG emissions.[80] For operational phases, if projects exceed the bright line and per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

Post-2020 GHG Thresholds

For projects that would be implemented beyond year 2020, the efficiency targets have been adjusted based on the GHG reduction targets of Senate Bill 32, which set a goal of 40 percent below 1990 levels by 2030. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update, which includes the regulations and programs to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[81] As shown in Table 9, *2030 GHG Reduction Targets,* using the

[78] California Air Resources Board, 2008. *Climate Change Scoping Plan: A Framework for Change.*
[79] Bay Area Air Quality Management District, 2017, May, California Environmental Quality Act Air Quality Guidelines.
[80] Ibid.
[81] California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

latest land use emissions inventory developed for the 2017 Scoping Plan, the estimated 2030 GHG project-level efficiency target would be 3.1 $MTCO_2e$ per service population per year.

Table 9 2030 GHG Reduction Targets

GHG Sector[1]	Scoping Plan Scenario GHG Emissions $MMTCO_2e$
2017 Scoping Plan End Use Sector 2030 – Land Use Only Sectors	
Residential – residential energy consumption	41.4
Commercial – commercial energy consumption	30.1
Transportation – transportation energy consumption	105.1
Transportation Communications and Utilities – energy that supports public infrastructure like street lighting and waste treatment facilities	5
Solid Waste Non-Energy GHGs	9.1
Total 2017 Scoping Plan Land Use Sector Target	260
2030 Project-Level Efficiency Target	
2030 Population[2]	44,085,600
2030 Employment[3]	19,210,760
2030 Service Population	63,296,360
2030 Efficiency Target	3.1 $MTCO_2e$/SP

Sources:

1 California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf..

2 California Department of Finance. 2016. Report P-2: State and County Population Projections by Race/Ethnicity and Age (5-year groups). http://www.dof.ca.gov/Forecasting/Demographics/projections/documents/P-2_Age5yr_CAProj_2010-2060.xls..

3 California Department of Transportation (Caltrans). 2016. Traffic Census Program. Year 2015 Truck Traffic. http://www.dot.ca.gov/trafficops/census/. Without industrial and agricultural sectors.

APPENDIX B:
HEALTH RISK ASSESSMENT

1. Health Risk Assessment

1.1 CONSTRUCTION HEALTH RISK ASSESSMENT

The proposed project would construct a boutique hotel on a 1.72-acre site in the City of Cupertino. The project site is located at 10765 - 10801 North Wolfe Road in the northeast region of the City. The following provides the background methodology used for the construction health risk assessment for the proposed project.

The latest version of the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on sensitive receptors (BAAQMD, 2017). Project construction is anticipated to take place starting at the beginning of August 2019 and be completed by the end of July 2021 (approximately 522 work days). The nearest sensitive receptors to the project site include the residents at the apartments approximately 80 feet to the west of the project site along Pruneridge Road. The BAAQMD has developed *Screening Tables for Air Toxics Evaluation During Construction* (2017) that evaluate construction-related health risks associated with residential, commercial, and industrial projects. According to the screening tables, the residences are closer than the distance of 100 meters (328 feet) that would screen out potential health risks and therefore could be potentially impacted from the proposed construction activities. As a result, a site-specific construction health risk assessment (HRA) has been prepared for the proposed project. This HRA considers the health impact to off-site sensitive receptors (children at the nearby residences) from construction emissions at the project site, including diesel equipment exhaust (diesel particulate matter or DPM) and particulate matter less than 2.5 microns ($PM_{2.5}$).

It should be noted that these health impacts are based on conservative (i.e., health protective) assumptions. The United States Environmental Protection Agency (USEPA, 2005) and the Office of Environmental Health Hazard Assessment (OEHHA, 2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks may not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of exposure and thus risk.

For residential-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site residential receptors (both children and adults) stood outdoors and are subject to DPM at their residence for 8 hours per day, and approximately 260 construction days per year. In reality, California residents typically will spend on average 2 hours per day outdoors at their residences (USEPA, 2011). This would result in lower exposures to construction related DPM emissions and lower estimated risk values.

- The calculated risk for infants from third trimester to age 2 is multiplied by a factor of 10 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

1.2 METHODOLOGY AND SIGNIFICANCE THRESHOLDS

For this HRA, the BAAQMD significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index (chronic or acute) greater than 1.0
- Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 $\mu g/m^3$

The methodology used in this HRA is consistent with the following BAAQMD and the OEHHA guidance documents:

- BAAQMD, 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
- BAAQMD, 2010. *Screening Tables for Air Toxics Evaluation During Construction*. May 2010.
- BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 3.0. May 2012.
- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February, 2015.

Potential exposures to DPM and $PM_{2.5}$ from proposed project construction were evaluated for off-site sensitive receptors in close proximity to the site. Pollutant concentrations were estimated using an air dispersion model, and excess lifetime cancer risks and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

1.3 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedule and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2016.3.2 (CAPCOA, 2016). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day.

The project was assumed to take place over 24 months (522 work days) from beginning of August 2019 to July 2021. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2019 through 2021). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.23-mile haul route within 1,000 feet of the project site. The CalEEMod construction emissions output and emission rate calculations are provided in Appendix A of the HRA.

1.4 DISPERSION MODELING

To assess the impact of emitted compounds on sensitive receptors near the project, air quality modeling using the AERMOD atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as poly-area sources. The off-site mobile sources were modeled as adjacent line volume sources. The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for the construction emission rates are those described in Section 1.3. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (N.Y. Mineta San Jose International Airport) with the five latest available years (2009 to 2013) of record were used to represent local weather conditions and prevailing winds.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. An emission release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 m was used, per California Air Resources Board (CARB) guidance (2000).

To determine contaminant impacts during construction hours, the model's Season-Hour-Day (HRDOW) scalar option was invoked to predict flagpole-level concentrations (1.5 m for ground-floor receptors and 6.1 m for second-floor receptors) for construction emissions generated between the hours of 7:00 AM and 4:00 PM with a 1-hour lunch break. In addition, a scalar factor was applied to the risk calculations to account for the number of days residents are exposed to construction emissions per year.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions, and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum flagpole-level concentrations at the off-site maximum exposed receptors (MER). The off-site MER are the Hampton Apartments approximately 200 feet to the southeast along North Wolfe Road. The MER location is the receptor location associated with the maximum predicted AERMOD concentrations from the on-site emission source. The calculated on-site emission rates are approximately 2 to 3 orders of magnitude higher than the calculated off-site emission rates (see Appendix A). Therefore, the maximum concentrations associated with the on-site emission sources produce the highest overall ground-level MER concentrations and, consequently, higher calculated health risks.

The air dispersion model output for the emission sources is presented in Appendix B. The model output DPM and $PM_{2.5}$ concentrations from the construction emission sources are provided in Appendix C.

1.5 RISK CHARACTERIZATION

1.5.1 Carcinogenic Chemical Risk

A threshold of ten in a million ($10x10^{-6}$) has been established as a level posing no significant risk for exposures to carcinogens. Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. The cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$) over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the residential receptors, the following dose algorithm was used.

$$\mathrm{Dose}_{\mathrm{AIR,per\ age\ group}} = (\mathrm{C}_{\mathrm{air}} \times \mathrm{EF} \times [\frac{\mathrm{BR}}{\mathrm{BW}}] \times \mathrm{A} \times \mathrm{CF})$$

Where:

$Dose_{AIR}$	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, µg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two week period away from home each year (OEHHA, 2015). The 95^{th} percentile daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASFs), and fraction of time at home (FAH) for the various age groups are provided herein:

Age Groups	BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	2	10	0.85
2-9 age group	861	7	3	0.72
2-16 age group	745	14	3	0.72

16-30 age group	335	14	1	0.73
16-70 age group	290	54	1	0.73

For construction analysis, the exposure duration spans the length of construction (e.g. 522 work days). As the length of construction is equal to 2 years, only the third trimester and 0-2 age bins apply to the construction analysis for the off-site residential receptors.

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \text{FAH} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. The excess lifetime cancer risks during the construction period to the maximally exposed resident were calculated based on the factors provided above. The cancer risks for each age group are summed to estimate the total cancer risk for each toxic chemical species. For purposes of this assessment and as stated, the calculated residential cancer risks associated with construction activities are based on the 3rd trimester and 0-2 year old age groups. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1\text{x}10^6$ (i.e. 1 million).

The calculated results are provided in Appendix C.

1.5.2 Non-Carcinogenic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor level (flagpole) concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by OEHHA were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one, a health hazard is presumed to exist.

The chronic hazard analysis for DPM is provided in Appendix C. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

1.5.3 Criteria Pollutants

The BAAQMD has recently incorporated $PM_{2.5}$ into the District's CEQA significance thresholds due to recent studies that show adverse health impacts from exposure to this pollutant. An incremental increase of greater than 0.3 $\mu g/m^3$ for the annual average $PM_{2.5}$ concentration is considered to be a significant impact.

1.6 CONSTRUCTION HRA RESULTS

The calculated results are provided in Appendix C and the results are summarized in Table 1.

TABLE 1. CONSTRUCTION RISK SUMMARY - UNMITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Receptor – Offsite Residences	24.5	0.06	0.12
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold?	No	No	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
Source: Lakes AERMOD View, 9.5 (2017).

Cancer risk for the maximum exposed receptor (MER) from project-related construction emissions was calculated to be 24.5 in a million, which would not exceed the 10 in a million significance threshold. In accordance with the latest 2015 OEHHA guidance, the calculated total cancer risk conservatively assumes that the risk for the MER consists of a pregnant woman in the third trimester that subsequently gives birth to an infant during the approximately 24-month construction period; therefore, all calculated risk values were multiplied by a factor of 10. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day, 260 construction days per year and exposed to all of the daily construction emissions.

For non-carcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all the off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards are within acceptable limits. The highest $PM_{2.5}$ annual concentration of 0.12 is below the BAAQMD significance threshold of 0.3 micrograms per cubic meter ($\mu g/m^3$).

Because cancer risk and $PM_{2.5}$ annual concentrations for the MER would exceed BAAQMD's significance thresholds due to construction activities associated with the proposed project, the following mitigation measure is proposed:

> **Mitigation Measure AIR-2:** During construction, the construction contractor(s) shall use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) for all equipment of 50 horsepower or more. The construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the City of Cupertino Building Division official or his/her designee. The construction equipment list shall state the makes, models, and

number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations. The construction contractor shall ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board Rule 2449. Prior to issuance of any construction permit, the construction contractor shall ensure that all construction plans submitted to the City of Cupertino Planning Department and/or Building Division clearly show the requirement for Level 3 DPF emissions standards for construction equipment over 50 horsepower.

Mitigation Measure AIR-2 would reduce the project's localized construction emissions, as shown in the following table. The results indicate that, with mitigation, cancer risk and $PM_{2.5}$ impacts would be less than the BAAQMD's significance thresholds for residential-based receptors. Therefore, the project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant* with mitigation.

TABLE 2 CONSTRUCTION RISK SUMMARY – MITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Receptor – Offsite Residences	1.5	0.004	0.01
BAAQMD Threshold	10	1.0	0.3
Exceeds Threshold?	No	No	No

Risks incorporate Mitigation Measure AIR-2, which includes using construction equipment with Level 3 Diesel Particulate Filters and Tier\ 3 engines.

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.

Source: Lakes AERMOD View, 9.5 (2017).

2. References

Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines.*

———. 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards.* Version 3.0. Dated May 2012.

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California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.*

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United States Environmental Protection Agency (USEPA). 2011. *Exposure Factors Handbook 2011 Edition (Final).* EPA/600/R-09/052F, 2011.

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Appendix A. Emission Rate Calculations

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Appendix B. Air Dispersion Model Output

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Appendix C. Construction Risk Calculations

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Construction Emissions - DPM and PM2.5
Input to Risk Tables

On-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 On-site Emissions	Average Daily Emissions (lbs/day)	0.62	0.58
	Average Daily Emissions (lbs/hr)	7.74E-02	7.21E-02
	Emission Rate (g/s)	9.75E-03	9.09E-03
2020 On-site Emissions	Average Daily Emissions (lbs/day)	0.49	0.45
	Average Daily Emissions (lbs/hr)	6.12E-02	5.63E-02
	Emission Rate (g/s)	7.71E-03	7.09E-03
2021 On-site Emissions	Average Daily Emissions (lbs/day)	0.46	0.42
	Average Daily Emissions (lbs/hr)	5.74E-02	5.29E-02
	Emission Rate (g/s)	7.24E-03	6.66E-03

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Off-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.022	0.021
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.65E-04	2.52E-04
	Emission Rate (lbs/hr)	3.32E-05	3.15E-05
	Emission Rate (g/s)	4.18E-06	3.97E-06
2020 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.021	0.019
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.44E-04	2.31E-04
	Emission Rate (lbs/hr)	3.05E-05	2.88E-05
	Emission Rate (g/s)	3.85E-06	3.63E-06
2021 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.013	0.012
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.49E-04	1.38E-04
	Emission Rate (lbs/hr)	1.86E-05	1.73E-05
	Emission Rate (g/s)	2.35E-06	2.18E-06

Note: Emissions evenly distributed over 16 modeled volume sources.

Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4] 8 hours

	Year	Workdays	Risk Scalar [5]
Total construction days per year	2019	109	0.42
	2020	262	1.00
	2021	151	0.58

	Demolition	Site Prep	Grading
Number of Haul Trips	187	37	129
Hauling Length (miles)	10	30	30
Average Hauling Length (miles)	**19.4**		
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**		

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as $PM_{2.5}$ exhaust emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on proportioned haul truck trip distances proportioned to evaluate emissions from the 0.23-mile route within 1,000 of the project site.

[4] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Construction Emissions - DPM and PM2.5
Input to Risk Tables

Mitigated On-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 On-site Emissions	Average Daily Emissions (lbs/day)	0.07	0.06
	Average Daily Emissions (lbs/hr)	8.62E-03	8.00E-03
	Emission Rate (g/s)	1.09E-03	1.01E-03
2020 On-site Emissions	Average Daily Emissions (lbs/day)	0.04	0.04
	Average Daily Emissions (lbs/hr)	5.01E-03	4.61E-03
	Emission Rate (g/s)	6.31E-04	5.81E-04
2021 On-site Emissions	Average Daily Emissions (lbs/day)	0.42	0.39
	Average Daily Emissions (lbs/hr)	5.31E-02	4.88E-02
	Emission Rate (g/s)	6.69E-03	6.15E-03

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Mitigated Off-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.020	0.019
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.37E-04	2.22E-04
	Emission Rate (lbs/hr)	2.96E-05	2.77E-05
	Emission Rate (g/s)	3.73E-06	3.49E-06
2020 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.011	0.011
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.34E-04	1.27E-04
	Emission Rate (lbs/hr)	1.67E-05	1.58E-05
	Emission Rate (g/s)	2.11E-06	2.00E-06
2021 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.012	0.012
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.48E-04	1.38E-04
	Emission Rate (lbs/hr)	1.84E-05	1.73E-05
	Emission Rate (g/s)	2.32E-06	2.18E-06

Note: Emissions evenly distributed over 16 modeled volume sources.

Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4] 8 hours

	Year	Workdays	Risk Scalar [5]
Total construction days per year	2019	109	0.42
	2020	262	1.00
	2021	151	0.58

	Demolition	Site Prep	Grading
Number of Haul Trips	187	37	129
Hauling Length (miles)	10	30	30
Average Hauling Length (miles)	**19.4**		
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**		

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as $PM_{2.5}$ exhaust emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on proportioned haul truck trip distances proportioned to evaluate emissions from the 0.23-mile route within 1,000 of the project site.

[4] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Table C1
Off-site Residential MER Concentrations for Risk Calculations

Contaminant (a)	Source (b)		Model Output [1] ($\mu g/m^3$) (c)	Emission Rates [2] (g/s) (d)	MER Conc. ($\mu g/m^3$) (e)	Total MER Conc. Annual Average ($\mu g/m^3$) (f)
Residential Receptors - Unmitigated						
DPM	2019	On-Site Emissions	12.82	9.75E-03	1.25E-01	1.25E-01
		Truck Route	16.39	4.18E-06	6.85E-05	
	2020	On-Site Emissions	12.82	7.71E-03	9.88E-02	9.88E-02
		Truck Route	16.39	3.85E-06	6.31E-05	
	2021	On-Site Emissions	12.82	7.24E-03	9.27E-02	9.28E-02
		Truck Route	16.39	2.35E-06	3.85E-05	
Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations						
$PM_{2.5}$	2029	On-Site Emissions	12.82	9.09E-03	1.16E-01	1.17E-01
		Truck Route	16.39	3.97E-06	6.51E-05	
	2020	On-Site Emissions	12.82	7.09E-03	9.09E-02	9.10E-02
		Truck Route	16.39	3.63E-06	5.96E-05	
	2021	On-Site Emissions	12.82	6.66E-03	8.54E-02	8.54E-02
		Truck Route	16.39	2.18E-06	3.57E-05	
			Maximum Annual $PM_{2.5}$ Concentration			**0.12**
			BAAQMD Threshold			**0.30**
Residential Receptors - Mitigated Run: Level 3 DPFs for eq. > 50 HP						
DPM	2019	On-Site Emissions	12.82	1.09E-03	1.39E-02	1.40E-02
		Truck Route	16.39	3.73E-06	6.12E-05	
	2020	On-Site Emissions	12.82	6.31E-04	8.09E-03	8.12E-03
		Truck Route	16.39	2.11E-06	3.46E-05	
	2021	On-Site Emissions	12.82	6.69E-03	8.58E-02	8.58E-02
		Truck Route	16.39	2.32E-06	3.81E-05	
Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations						
$PM_{2.5}$	2019	On-Site Emissions	12.82	1.01E-03	1.29E-02	1.30E-02
		Truck Route	16.39	3.49E-06	5.73E-05	
	2020	On-Site Emissions	12.82	5.81E-04	7.44E-03	7.47E-03
		Truck Route	16.39	2.00E-06	3.27E-05	
	2021	On-Site Emissions	12.82	6.15E-03	7.88E-02	7.88E-02
		Truck Route	16.39	2.18E-06	3.57E-05	
			Maximum Annual $PM_{2.5}$ Concentration			**0.01**

Maximum Exposed Receptor (MER) UTM coordinates: 587206.00 E, 4132493.80 N

[1] Model Output at the MER based on unit emission rates for sources (1 g/s).

[2] Emission Rates from Emission Rate Calculations (Appendix A - Construction Emissions).

Table C2
Quantification of Health Risks for Off-site Residents

Source		MER Conc. (µg/m³)	Weight Fraction	Contaminant	URF (µg/m³)⁻¹	CPF (mg/kg/day)⁻¹	Dose (by age bin) 3rd Trimester (mg/kg-day)	Dose (by age bin) 0 < 2 years	Carcinogenic Risks (by age bin) 3rd Trimester per million	Carcinogenic Risks (by age bin) 0 < 2 years	Total Cancer Risk per million	Chronic Hazards [3] Chronic REL (µg/m³)	Chronic Hazards [3] RESP
(a)		(b)	(c)	(d)	(e)	(f)	(g)		(i)		(k)	(l)	(m)
Residential Receptors - Unmitigated													
2019	On & Off-Site	1.25E-01	1.00E+00	DPM	3.0E-04	1.1E+00	4.33E-05	1.31E-04	1.38E+00	2.79E+00	4.2	5.0E+00	2.50E-02
2020	On & Off-Site	9.88E-02	1.00E+00	DPM	3.0E-04	1.1E+00		1.03E-04		1.32E+01	13.2	5.0E+00	1.98E-02
2021	On & Off-Site	9.28E-02	1.00E+00	DPM	3.0E-04	1.1E+00		9.70E-05		7.15E+00	7.2	5.0E+00	1.86E-02
										Total	**24.5**		**0.063**
										BAAQMD Threshold	**10.0**		**1.0**
Residential Receptors - Mitigated Run: Level 3 DPFs for eq. > 50 HP													
2019	On & Off-Site	1.40E-02	1.00E+00	DPM	3.0E-04	1.1E+00	4.84E-06	1.46E-05	1.54E-01	3.12E-01	0.47	5.0E+00	2.80E-03
2020	On & Off-Site	8.12E-03	1.00E+00	DPM	3.0E-04	1.1E+00		8.49E-06		1.08E+00	1.08	5.0E+00	1.62E-03
2021	On & Off-Site	8.58E-02	1.00E+00	DPM	3.0E-04	1.1E+00		8.97E-05		6.62E+00	6.62	5.0E+00	1.72E-02
										Total	**1.5**		**0.004**

Maximum Exposed Receptor (MER) UTM coordinates: 587206.00 E, 4132493.80 N

		3rd Trimester	0 < 2 years
	OEHHA age bin	3rd Trimester	0 < 2 years
	exposure year(s)	2019	2019-2021
Dose Exposure Factors:	exposure frequency (days/year)	350	350
	inhalation rate (L/kg-day) [1]	361	1090
	inhalation absorption factor	1	1
	conversion factor (mg/µg; m³/L)	1.0E-06	1.0E-06
Risk Calculation Factors:	age sensitivity factor	10	10
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	fraction of time at home	0.85	0.85

exposure durations per age bin		exposure durations (year)	
Construction Year	Risk Scalar [2]	3rd Trimester	0 < 2 years
2019	0.42	0.25	0.17
2020	1.00		1.00
2021	0.58		0.58
Total	2.00	0.25	1.75

[1] Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

[2] Risk scalar determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

[3] Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

Results Summary

Village Hotel Health Risk Assessment

Concentration - Source Group: OFFSITE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		16.38829	ug/m^3	587348.45	4132332.80	52.00	1.50	52.00	

Concentration - Source Group: ONSITE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		12.81539	ug/m^3	587358.45	4132382.80	52.00	1.50	52.00	

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.5.0
** Lakes Environmental Software Inc.
** Date: 5/24/2018
** File: C:\Lakes\AERMOD View\Village_Hotel\Village_Hotel.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE Village Hotel Health Risk Assessment
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   URBANOPT 60643
   POLLUTID OTHER
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL Village_Hotel.err
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   587239.219  4132417.134       53.000
```

```
** DESCRSRC Onsite
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 24.38
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 4.15
** SZINIT = 1.93
** Nodes = 3
** 587239.883, 4132407.067, 53.00, 4.15, 11.34
** 587319.572, 4132406.201, 52.00, 4.15, 11.34
** 587313.509, 4132107.364, 53.00, 4.15, 11.34
** ----------------------------------------------------------------------
   LOCATION L0000001     VOLUME   587252.074 4132406.935 52.90
   LOCATION L0000002     VOLUME   587276.457 4132406.670 52.59
   LOCATION L0000003     VOLUME   587300.839 4132406.405 52.05
   LOCATION L0000004     VOLUME   587319.458 4132400.553 52.00
   LOCATION L0000005     VOLUME   587318.963 4132376.174 52.00
   LOCATION L0000006     VOLUME   587318.469 4132351.795 52.00
   LOCATION L0000007     VOLUME   587317.974 4132327.416 52.15
   LOCATION L0000008     VOLUME   587317.479 4132303.037 52.52
   LOCATION L0000009     VOLUME   587316.985 4132278.658 52.54
   LOCATION L0000010     VOLUME   587316.490 4132254.279 52.89
   LOCATION L0000011     VOLUME   587315.995 4132229.900 53.00
   LOCATION L0000012     VOLUME   587315.501 4132205.521 53.00
   LOCATION L0000013     VOLUME   587315.006 4132181.142 53.00
   LOCATION L0000014     VOLUME   587314.511 4132156.763 53.00
   LOCATION L0000015     VOLUME   587314.017 4132132.384 53.00
   LOCATION L0000016     VOLUME   587313.522 4132108.005 53.00
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
   SRCPARAM PAREA1       0.0001947135     4.150         4     1.930
   AREAVERT PAREA1       587239.219 4132417.134 587298.801 4132416.813
   AREAVERT PAREA1       587301.043 4132500.420 587237.297 4132500.100
```

```
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001        0.0625      4.15     11.34      1.93
   SRCPARAM L0000002        0.0625      4.15     11.34      1.93
   SRCPARAM L0000003        0.0625      4.15     11.34      1.93
   SRCPARAM L0000004        0.0625      4.15     11.34      1.93
   SRCPARAM L0000005        0.0625      4.15     11.34      1.93
   SRCPARAM L0000006        0.0625      4.15     11.34      1.93
   SRCPARAM L0000007        0.0625      4.15     11.34      1.93
   SRCPARAM L0000008        0.0625      4.15     11.34      1.93
   SRCPARAM L0000009        0.0625      4.15     11.34      1.93
   SRCPARAM L0000010        0.0625      4.15     11.34      1.93
   SRCPARAM L0000011        0.0625      4.15     11.34      1.93
   SRCPARAM L0000012        0.0625      4.15     11.34      1.93
   SRCPARAM L0000013        0.0625      4.15     11.34      1.93
   SRCPARAM L0000014        0.0625      4.15     11.34      1.93
   SRCPARAM L0000015        0.0625      4.15     11.34      1.93
   SRCPARAM L0000016        0.0625      4.15     11.34      1.93
** ------------------------------------------------------------------------
****************************************
** AERMOD Receptor Pathway
****************************************
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*** AERMOD - VERSION 16216r ***   *** Village Hotel Health Risk Assessment
***   05/24/18
*** AERMET - VERSION 14134 ***   ***
***   14:18:06

PAGE   2
*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.62500E-01	587252.1	4132406.9	52.9	4.15	11.34	1.93	YES	HRDOW
L0000002	0	0.62500E-01	587276.5	4132406.7	52.6	4.15	11.34	1.93	YES	HRDOW
L0000003	0	0.62500E-01	587300.8	4132406.4	52.0	4.15	11.34	1.93	YES	HRDOW
L0000004	0	0.62500E-01	587319.5	4132400.6	52.0	4.15	11.34	1.93	YES	HRDOW
L0000005	0	0.62500E-01	587319.0	4132376.2	52.0	4.15	11.34	1.93	YES	HRDOW
L0000006	0	0.62500E-01	587318.5	4132351.8	52.0	4.15	11.34	1.93	YES	HRDOW
L0000007	0	0.62500E-01	587318.0	4132327.4	52.1	4.15	11.34	1.93	YES	HRDOW
L0000008	0	0.62500E-01	587317.5	4132303.0	52.5	4.15	11.34	1.93	YES	HRDOW
L0000009	0	0.62500E-01	587317.0	4132278.7	52.5	4.15	11.34	1.93	YES	

HRDOW									
L0000010	0	0.62500E-01	587316.5	4132254.3	52.9	4.15	11.34	1.93	YES
HRDOW									
L0000011	0	0.62500E-01	587316.0	4132229.9	53.0	4.15	11.34	1.93	YES
HRDOW									
L0000012	0	0.62500E-01	587315.5	4132205.5	53.0	4.15	11.34	1.93	YES
HRDOW									
L0000013	0	0.62500E-01	587315.0	4132181.1	53.0	4.15	11.34	1.93	YES
HRDOW									
L0000014	0	0.62500E-01	587314.5	4132156.8	53.0	4.15	11.34	1.93	YES
HRDOW									
L0000015	0	0.62500E-01	587314.0	4132132.4	53.0	4.15	11.34	1.93	YES
HRDOW									
L0000016	0	0.62500E-01	587313.5	4132108.0	53.0	4.15	11.34	1.93	YES
HRDOW									

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: OFFSITE ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
587408.45	4132302.80	5.93038	587418.45	4132302.80	5.24775
587428.45	4132302.80	4.66319	587438.45	4132302.80	4.15754
587448.45	4132302.80	3.71696	587458.45	4132302.80	3.34413
587468.45	4132302.80	3.02595	587478.45	4132302.80	2.74611
587488.45	4132302.80	2.49939	587498.45	4132302.80	2.28086
587508.45	4132302.80	2.08610	587518.45	4132302.80	1.91206

587528.45	4132302.80	1.75615	587538.45	4132302.80	1.61616
587348.45	4132312.80	15.91901	587358.45	4132312.80	12.96313
587368.45	4132312.80	10.76877	587378.45	4132312.80	9.10717
587388.45	4132312.80	7.81385	587398.45	4132312.80	6.78052
587408.45	4132312.80	5.93619	587418.45	4132312.80	5.23366
587428.45	4132312.80	4.63292	587438.45	4132312.80	4.11446
587448.45	4132312.80	3.66084	587458.45	4132312.80	3.28269
587468.45	4132312.80	2.96189	587478.45	4132312.80	2.68029
587488.45	4132312.80	2.43213	587498.45	4132312.80	2.21270
587508.45	4132312.80	2.01808	587518.45	4132312.80	1.84498
587528.45	4132312.80	1.69063	587348.45	4132322.80	16.14662
587358.45	4132322.80	13.12660	587368.45	4132322.80	10.88566
587378.45	4132322.80	9.18405	587388.45	4132322.80	7.85485
587398.45	4132322.80	6.78974	587408.45	4132322.80	5.91820
587418.45	4132322.80	5.19329	587428.45	4132322.80	4.57657
587438.45	4132322.80	4.04857	587448.45	4132322.80	3.58910
587458.45	4132322.80	3.20489	587468.45	4132322.80	2.88020
587478.45	4132322.80	2.59684	587488.45	4132322.80	2.34857
587498.45	4132322.80	2.13028	587508.45	4132322.80	

1.93771
587518.45 4132322.80 1.76732 587348.45 4132332.80
16.38829
587358.45 4132332.80 13.29360 587368.45 4132332.80
10.99622
587378.45 4132332.80 9.24398 587388.45 4132332.80
7.86952
587398.45 4132332.80 6.76598 587408.45 4132332.80
5.86355
587418.45 4132332.80 5.11519 587428.45 4132332.80
4.48363
587438.45 4132332.80 3.94850 587448.45 4132332.80
3.48726
587458.45 4132332.80 3.10083 587468.45 4132332.80
2.77545
587478.45 4132332.80 2.49342 587488.45 4132332.80
2.24793
587498.45 4132332.80 2.03340 587508.45 4132332.80
1.84521
587358.45 4132342.80 13.46798 587368.45 4132342.80
11.09292
587378.45 4132342.80 9.27037 587388.45 4132342.80
7.83804
587398.45 4132342.80 6.68748 587408.45 4132342.80
5.75101
587418.45 4132342.80 4.98174 587428.45 4132342.80
4.34131
587438.45 4132342.80 3.80445 587448.45 4132342.80
3.34908
587458.45 4132342.80 2.96767 587468.45 4132342.80
2.64618

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: OFFSITE ***
INCLUDING SOURCE(S):   L0000001   , L0000002   , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   , L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   , L0000016   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
587478.45	4132342.80	2.36960	587488.45	4132342.80	2.13048
587498.45	4132342.80	1.92277	587358.45	4132352.80	13.64185
587368.45	4132352.80	11.14370	587378.45	4132352.80	9.22754
587388.45	4132352.80	7.72719	587398.45	4132352.80	6.52964
587408.45	4132352.80	5.56618	587418.45	4132352.80	4.78630
587428.45	4132352.80	4.14589	587438.45	4132352.80	3.61621

	587448.45	4132352.80	3.17378	587458.45	4132352.80
2.80454	587468.45	4132352.80	2.49277	587478.45	4132352.80
2.22651	587358.45	4132362.80	13.72454	587368.45	4132362.80
11.07539	587378.45	4132362.80	9.05401	587388.45	4132362.80
7.49069	587398.45	4132362.80	6.26395	587408.45	4132362.80
5.29569	587418.45	4132362.80	4.52017	587428.45	4132362.80
3.89430	587438.45	4132362.80	3.38499	587448.45	4132362.80
2.96431	587458.45	4132362.80	2.61336	587468.45	4132362.80
2.31785	587358.45	4132372.80	13.60200	587368.45	4132372.80
10.77702	587378.45	4132372.80	8.67032	587388.45	4132372.80
7.07888	587398.45	4132372.80	5.86398	587408.45	4132372.80
4.92779	587418.45	4132372.80	4.18834	587428.45	4132372.80
3.59608	587438.45	4132372.80	3.11778	587448.45	4132372.80
2.72508	587458.45	4132372.80	2.39932	587358.45	4132382.80
13.01959	587368.45	4132382.80	10.10417	587378.45	4132382.80
8.00185	587388.45	4132382.80	6.46012	587398.45	4132382.80
5.31967	587408.45	4132382.80	4.46107	587418.45	4132382.80
3.79100	587428.45	4132382.80	3.25359	587454.03	4132086.22
2.74296	587464.03	4132086.22	2.56145	587474.03	4132086.22

2.39868					
	587484.03	4132086.22	2.25298	587494.03	4132086.22
2.12585					
	587454.03	4132096.22	2.85674	587464.03	4132096.22
2.66612					
	587474.03	4132096.22	2.49511	587484.03	4132096.22
2.34186					
	587494.03	4132096.22	2.20313	587428.45	4132102.80
3.61840					
	587438.45	4132102.80	3.34077	587448.45	4132102.80
3.09603					
	587458.45	4132102.80	2.87734	587468.45	4132102.80
2.68170					
	587478.45	4132102.80	2.50672	587488.45	4132102.80
2.34924					
	587498.45	4132102.80	2.20669	587508.45	4132102.80
2.07701					
	587518.45	4132102.80	1.95850	587428.45	4132112.80
3.74760					
	587438.45	4132112.80	3.44969	587448.45	4132112.80
3.18848					
	587458.45	4132112.80	2.95699	587468.45	4132112.80
2.75090					
	587478.45	4132112.80	2.56699	587488.45	4132112.80
2.40183					
	587498.45	4132112.80	2.25264	587508.45	4132112.80
2.11717					
	587518.45	4132112.80	1.99360	587528.45	4132112.80
1.88042					
	587418.45	4132122.80	4.21168	587428.45	4132122.80
3.85250					

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE SUMMARY OF MAXIMUM PERIOD (43872 HRS) RESULTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3
**

NETWORK GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
ONSITE	1ST HIGHEST VALUE IS	12.81539 AT (	587358.45, 4132382.80, 52.00, 52.00, 1.50) DC
	2ND HIGHEST VALUE IS	12.68656 AT (	587358.45, 4132382.80, 52.00, 52.00, 6.10) DC
	3RD HIGHEST VALUE IS	11.95395 AT (	587206.00, 4132493.80, 53.00, 53.00, 1.50) DC
	4TH HIGHEST VALUE IS	11.82097 AT (	587206.00, 4132483.80, 53.00, 53.00, 1.50) DC
	5TH HIGHEST VALUE IS	11.67372 AT (	587368.45, 4132382.80, 52.00, 52.00, 1.50) DC
	6TH HIGHEST VALUE IS	11.59335 AT (	587368.45, 4132382.80, 52.00, 52.00, 6.10) DC
	7TH HIGHEST VALUE IS	11.21305 AT (	587206.00, 4132473.80, 53.00, 53.00, 1.50) DC
	8TH HIGHEST VALUE IS	10.87978 AT (	587358.45, 4132372.80, 52.00, 52.00,

```
1.50)  DC
          9TH HIGHEST VALUE IS      10.86429 AT (  587358.45,  4132372.80,    52.00,    52.00,
6.10)  DC
         10TH HIGHEST VALUE IS      10.58982 AT (  587378.45,  4132382.80,    52.00,    52.00,
1.50)  DC

OFFSITE   1ST HIGHEST VALUE IS      16.38829 AT (  587348.45,  4132332.80,    52.00,    52.00,
1.50)  DC
          2ND HIGHEST VALUE IS      16.14662 AT (  587348.45,  4132322.80,    52.00,    52.00,
1.50)  DC
          3RD HIGHEST VALUE IS      15.91901 AT (  587348.45,  4132312.80,    52.00,    52.00,
1.50)  DC
          4TH HIGHEST VALUE IS      15.71947 AT (  587348.45,  4132302.80,    52.00,    52.00,
1.50)  DC
          5TH HIGHEST VALUE IS      15.49790 AT (  587348.45,  4132292.80,    52.00,    52.00,
1.50)  DC
          6TH HIGHEST VALUE IS      15.36931 AT (  587348.45,  4132282.80,    52.00,    52.00,
1.50)  DC
          7TH HIGHEST VALUE IS      15.23188 AT (  587348.45,  4132272.80,    52.06,    52.06,
1.50)  DC
          8TH HIGHEST VALUE IS      15.10298 AT (  587348.45,  4132262.80,    52.22,    52.22,
1.50)  DC
          9TH HIGHEST VALUE IS      14.96357 AT (  587348.45,  4132252.80,    52.39,    52.39,
1.50)  DC
         10TH HIGHEST VALUE IS      14.78057 AT (  587348.45,  4132242.80,    52.49,    52.49,
1.50)  DC

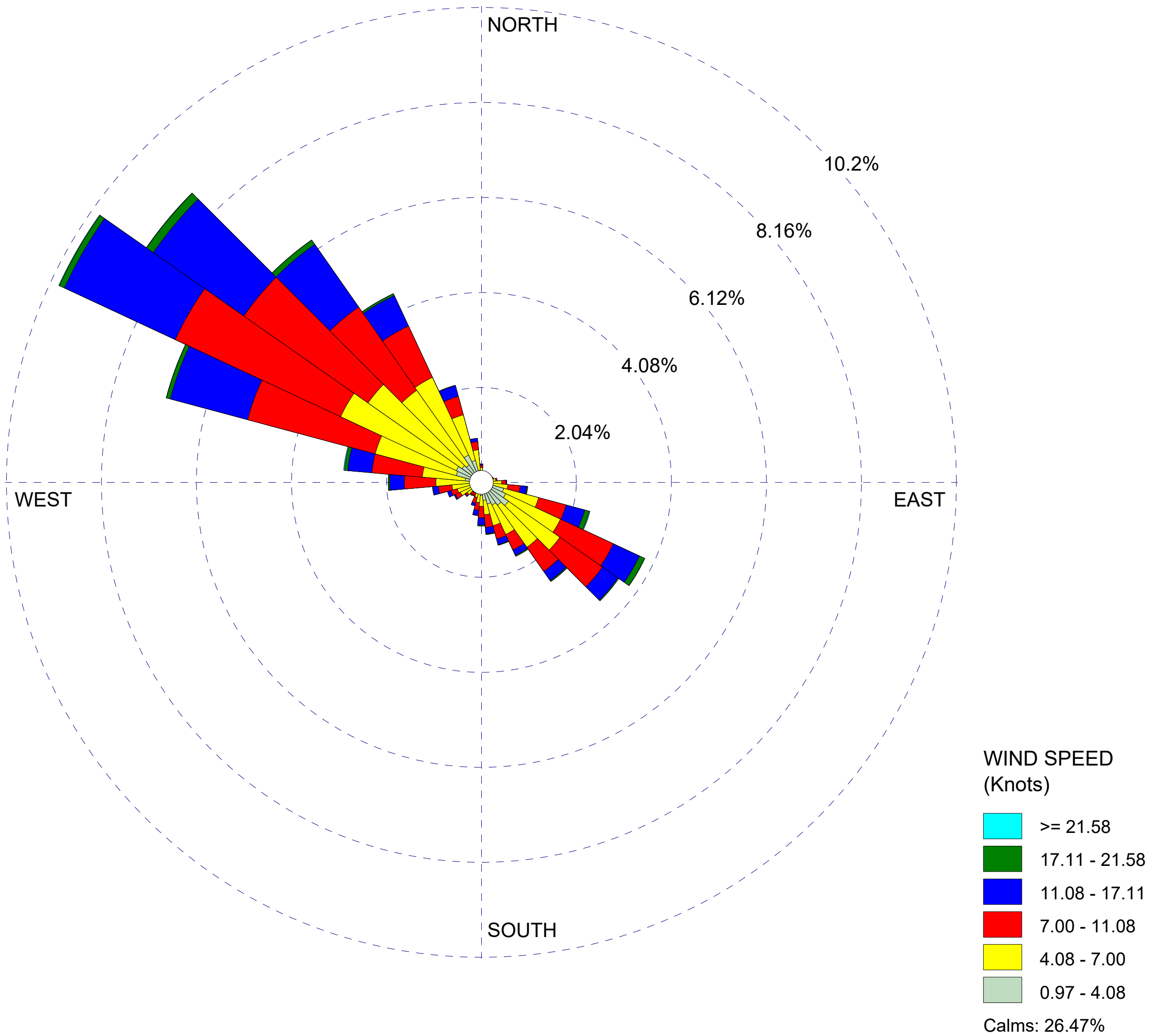

 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

WIND ROSE PLOT:

Wind Rose for San Jose Mineta Airport

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2009 - 00:00 **End Date: 1/2/2014 - 23:59**	MODELER:	
	CALM WINDS: **26.47%**	TOTAL COUNT: **42621 hrs.**	
	AVG. WIND SPEED: **5.71 Knots**	DATE: **5/22/2018**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

APPENDIX C:
NOISE DATA

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies, David A. and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th ed. New York: Spon Press.

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

CONSTRUCTION NOISE MODELING OUTPUT

Bldg

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018
Case Description:

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
1	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	125.0	0.0
Man Lift	No	20		74.7	125.0	0.0
Tractor	No	40	84.0		125.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	72.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	66.7	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.0	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Demo

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018

Case Description: Demo

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	125.0	0.0
Excavator	No	40		80.7	125.0	0.0
Tractor	No	40	84.0		125.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	81.6	74.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	72.8	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.0	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.6	77.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Grading

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018

Case Description: Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	125.0	0.0
Excavator	No	40		80.7	125.0	0.0
Tractor	No	40	84.0		125.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	81.6	74.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	72.8	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.0	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.6	77.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Paving

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018

Case Description: Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	125.0	0.0
Roller	No	20		80.0	125.0	0.0
Tractor	No	40	84.0		125.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	69.3	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	72.0	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.0	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.0	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Ref Levels_25 feet
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018
Case Description:

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
ref 25 feet	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	25.0	0.0
Excavator	No	40		80.7	25.0	0.0
Tractor	No	40	84.0		25.0	0.0
Grader	No	40	85.0		25.0	0.0
Scraper	No	40		83.6	25.0	0.0
Crane	No	16		80.6	25.0	0.0
Man Lift	No	20		74.7	25.0	0.0
Paver	No	50		77.2	25.0	0.0
Roller	No	20		80.0	25.0	0.0
Compressor (air)	No	40		77.7	25.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	95.6	88.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	86.7	82.8	N/A	N/A	N/A	N/A	N/A							

Ref Levels_25 feet

								N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	90.0	86.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	91.0	87.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	89.6	85.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	86.6	78.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	80.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	83.2	80.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	86.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	83.7	79.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	95.6	94.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Site Prep
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/11/2018
Case Description: Site Prep

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		125.0	0.0
Scraper	No	40		83.6	125.0	0.0
Tractor	No	40	84.0		125.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	77.0	73.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	75.6	71.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.0	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.0	77.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TRAFFIC NOISE INCREASE CALCULATIONS

Roadway Segment	AM Peak Hour	PM Peak Hour	ADT	Noise Increase
Wolfe Road - North of Homestead Road				
Existing Conditions	2,306	2,901	**26,000**	
Background Conditions	2,809	3,202	**30,000**	
Existing + Project Conditions	2,652	3,062	**28,500**	**0.4**
Background + Project Conditions	2,833	3,224	**30,500**	
Future Growth No Project Conditions	2,904	3,312	**31,000**	
Future Growth Conditions	2,928	3,334	**31,500**	**0.8**
Cumulative + Project (*Vallco TIA)	2,926	3,124	**30,500**	**0.7**
Wolfe Road - Between Homestead Road & I-280				
Existing Conditions	3,324	4,728	**40,500**	
Background Conditions	3,649	5,854	**47,500**	
Existing + Project Conditions	3,360	4,768	**40,500**	**0.0**
Background + Project Conditions	3,685	5,894	**48,000**	
Future Growth No Project Conditions	3,770	6,026	**49,000**	
Future Growth Conditions	3,806	6,066	**49,500**	**0.9**
Cumulative + Project (*Vallco TIA)	4,369	4,814	**46,000**	**0.6**
Wolfe Road - South of I-280				
Existing Conditions	3,034	2,922	**30,000**	
Background Conditions	3,414	3,322	**33,500**	
Existing + Project Conditions	3,052	2,938	**30,000**	**0.0**
Background + Project Conditions	3,432	3,338	**34,000**	
Future Growth No Project Conditions	3,526	3,428	**35,000**	
Future Growth Conditions	3,544	3,444	**35,000**	**0.7**
Cumulative + Project (*Vallco TIA)	5,624	5,977	**58,000**	**2.9**
Homestead Road - West of Wolfe Road				
Existing Conditions	1,719	2,819	**22,500**	
Background Conditions	1,866	2,940	**24,000**	
Existing + Project Conditions	1,724	2,824	**22,500**	**0.0**
Background + Project Conditions	1,871	2,945	**24,000**	
Future Growth No Project Conditions	1,929	3,043	**25,000**	
Future Growth Conditions	1,934	3,048	**25,000**	**0.5**
Cumulative + Project (*Vallco TIA)	2,568	2,868	**27,000**	**0.8**
Homestead Road - East of Wolfe Road				
Existing Conditions	2,607	2,370	**25,000**	
Background Conditions	2,804	2,574	**27,000**	
Existing + Project Conditions	2,618	2,381	**25,000**	**0.0**
Background + Project Conditions	2,815	2,585	**27,000**	
Future Growth No Project Conditions	2,899	2,660	**28,000**	
Future Growth Conditions	2,910	2,671	**28,000**	**0.5**
Cumulative + Project (*Vallco TIA)	2,913	3,364	**31,500**	**0.2**

APPENDIX D:
TRANSPORTATION IMPACT ANALYSIS

Hexagon Transportation Consultants, Inc.

Cupertino Village Boutique Hotel

Draft Transportation Impact Analysis

Prepared for:

City of Cupertino

August 30, 2018

Hexagon Transportation Consultants, Inc.
Hexagon Office: 4 North Second Street, Suite 400
San Jose, CA 95113
Hexagon Job Number: 18BJ04
Phone: 408.971.6100
Client Name: City of Cupertino

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Executive Summary

This study was conducted for the purpose of satisfying the requirements of the California Environmental Quality Act (CEQA) and identifying the potential transportation impacts related to the proposed boutique hotel project at 10765 N. Wolfe Road in the City of Cupertino, California. Located across from the Apple Campus 2, the project would demolish the existing 3,385 square-foot (s.f.) Duke of Edinburgh Restaurant and Pub and 10,044 s.f. of vacant commercial space and construct a 185-room boutique hotel, which would include a 2,502 s.f. restaurant and 5,568 s.f. of meeting space. The project would also remove the existing 66 surface parking stalls on the site and construct a subterranean parking garage comprised of 248 parking stalls. Access to the project site would be provided via Wolfe Road and Pruneridge Avenue.

The potential impacts of the project were evaluated in accordance with the standards set forth by the Cities of Cupertino, Sunnyvale and Santa Clara, as well as the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP). The study includes an analysis of weekday AM and PM peak hour traffic conditions for 13 signalized intersections and 4 freeway segments in the vicinity of the project site. The study also includes an analysis of site access, on-site circulation, vehicle queuing, and transit, bicycle and pedestrian access.

Based on trip generation rates recommended by the Institute of Transportation Engineers, it is estimated that the proposed project would generate 1,636 net new daily vehicle trips, with 96 net new trips occurring during the AM peak hour and 89 net new trips occurring during the PM peak hour

Project Level of Service Analyses

The results of the intersection level of service analysis show that all but one of the study intersections would continue to operate at an acceptable level of service during both the AM and PM peak hours of traffic under background plus project conditions (see Table ES-1). The CMP intersection of Lawrence Expressway and Homestead Road would operate at an unacceptable LOS F during the PM peak hour under background plus project conditions. However, the project would not cause the intersection's critical-movement delay to increase by 4 or more seconds and the V/C to increase by 0.01 or more compared to background conditions. Therefore, the intersection impact is considered less than significant. Therefore, none of the study intersections would be significantly impacted by the project.

The results of the freeway segment analysis show that the project would not result in a significant increase in traffic volume (one percent or more of freeway capacity) on any of the study freeway segments currently operating at LOS F, and none of the freeway segments currently operating at LOS E or better would worsen to LOS F as a result of the project (see Table ES-2). Thus, based on CMP freeway impact criteria, none of the freeway segments would be significantly impacted by the project.

Table ES-1
Intersection Level of Service Summary

				Existing						Background						Future Growth Conditions	
				No Project		with Project				No Project		with Project					
#	Intersection	Peak Hour	Count Date	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C	Avg. Delay (sec)	LOS
1	Wolfe Road and El Camino Real *	AM	3/28/18	53.6	D-	53.7	D-	0.0	0.001	55.3	E+	55.4	E+	0.0	0.001	57.3	E+
		PM	11/10/16	43.0	D	43.1	D	0.2	0.003	44.1	D	44.2	D	0.2	0.003	45.9	D
2	Wolfe Road and Fremont Avenue	AM	3/28/18	51.9	D-	52.1	D-	0.3	0.007	53.2	D-	53.3	D-	0.4	0.007	-	-
		PM	3/28/18	45.6	D	45.7	D	0.4	0.006	47.5	D	47.6	D	0.4	0.006	-	-
3	Wolfe Road and Marion Way	AM	3/28/18	10.6	B+	10.6	B+	0.0	0.003	10.5	B+	10.4	B+	0.0	0.003	-	-
		PM	3/28/18	15.9	B	15.9	B	0.0	0.004	15.9	B	15.9	B	0.0	0.004	-	-
4	Wolfe Road and Inverness Way	AM	3/28/18	12.5	B	12.5	B	0.0	0.003	12.5	B	12.5	B	0.0	0.003	-	-
		PM	3/28/18	15.2	B	15.2	B	0.0	0.003	15.3	B	15.3	B	0.0	0.003	-	-
5	De Anza Boulevard and Homestead Road *	AM	3/28/18	35.7	D+	35.7	D+	0.0	0.001	36.2	D+	36.3	D+	0.0	0.001	39.7	D
		PM	10/12/16	36.4	D+	36.5	D+	0.1	0.001	37.3	D+	37.3	D+	0.1	0.001	44.9	D
6	Wolfe Road and Homestead Road	AM	3/28/18	38.5	D+	38.6	D+	0.0	0.003	40.7	D	40.8	D	0.3	0.007	-	-
		PM	3/28/18	43.2	D	43.3	D	0.3	0.005	46.2	D	46.4	D	0.4	0.005	-	-
7	Lawrence Expressway and Homestead Road *	AM	3/28/18	69.7	E	69.7	E	0.2	0.002	72.3	E	72.4	E	0.2	0.002	**81.3**	**F**
		PM	10/6/16	74.8	E	74.9	E	0.1	0.001	**82.1**	**F**	**82.3**	**F**	**0.5**	**0.002**	**100.3**	**F**
8	Wolfe Road and Apple Park Way	AM	3/28/18	14.1	B	14.0	B	0.0	0.003	19.4	B-	19.4	B-	0.0	0.000	-	-
		PM	3/28/18	21.3	C+	21.3	C+	0.0	0.003	27.8	C	27.8	C	0.0	0.003	-	-
9	Wolfe Road and Pruneridge Avenue	AM	3/28/18	21.2	C+	22.8	C+	1.4	0.014	26.6	C	27.9	C	1.2	0.014	-	-
		PM	3/28/18	18.3	B-	20.6	C+	2.7	0.026	22.4	C+	24.5	C	2.7	0.026	-	-
10	Wolfe Road and I-280 Northbound Ramps *	AM	3/28/18	8.3	A	8.3	A	0.1	0.009	9.9	A	10.1	B+	0.3	0.009	12.0	B+
		PM	10/12/16	7.0	A	6.9	A	-0.1	0.007	6.9	A	6.9	A	0.0	0.007	7.8	A
11	Wolfe Road and I-280 Southbound Ramps *	AM	3/28/18	13.9	B	14.0	B	0.1	0.006	18.4	B-	18.8	B-	0.5	0.006	26.7	C
		PM	10/12/16	7.5	A	7.5	A	0.0	0.002	8.3	A	8.3	A	0.0	0.002	8.6	A
12	Wolfe Road and Vallco Parkway	AM	3/28/18	22.1	C+	22.0	C+	0.0	0.002	24.4	C	24.4	C	0.0	0.002	-	-
		PM	3/28/18	20.1	C+	20.1	C+	0.0	0.002	21.7	C+	21.7	C+	0.0	0.002	-	-
13	Wolfe Road and Stevens Creek Boulevard *	AM	3/28/18	39.9	D	40.0	D	0.2	0.005	40.8	D	40.9	D	0.2	0.005	42.6	D
		PM	10/12/16	39.9	D	40.0	D	0.1	0.002	40.7	D	40.7	D	0.1	0.002	43.4	D

Note:
* Denotes the CMP designated Intersection
Bold indicates a substandard level of service.

Table ES-2
Freeway Level of Service Summary

						Existing Plus Project Trips				Project Trips					
						Mixed-Flow Lanes		HOV Lane			Mixed-Flow		HOV Lane		
					Peak	Capacity		Capacity		Total		%		%	
Freeway	Segment			Direction	Hour	(vph)	LOS	(vph)	LOS	Volume	Volume	Capacity	Volume	Capacity	Impact?
I-280	SR 85	to	De Anza Blvd	EB	AM	6900	C	1800	B	8	6	0.1%	2	0.1%	NO
					PM	**6900**	**F**	**1800**	**F**	5	4	0.1%	1	0.1%	NO
I-280	De Anza Blvd	to	Wolfe Rd	EB	AM	6900	C	1800	C	8	6	0.1%	2	0.1%	NO
					PM	**6900**	**F**	1800	D	5	4	0.1%	1	0.1%	NO
I-280	Wolfe Rd	to	Lawrence Expwy	EB	AM	6900	C	1800	B	10	8	0.1%	2	0.1%	NO
					PM	**6900**	**F**	1800	E	13	10	0.2%	3	0.2%	NO
I-280	Lawrence Expwy	to	Saratoga Ave	EB	AM	6900	D	1800	B	10	8	0.1%	2	0.1%	NO
					PM	6900	C	1800	B	13	10	0.2%	3	0.2%	NO
I-280	Saratoga Ave	to	Lawrence Expwy	WB	AM	**6900**	**F**	**1800**	**F**	14	11	0.2%	3	0.2%	NO
					PM	6900	C	1800	B	9	7	0.1%	2	0.1%	NO
I-280	Lawrence Expwy	to	Wolfe Rd	WB	AM	**6900**	**F**	**1800**	**F**	14	11	0.2%	3	0.2%	NO
					PM	6900	C	1800	B	9	7	0.1%	2	0.1%	NO
I-280	Wolfe Rd	to	De Anza Blvd	WB	AM	**6900**	**F**	1800	E	6	5	0.1%	1	0.1%	NO
					PM	6900	C	1800	A	8	6	0.1%	2	0.1%	NO
I-280	De Anza Blvd	to	SR 85	WB	AM	**6900**	**F**	1800	E	6	5	0.1%	1	0.1%	NO
					PM	6900	C	1800	A	8	6	0.1%	2	0.1%	NO

Notes:
[1] Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2016.
Bold indicates a substandard level of service.

Other Transportation Issues

No significant traffic operational issues are expected to occur as a result of the project. The project would include a comprehensive Transportation Demand Management (TDM) program that would promote sustainable modes of transportation and reduce the vehicular trips and parking demand generated by the project. The project would not have an adverse effect on the existing transit services, pedestrian facilities or bicycle facilities in the study area, nor would it conflict with any adopted plans or policies for new pedestrian or bicycle facilities.

Hexagon has the following recommendations related to site access, on-site circulation and parking:

- Provide a parking garage ramp with a larger radius to adequately serve inbound and outbound vehicles.
- Update the site plan to show the on-site trash area.
- Update the site plan to show at least 10 Class II bicycle parking spaces prior to the final design, to ensure the project conforms to the City's bicycle parking requirements.

1. Introduction

This report presents the results of the Transportation Impact Analysis (TIA) conducted for a proposed boutique hotel project at the Cupertino Village at 10765 N. Wolfe Road in the City of Cupertino, California (see Figure 1). Located across from the Apple Campus 2, the project would demolish the existing 3,385 square-foot (s.f.) Duke of Edinburgh Restaurant and Pub and 10,044 s.f. of vacant commercial space and construct a 185-room boutique hotel, which would include a 2,502 s.f. restaurant and 5,568 s.f. of meeting space (see Figure 2). The project would also remove the existing 66 surface parking stalls on the site and construct a subterranean parking garage comprised of 248 parking stalls. Access to the project site would be provided via Wolfe Road and Pruneridge Avenue.

Scope of Study

This study was conducted for the purpose of satisfying the requirements of the California Environmental Quality Act (CEQA) and identifying the potential transportation related impacts as a result of the proposed development. The potential impacts of the project were evaluated in accordance with the standards set forth by the Cities of Cupertino and Sunnyvale, as well as the Santa Clara Valley Transportation Authority (VTA). The VTA administers the Santa Clara County Congestion Management Program (CMP). For projects that would generate fewer than 100 net new peak hour vehicle trips, a CMP analysis is not required. Although the proposed project is expected to generate fewer than 100 net peak hour trips, a CMP analysis including a freeway analysis and future growth analysis was prepared because the calculated number of net new peak hour trips nearly meets the 100-trip threshold. The traffic study includes an analysis of AM and PM peak hour traffic conditions for 13 signalized intersections and 4 freeway segments near the project site. The study also includes an analysis of site access, on-site circulation, vehicle queuing, and transit, bicycle and pedestrian access.

Study Intersections

1. Wolfe Road and El Camino Real (CMP) (Sunnyvale)
2. Wolfe Road and Fremont Avenue (Sunnyvale)
3. Wolfe Road and Marion Way (Sunnyvale)
4. Wolfe Road and Inverness Avenue (Sunnyvale)
5. De Anza Boulevard and Homestead Road (CMP) (Cupertino)
6. Wolfe Road and Homestead Road (Cupertino)
7. Lawrence Expressway and Homestead Road (CMP) (Santa Clara)
8. Wolfe Road and Apple Park Way (Cupertino)
9. Wolfe Road and Pruneridge Avenue (Cupertino)
10. Wolfe Road and I-280 Northbound Ramps (CMP) (Cupertino)
11. Wolfe Road and I-280 Southbound Ramps (CMP) (Cupertino)
12. Wolfe Road and Vallco Parkway (Cupertino)
13. Wolfe Road and Stevens Creek Boulevard (CMP) (Cupertino)

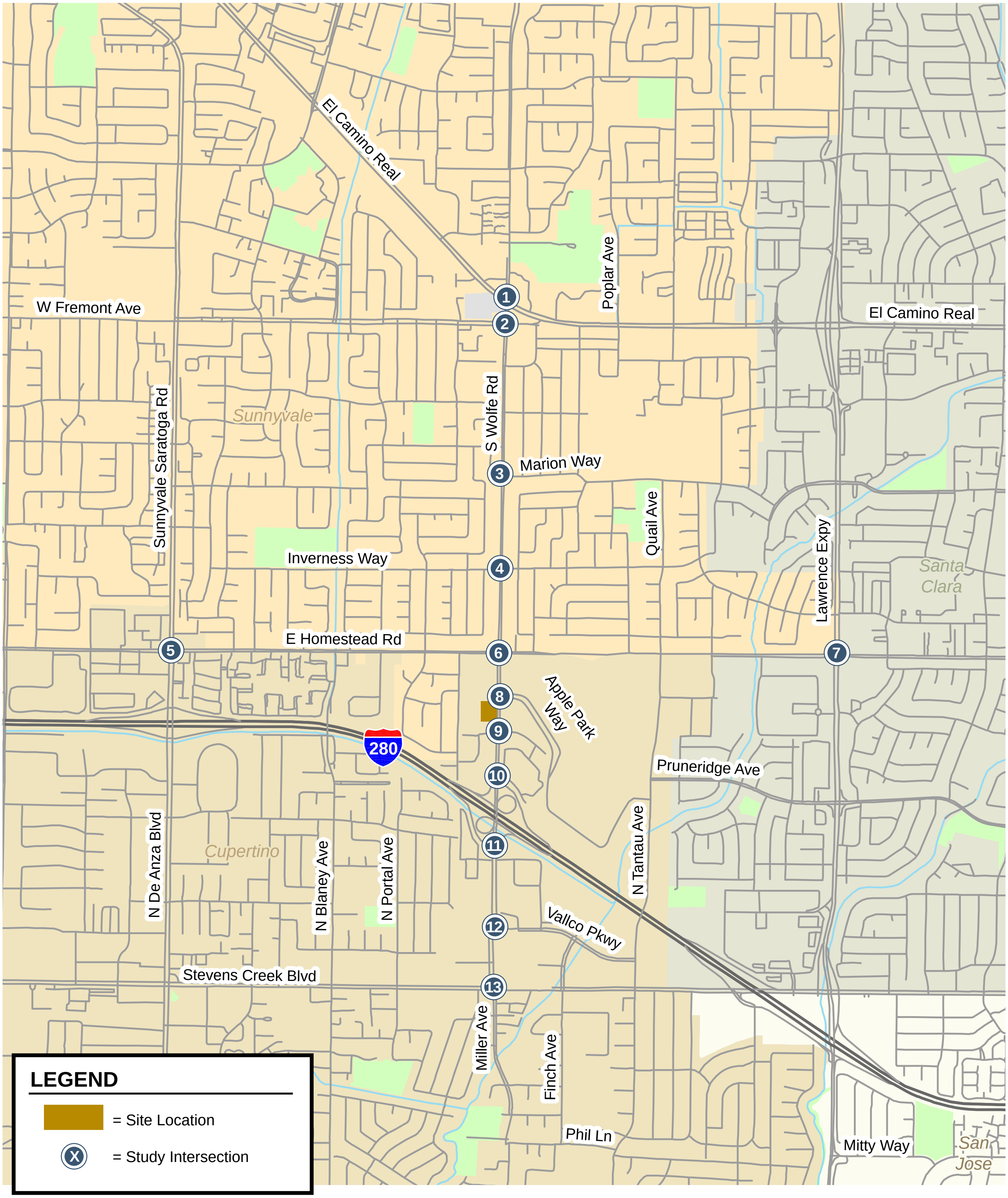

Figure 1
Site Location and Study Intersections

Figure 2
Project Site Plan

Study Freeway Segments

1. I-280, between SR 85 and De Anza Boulevard
2. I-280, between De Anza Boulevard and Wolfe Road
3. I-280, between Wolfe Road and Lawrence Expressway
4. I-280, between Lawrence Expressway and Saratoga Avenue

Traffic conditions at the study intersections were analyzed for both the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour typically occurs between 7:00 AM and 10:00 AM and the PM peak hour typically occurs between 4:00 PM and 7:00 PM on a regular weekday. These are the peak commute hours during which most traffic congestion occurs on the roadways in the study area.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes at study intersections were based on traffic counts conducted in October and November of 2016, as well as March of 2018. The study intersections were evaluated with a level of service analysis using TRAFFIX software in accordance with the *2000 Highway Capacity Manual* methodology. Study freeway segments were analyzed in accordance with CMP methods. The new intersection count data are included in Appendix A.

Scenario 2: *Existing plus Project Conditions.* Existing traffic volumes with the project were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.

Scenario 3: *Background Conditions.* Background traffic volumes reflect traffic added by projected volumes from approved but not yet completed and/or occupied developments in the project area. The approved project trips and/or approved project information was obtained from the Cities of Cupertino, Sunnyvale and Santa Clara. The approved projects information are included in Appendix B.

Scenario 4: *Background plus Project Conditions.* Background traffic volumes with the project (hereafter called project traffic volumes) were estimated by adding to background traffic volumes the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 5: *Future Growth Conditions.* The six CMP study intersections were evaluated for future growth conditions, as stipulated by the CMP guidelines. Future Growth traffic volumes represent traffic growth through the year 2021 (three-year horizon). Future Growth traffic volumes were estimated by applying an annual growth factor of 1.2 percent to the existing volumes, then adding trips from approved developments, as well as project-generated traffic.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, the City of Cupertino, the City of Sunnyvale, the City of Santa Clara, the CMP Annual Monitoring Report, and field observations. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- intersection signal timing and phasing
- approved project information

Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

Signalized Study Intersections

The Cities of Cupertino, Sunnyvale and Santa Clara evaluate level of service at signalized intersections based on the *2000 Highway Capacity Manual* (HCM) level of service methodology using TRAFFIX software. This method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The correlation between average control delay and level of service at signalized intersections is shown in Table 1.

The Cities of Cupertino, Sunnyvale and Santa Clara level of service standard for signalized intersections is LOS D or better, except on roadways considered "regionally significant" within Sunnyvale and on CMP facilities within Santa Clara, which have a standard of LOS E. Of the four study intersections located in the City of Sunnyvale, one is designated a CMP intersection. The Santa Clara study intersection is also a CMP intersection.

CMP Intersections

The designated level of service methodology for the CMP also is the 2000 HCM operations method for signalized intersections, using TRAFFIX. The CMP level of service standard for signalized intersections within Sunnyvale and Santa Clara is LOS E or better. Within the City of Cupertino, the level of service standard for all signalized intersections, including CMP intersections, is LOS D or better.

The following six study intersections have been designated by VTA as CMP intersections:

1. Wolfe Road and El Camino Real (Sunnyvale)
5. De Anza Boulevard and Homestead Road (Cupertino)
7. Lawrence Expressway and Homestead Road (Santa Clara)
10. Wolfe Road and I-280 Northbound Ramps (Cupertino)
11. Wolfe Road and I-280 Southbound Ramps (Cupertino)
13. Wolfe Road and Stevens Creek Boulevard (Cupertino)

Table 1
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.
VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.

Freeway Segments Analysis

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

where:

D= density, in vehicles per mile per lane (vpmpl)
V= peak hour volume, in vehicles per hour (vph)
N= number of travel lanes
S= average travel speed, in miles per hour (mph)

The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for mixed-flow lane segments that are three lanes or wider in one direction, and a capacity of 2,200 vphpl for mixed-flow lane segments that are two lanes wide in one direction. A capacity of 1,800 vphpl was used for high occupancy vehicle (HOV) lanes. The CMP defines an acceptable level of service for freeway segments as LOS E or better. The correlation between vehicle density and level of service on freeway segments is shown in Table 2.

Table 2
Freeway Level of Service Based on Density

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	11.0 or less
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	11.1 to 18.0
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	18.1 to 26.0
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	26.1 to 46.0
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	46.1 to 58.0
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	greater than 58.0

Source: Santa Clara Valley Transportation Authority, Transportation Impact Analysis Guidelines, Updated March 2009 (Based on the *Highway Capacity Manual* (2000), Washington, D.C.).

Intersection Operations

The analysis of intersection level of service was supplemented with an analysis of traffic operations for intersections where the project would add a significant number of left turns. The operations analysis is based on vehicle queuing for high demand left-turn movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of “n” vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of “n” vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at signalized intersections.

The 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length longer than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the "design queue length."

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For the purposes of this study, the criteria used to determine significant impacts on signalized intersections are based on the level of service standards from the Cities of Cupertino, Sunnyvale and Santa Clara. Project impacts also were analyzed according to the County Congestion Management Program (CMP) methodology for the CMP study intersections and freeway segments.

Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in Cupertino, Sunnyvale or Santa Clara if for either peak hour:

1. The level of service at the intersection under background conditions drops below its respective level of service standard when project traffic is added, or
2. An intersection that operates below its respective level of service standard under background conditions experiences an increase in critical-movement delay of four (4) or more seconds and the volume-to-capacity ratio (V/C) increases by one percent (0.01) or more when project traffic is added.

An exception to this threshold applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e. the change in average delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.

CMP Definition of Significant Intersection Impacts

The definition of a significant impact at a CMP intersection is the same as described above, except that the CMP standard for acceptable level of service is LOS E or better. Thus, a CMP intersection that operates at LOS F would fail to meet the CMP level of service standard.

A significant impact by the City of Cupertino, Sunnyvale, Santa Clara and CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to its level of service standard or to an average delay that eliminates the project impact.

Freeway Segment Impact Criteria

The CMP defines an acceptable level of service for freeway segments as LOS E or better. A project is said to create a significant impact on traffic conditions on a freeway segment if for either peak hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F with the addition of project trips, or
2. The level of service on the freeway segment is already operating at an unacceptable LOS F and the number of project trips added to the segment constitutes at least one percent of capacity of the segment.

A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore freeway conditions to existing conditions or better.

Report Organization

The remainder of this report is divided into six chapters. Chapter 2 describes the existing roadway network, transit services, and pedestrian facilities. Chapter 3 presents the intersection operations under background conditions and describes the approved projects in the Cities of Cupertino, Sunnyvale and Santa Clara that would likely add traffic to the study area. Chapter 4 describes the methods used to estimate project-generated traffic and its impact on the transportation system. Chapter 5 describes the proposed Transportation Demand Management (TDM) plan. Chapter 6 describes the intersection operations under future growth conditions. Chapter 7 presents the analysis of other transportation related issues including transit, bicycle, and pedestrian facilities.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit service, pedestrian and bicycle facilities, and the existing levels of service for the key intersections in the study area.

Existing Roadway Network

Regional access to the project site is provided via Interstate 280 (I-280) and El Camino Real (SR 82). Local access to the site is provided by Wolfe Road and Homestead Road. These roadways are described below.

I-280 is a north/south, eight-lane freeway that extends from US 101 in San Jose to I-80 in San Francisco. It is generally an east-west oriented eight-lane freeway in the vicinity of the project site. I-280 is eight lanes wide with three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction in the vicinity of the project site. I-280 provides site access via a full interchange at Wolfe Road.

El Camino Real (SR 82) is a four-lane roadway west of the project site that serves as a north-south route of travel along the Peninsula in the vicinity of the site. El Camino Real extends northward to San Francisco, and southward to San Jose. Access to the project site from El Camino Real is provided via Wolfe Road.

Wolfe Road is a north/south, four- to six-lane arterial that extends from Fair Oaks Avenue in Santa Clara south to Stevens Creek Boulevard, where it transitions into Miller Avenue (major collector street). In the vicinity of the project site, Wolfe Road is four lanes wide. According to the City of Cupertino's *General Plan: Community Vision 2015 – 2040*, an arterial distributes trips to commercial and residential areas and provides a balanced level of service between vehicles, bicycles, and pedestrians. Wolfe Road provides direct access to the project site, as well as to the I-280 interchange.

Homestead Road is an east/west arterial that extends from Lafayette Street in Santa Clara west through Cupertino to Los Altos, where it merges with Foothill Expressway. In the vicinity of the project site, Homestead Road is four- to five-lanes wide. As an arterial, Homestead Road distributes trips to commercial and residential areas and provides a balanced level of service between vehicles, bicycles, and pedestrians. Access from Homestead Road to the project site is provided via Wolfe Road.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. In the vicinity of the project site, sidewalks exist along both sides of Wolfe Road and Homestead Road, providing pedestrian access to and from the project site; however, sidewalks are missing on Pruneridge Avenue along the project frontage. Marked crosswalks with pedestrian signal heads and push buttons are provided on most approaches of the signalized study intersections except the intersections along Wolfe Road at Apple Park Way, Pruneridge Avenue, and the I-280 northbound and southbound ramps. Marked crosswalks are provided along the following approaches of these study intersections:

- North, east, and west legs of the Wolfe Road/Apple Park Way intersection
- North, east, and west legs of the Wolfe Road/Pruneridge Avenue intersection
- West leg of the Wolfe Road/I-280 northbound ramps
- East leg of the Wolfe Road/I-280 southbound ramps

Although some sidewalk and crosswalk connections are missing, the overall network of sidewalks and crosswalks in the study area has adequate connectivity and provides pedestrians with safe routes to transit services and other points of interest in the vicinity of the project site.

Existing Bicycle Facilities

There are some bicycle facilities in the vicinity of the project site. The existing bicycle facilities within the study area are described below and are shown on Figure 3.

North-south bicycle connections in the study area include Class II bike lanes along Wolfe Road between Stevens Creek Boulevard and Fremont Avenue in Sunnyvale, where it transitions into a Class III bike route. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are existing streets that accommodate bicycles but are not separate from the existing travel lanes. Bike routes are typically designated only with signage or with painted shared lane markings (Sharrows) on a road that indicate to motorists that bicyclists may use the full travel lane.

East-west bicycle connections in the study area consist of Class II bike lanes along Homestead Road between Lafayette Street and Foothill Expressway, Stevens Creek Boulevard between Lawrence Expressway and California Oak Way, and along Vallco Parkway between Tantau Avenue and Wolfe Road. Bike routes are also present in the vicinity of the project site, along Marion Way between Oriole Avenue and Wolfe Road.

Existing Transit Service

Existing transit service near the project site (see Figure 4) is provided by the Santa Clara Valley Transportation Authority (VTA). The transit service routes that run through the study area are listed in Table 3, including their route description and commute hour headways.

Access to the existing bus service (Local Bus Routes 26 and 81) is provided via bus stops located near the northwestern and northeastern corners of the Wolfe Road/Apple Park Way intersection, approximately a two-minute walk (about 500 feet) to and from the project site. Additional bus service (Local Bus Routes 23, 101 and 182) is provided at the Vallco Shopping Center Park & Ride Lot, located less than a mile south of the project site. Local Bus Route 26 provides service to Vallco Shopping Center, allowing riders to connect to Routes 23, 101 and 182.

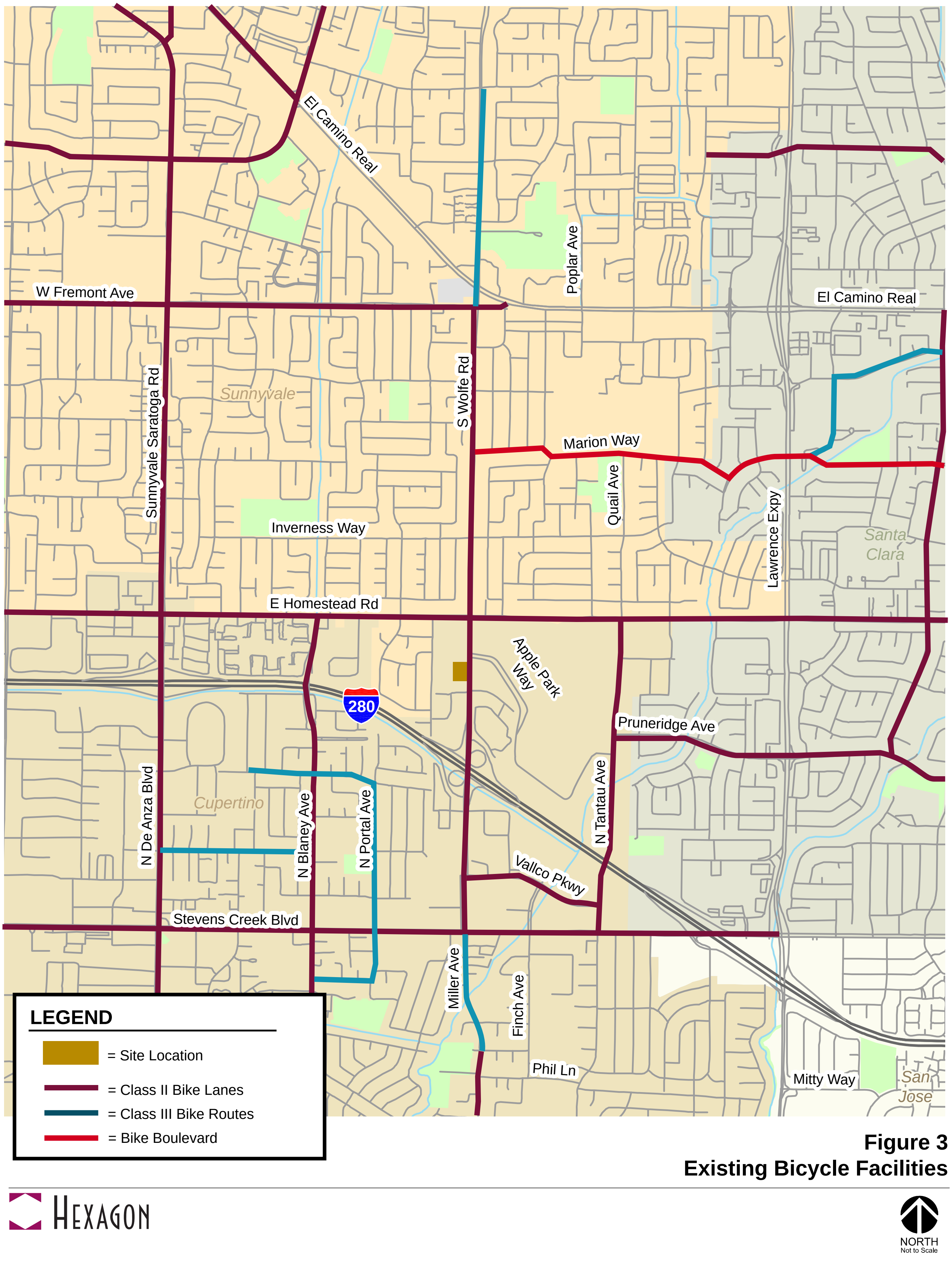

Figure 3
Existing Bicycle Facilities

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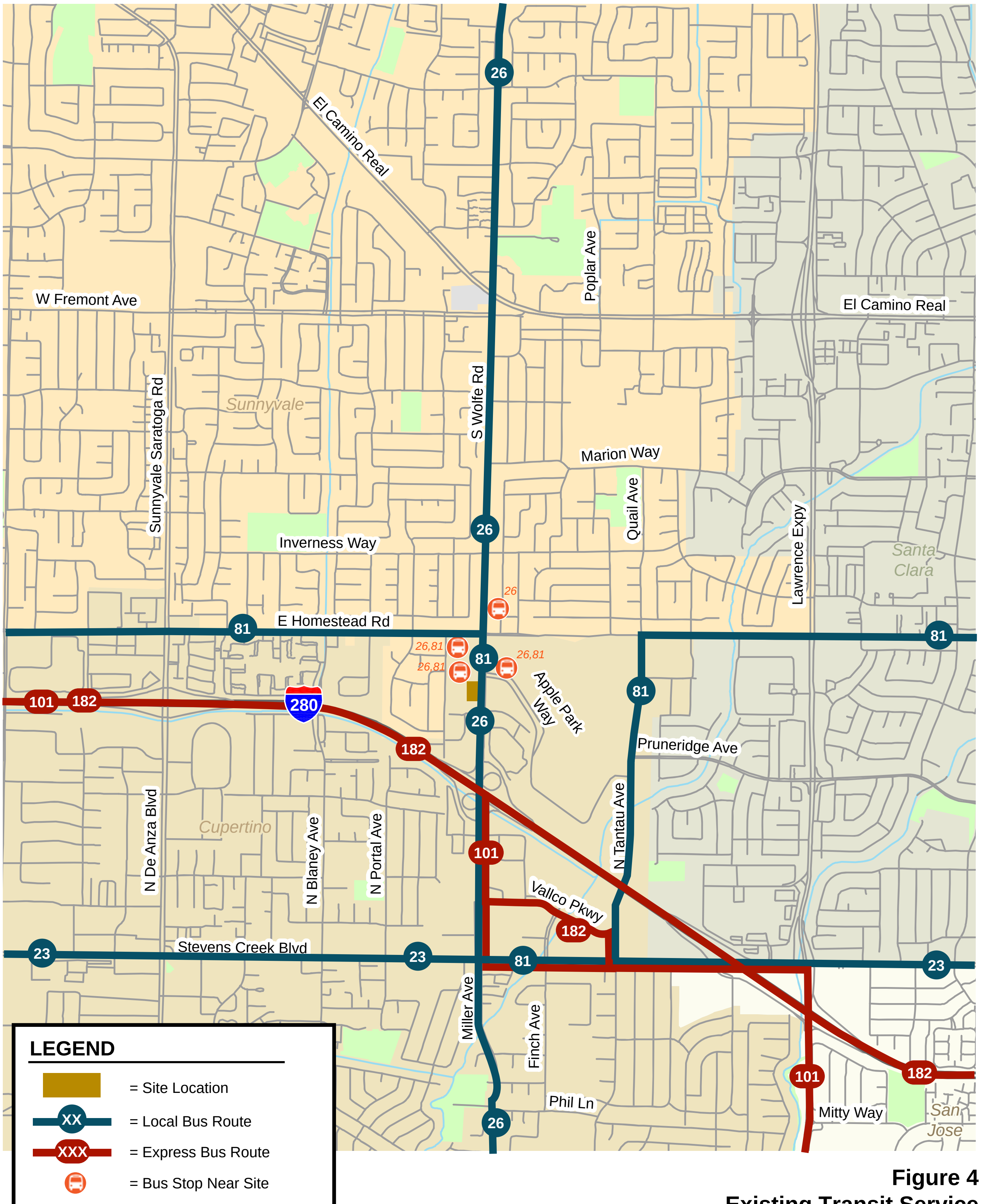

Figure 4
Existing Transit Service

Table 3
Existing Transit Service Near the Project Site

Transit Route	Route Description	Hours of Operation	Headway [1]
Local Route 26	Sunnyvale/Lockheed Martin Transit Center to Eastridge Transit Center	5:20 am - 11:20 pm	30 mins
Local Route 81	Moffett Field/Ames Center to San Jose State University	6:15 am - 9:05 pm	25 - 35 mins
Vallco Shopping Center Park & Ride Lot			
Local Route 23	De Anza College to Alum Rock Transit Center	5:20 am - 1:05 am (next day)	15 - 20 mins
Local Route 101	Page Mill Road/Hansen Way Intersection to Highway 85 Park & Ride Lot	6:20 am - 8:20 am 4:10 pm - 6:45 pm	N/A [2]
Local Route 182	Page Mill Road/El Camino Real Park & Ride Lot to IBM/Bailey Avenue	7:30 am - 8:30 am 5:05 pm - 6:10 pm	N/A [3]

Notes:
[1] Approximate headways during peak commute periods.
[2] Route 101 provides only northbound service (two trips) during the AM and only southbound service (two trips) during the PM.
[3] Route 182 provides only southbound service (one trip) during the AM and only northbound service (one trip) during the PM.

Existing Intersection Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 5. Existing traffic volumes were obtained from peak hour counts collected on October 6th, October 12th, and November 10th of 2016, and March 28th of 2018. The existing peak-hour intersection volumes are shown on Figure 6.

New intersection turning-movement counts conducted for this analysis are presented in Appendix A.

Existing Intersection Levels of Service

The results of the intersection level of service analysis show that all but one of the study intersections currently operate at LOS D or better during both the AM and PM peak hours of traffic (see Table 4). The CMP intersection of Lawrence Expressway and Homestead Road currently operates at LOS E during both the AM and PM peak hours of traffic, which is considered acceptable when measured against the CMP standard (LOS E). Therefore, all the study intersections are currently operating at acceptable levels of service.

The intersection level of service calculation sheets are provided in Appendix C.

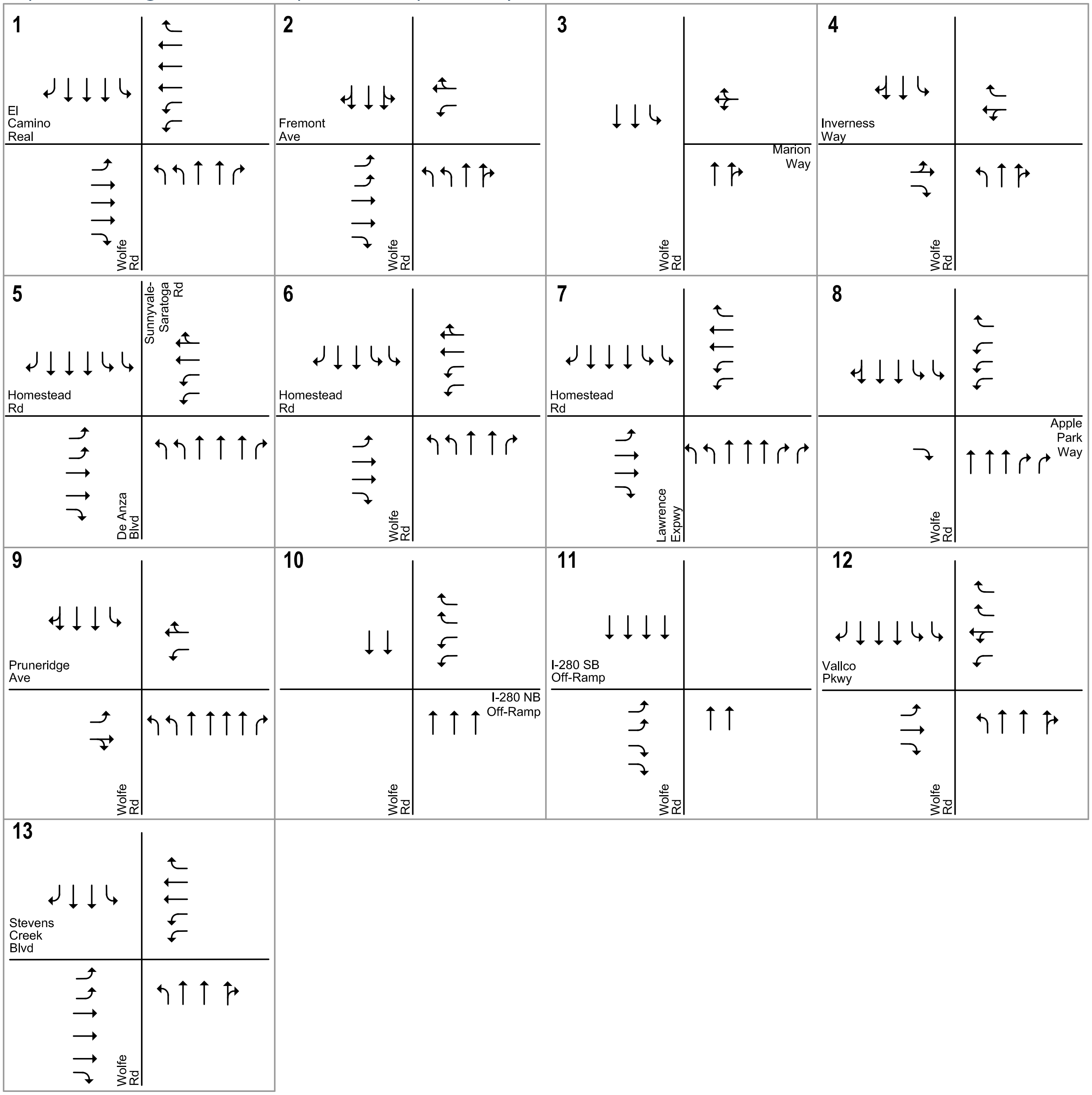

Figure 5
Existing Lane Configurations

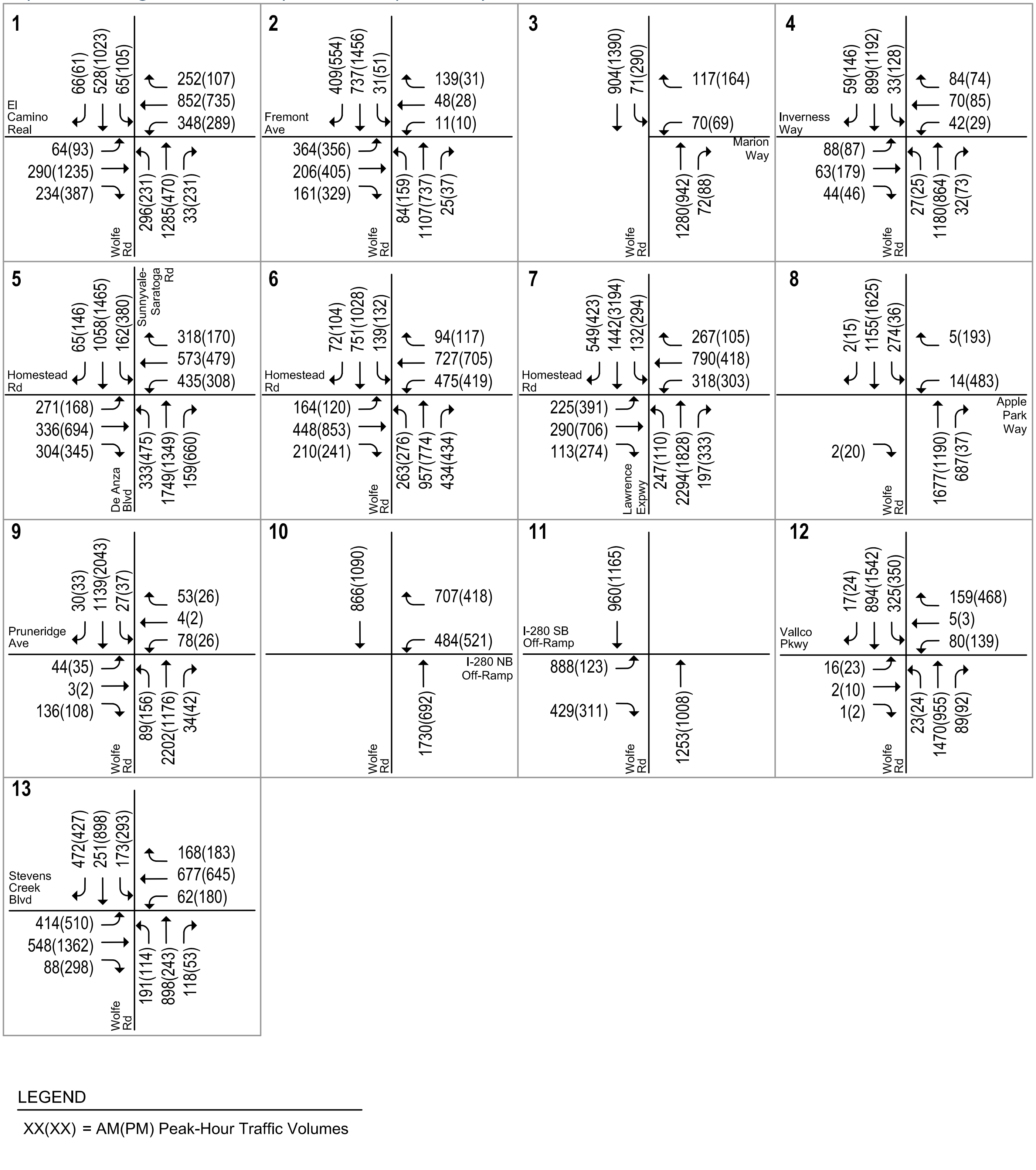

Figure 6
Existing Traffic Volumes

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NORTH
Not to Scale

Table 4
Existing Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS
1	Wolfe Road and El Camino Real *	AM	03/28/18	53.6	D-
		PM	11/10/16	43.0	D
2	Wolfe Road and Fremont Avenue	AM	03/28/18	51.9	D-
		PM	03/28/18	45.6	D
3	Wolfe Road and Marion Way	AM	03/28/18	10.6	B+
		PM	03/28/18	15.9	B
4	Wolfe Road and Inverness Way	AM	03/28/18	12.5	B
		PM	03/28/18	15.2	B
5	De Anza Boulevard and Homestead Road *	AM	03/28/18	35.7	D+
		PM	10/12/16	36.4	D+
6	Wolfe Road and Homestead Road	AM	03/28/18	38.5	D+
		PM	03/28/18	43.2	D
7	Lawrence Expressway and Homestead Road *	AM	03/28/18	69.7	E
		PM	10/06/16	74.8	E
8	Wolfe Road and Apple Park Way	AM	03/28/18	14.1	B
		PM	03/28/18	21.3	C+
9	Wolfe Road and Pruneridge Avenue	AM	03/28/18	21.2	C+
		PM	03/28/18	18.3	B-
10	Wolfe Road and I-280 Northbound Ramps *	AM	03/28/18	8.3	A
		PM	10/12/16	7.0	A
11	Wolfe Road and I-280 Southbound Ramps *	AM	03/28/18	13.9	B
		PM	10/12/16	7.5	A
12	Wolfe Road and Vallco Parkway	AM	03/28/18	22.1	C+
		PM	03/28/18	20.1	C+
13	Wolfe Road and Stevens Creek Boulevard *	AM	03/28/18	39.9	D
		PM	10/12/16	39.9	D

Note:
* Denotes the CMP designated Intersection

Observed Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions.

Overall, most study intersections operated adequately during both the AM and PM peak hours of traffic, and the level of service analysis appears to accurately reflect actual existing traffic conditions. However, field observations showed that some operational problems currently occur during the AM and PM peak commute hours. These issues are described below.

During the AM peak hour, congestion exists along Wolfe Road in the southbound direction that is not obvious from the intersection level of service calculations. However, vehicles are able to clear the study intersections within one signal cycle length. Conversely, during the PM peak hour congestion in the northbound direction exists along Wolfe Road between El Camino Real and the I-280 freeway ramps that also is not evident from the level of service calculations. Vehicle queues, however, are able to clear the study intersections along Wolfe Road within one signal cycle during the PM as well.

During the AM peak hour at the Wolfe Road/Fremont Avenue intersection, the eastbound left-turn vehicle queues were observed to spill out of the dual left-turn pocket and block the inside through lane.

During the AM and PM peak hours at the Wolfe Road/I-280 interchange, the ramp meters create some minor queuing issues on Wolfe Road.

The study intersections along El Camino Real and Lawrence Expressway carry relatively heavy traffic volumes throughout the region. During the AM and PM peak hours, the congestion along these roadways results in long vehicular queues, considerable delays for the minor streets (i.e. Wolfe Road and Homestead Road), and some turning movements not clearing within one signal cycle.

Existing Freeway Levels of Service

Traffic volumes for the study freeway segments were obtained from the 2016 CMP Annual Monitoring Report, which contains the most recent data collected for freeway segments located in Santa Clara County. The results of the analysis are summarized in Table 5. The results show that the following directional freeway segments currently operate at an unacceptable LOS F:

- I-280, eastbound between SR 85 and De Anza Boulevard – PM Peak Hour
- I-280, westbound between SR 85 and De Anza Boulevard – AM Peak Hour
- I-280, eastbound between De Anza Boulevard and Wolfe Road – PM Peak Hour
- I-280, westbound between De Anza Boulevard and Wolfe Road – AM Peak Hour
- I-280, eastbound between Wolfe Road and Lawrence Expressway – PM Peak Hour
- I-280, westbound between Wolfe Road and Lawrence Expressway – AM Peak Hour
- I-280, westbound between Lawrence Expressway and Saratoga Avenue – AM peak hour

Table 5
Existing Freeway Levels of Service

						Mixed-Flow Lanes					HOV Lane				
Freeway	Segment			Direction	Peak Hour	Avg. Speed [1]	# of Lanes	Volume [1]	Density	LOS	Avg. Speed [1]	# of Lanes	Volume [1]	Density	LOS
I-280	SR 85	to	De Anza Blvd	EB	AM	66	3	4,360	22.0	C	67	1	810	12.1	B
					PM	**12**	**3**	**3,820**	**106.0**	**F**	**20**	**1**	**1,660**	**83.0**	**F**
I-280	De Anza Blvd	to	Wolfe Rd	EB	AM	66	3	4,360	22.0	C	66	1	1,460	22.1	C
					PM	**32**	**3**	**5,860**	**61.0**	**F**	60	1	2,520	42.0	D
I-280	Wolfe Rd	to	Lawrence Expwy	EB	AM	66	3	4,160	21.0	C	67	1	810	12.1	B
					PM	**23**	**3**	**5,320**	**77.0**	**F**	40	1	2,080	52.0	E
I-280	Lawrence Expwy	to	Saratoga Ave	EB	AM	59	3	6,550	37.0	D	67	1	940	14.0	B
					PM	66	3	5,310	26.0	C	70	1	1,050	15.0	B
I-280	Saratoga Ave	to	Lawrence Expwy	WB	AM	**22**	**3**	**5,150**	**78.0**	**F**	**26**	**1**	**1,820**	**70.0**	**F**
					PM	66	3	4,950	25.0	C	70	1	840	12.0	B
I-280	Lawrence Expwy	to	Wolfe Rd	WB	AM	**25**	**3**	**5,400**	**72.0**	**F**	**26**	**1**	**1,820**	**70.0**	**F**
					PM	66	3	5,310	26.0	C	70	1	980	14.0	B
I-280	Wolfe Rd	to	De Anza Blvd	WB	AM	**24**	**3**	**5,400**	**75.0**	**F**	45	1	2,160	48.0	E
					PM	66	3	5,310	26.0	C	70	1	700	10.0	A
I-280	De Anza Blvd	to	SR 85	WB	AM	**23**	**3**	**5,250**	**76.1**	**F**	47	1	2,170	46.2	E
					PM	66	3	5,310	26.0	C	70	1	700	10.0	A

Notes:
[1] Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2016.
Bold indicates a substandard level of service.

3. Background Conditions

This chapter describes background traffic conditions, which are defined as conditions just prior to completion of the proposed project. Traffic volumes for background conditions comprise volumes from existing traffic volumes plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the planned roadway network, the procedure used to determine background traffic volumes, and the resulting traffic conditions.

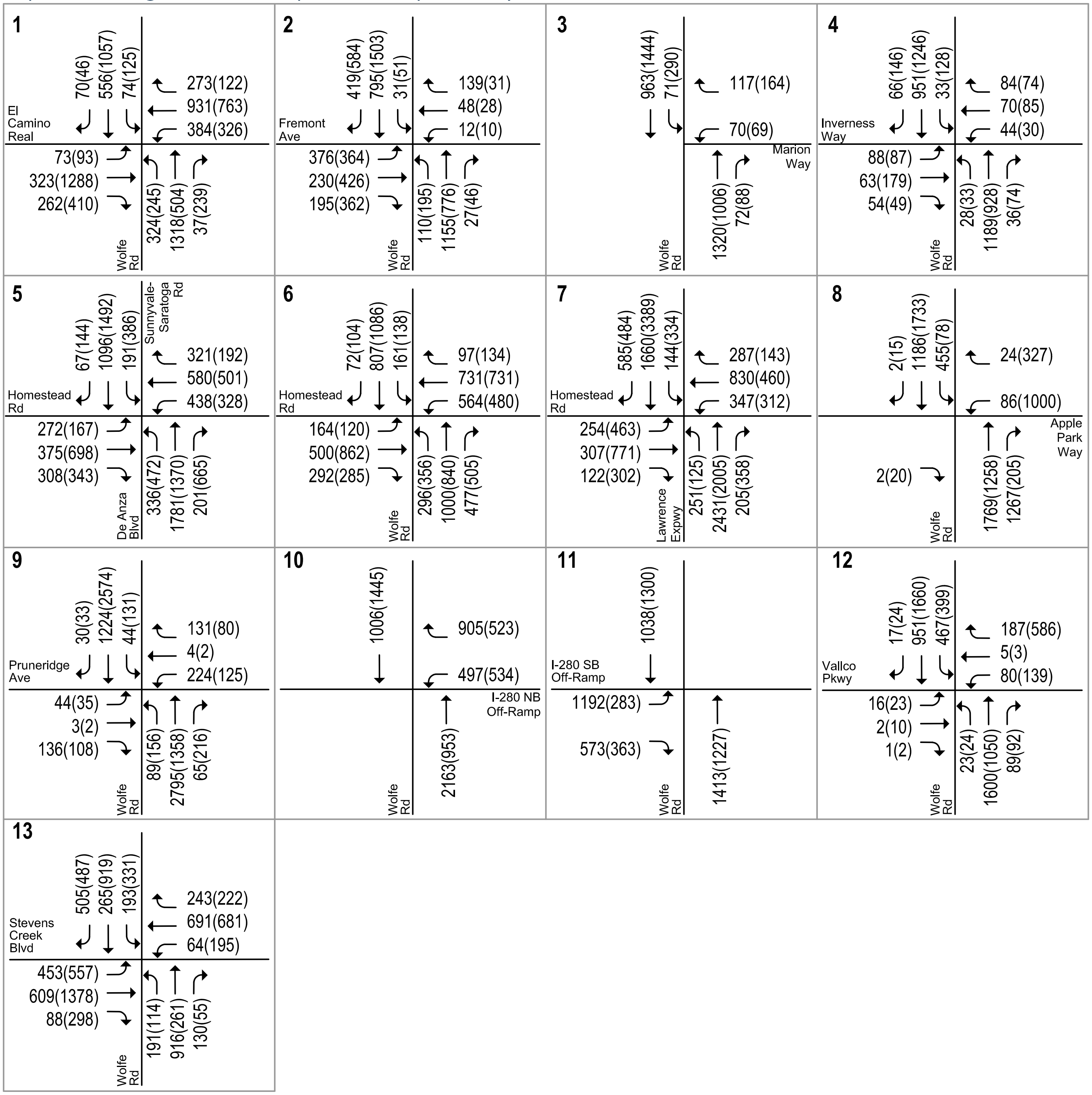
Roadway Network and Traffic Volumes Under Background Conditions

It is assumed in this analysis that the transportation network under background conditions would be the same as the existing transportation network because there are no planned and funded transportation improvements at the study intersections.

Background peak hour traffic volumes were estimated by adding to existing traffic volumes the trips generated by nearby approved but not yet completed or occupied projects (see Figure 7). Approved project information was obtained from the Cities of Cupertino, Sunnyvale, and Santa Clara's lists of approved projects (see Appendix B). Trip generation estimates for the approved projects were based on their respective traffic studies, if available. For relatively small projects that did not require a traffic study, trips were estimated based on ITE trip rates. The estimated trips from the approved projects were distributed and assigned throughout the study area based on the trip distribution assumptions present in the traffic studies or based on knowledge of travel patterns in the study area.

Background Intersection Levels of Service

The results of the level of service analysis show that most of the study intersections would continue to operate at LOS D or better during both the AM and PM peak hours of traffic under background conditions (see Table 6). The CMP intersections of Wolfe Road/El Camino Real and Lawrence Expressway/Homestead Road both would operate at LOS E during the AM peak hour of traffic, which is considered acceptable when measured against the CMP standard. However, the Lawrence Expressway and Homestead Road intersection would operate at an unacceptable LOS F during the PM peak hour due to additional traffic from approved developments in the study area. The intersection level of service calculation sheets are provided in Appendix C.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Background Traffic Volumes

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NORTH
Not to Scale

Table 6
Background Intersection Levels of Service

Study Number	Intersection	Peak Hour	Existing Conditions Avg. Delay (sec)	Existing Conditions LOS	Background Conditions Avg. Delay (sec)	Background Conditions LOS
1	Wolfe Road and El Camino Real *	AM	53.6	D-	55.3	E+
		PM	43.0	D	44.1	D
2	Wolfe Road and Fremont Avenue	AM	51.9	D-	53.2	D-
		PM	45.6	D	47.5	D
3	Wolfe Road and Marion Way	AM	10.6	B+	10.5	B+
		PM	15.9	B	15.9	B
4	Wolfe Road and Inverness Way	AM	12.5	B	12.5	B
		PM	15.2	B	15.3	B
5	De Anza Boulevard and Homestead Road *	AM	35.7	D+	36.2	D+
		PM	36.4	D+	37.3	D+
6	Wolfe Road and Homestead Road	AM	38.5	D+	40.7	D
		PM	43.2	D	46.2	D
7	Lawrence Expressway and Homestead Road *	AM	69.7	E	72.3	E
		PM	74.8	E	**82.1**	**F**
8	Wolfe Road and Apple Park Way	AM	14.1	B	19.4	B-
		PM	21.3	C+	27.8	C
9	Wolfe Road and Pruneridge Avenue	AM	21.2	C+	26.6	C
		PM	18.3	B-	22.4	C+
10	Wolfe Road and I-280 Northbound Ramps *	AM	8.3	A	9.9	A
		PM	7.0	A	6.9	A
11	Wolfe Road and I-280 Southbound Ramps *	AM	13.9	B	18.4	B-
		PM	7.5	A	8.3	A
12	Wolfe Road and Vallco Parkway	AM	22.1	C+	24.4	C
		PM	20.1	C+	21.7	C+
13	Wolfe Road and Stevens Creek Boulevard *	AM	39.9	D	40.8	D
		PM	39.9	D	40.7	D

Note:
* Denotes the CMP designated Intersection
Bold indicates a substandard level of service.

4. Project Conditions

This chapter describes traffic conditions with the project and includes: (1) the method by which project traffic is estimated and (2) a level of service summary. Existing plus project conditions are represented by existing traffic conditions with the addition of traffic generated by the project. Existing plus project traffic conditions could potentially occur if the project were to be occupied prior to the other approved projects in the area. Background plus project conditions are represented by background traffic conditions with the addition of traffic generated by the project.

Transportation Network

The project description includes modifying the west leg of the Wolfe Road/Apple Park Way intersection to allow inbound right turns only. It is assumed in this analysis that the remaining transportation network under project conditions would be the same as the existing transportation network.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed hotel was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic expected to be produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The standard trip generation rates are published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual.*

Project trip generation was estimated by applying to the size and use of the proposed development the appropriate trip generation rates obtained from the ITE *Trip Generation Manual, 10th Edition* (2017). The average trip generation rates for Hotel (Land Use Category 310) were applied to the project. The ITE rates for this Hotel land use category include trips generated by ancillary uses/supporting facilities such as restaurants, fitness facilities, meeting rooms (for conferences, banquets, etc.), and cocktail lounges. Based on the ITE rates for Hotel, the proposed development would generate a total of 2,263 gross daily vehicle trips, with 115 gross trips occurring during the weekday AM peak hour and 135 gross trips occurring during the weekday PM peak hour (see Table 7).

Trip Reductions

In accordance with VTA's *Transportation Impact Analysis Guidelines* (October 2014, Section 8.2.1, "Standard Trip Reductions"), the project is eligible for some reductions from the baseline trip generation described above. The applicable trip reductions are described below.

Internal Mixed-Use Trip Reduction

Given that the project would provide convenient access to the adjacent Cupertino Village Shopping Center, the abundance of supporting retail uses are expected to reduce hotel-generated trips. Thus, in accordance with the 2014 VTA guidelines for projects with a mix of hotel and retail uses, a ten (10) percent trip reduction was applied to the baseline project trip estimates to account for the internalization of trips (i.e., walking trips) between the hotel and the adjacent shopping center uses.

TDM Plan

Projects that develop and implement a Transportation Demand Management (TDM) Plan are eligible for a trip reduction of up to five (5) percent. The project has proposed a robust TDM Plan comprised of design features, programs, and services that promote sustainable modes of transportation and reduce the vehicular trips and parking demand generated by the project. The TDM Plan will include pre-loaded transit passes and free bicycles for guests, as well as subsidized transit passes and a cash-out program for employees. Chapter 5 contains a detailed description of the proposed TDM Plan.

Shuttle Service

The project would offer a dedicated shuttle program for hotel employees and guests, which grants the project eligibility of a three (3) percent trip reduction per the VTA guidelines. The shuttle destinations would be determined based on hotel employee and guest preferences. It is initially thought that shuttles would serve the Mineta International Airport, downtown San Jose, Caltrain, and other major employment centers and destinations in the area. In addition, subject to availability, the proposed shuttle services would be available for local residents (see Chapter 5 for details).

Trip Reductions Not Applied

Although the Apple Campus 2 is located directly across the street from the project site, vehicle trip reductions related to the future usage of the hotel by Apple employees and business partners were not applied. Since future hotel usage by Apple and its associates would likely be substantial, the project trip generation estimates present a conservative (i.e., worst-case) estimate of new vehicular trips.

Existing Use Credit

The trips generated by the existing occupied restaurant and pub (Duke of Edinburgh Restaurant) on the site can be subtracted from the trip generation estimates for the hotel. The existing restaurant's trip generation was obtained from driveway counts conducted on March 27th, 2018. Based on the driveway counts, the existing restaurant is generating 22 vehicle trips during the weekday PM peak hour. The restaurant is not open in the morning on weekdays, so it is not generating any AM peak hour trips. The daily trips generated by the existing restaurant were estimated by multiplying the weekday PM peak hour trips by a factor of 10. Trip credits attributable to the existing vacant retail space on the site were not applied because the retail space has been vacant for too long and those past trips are not included in the existing traffic counts.

Net Project Trips

After applying the ITE trip rates, appropriate trip reductions, and existing site trip credits, the proposed hotel project would generate 1,636 net new daily vehicle trips, with 96 new trips occurring during the AM peak hour and 89 new trips occurring during the PM peak hour. Using the inbound/outbound splits contained in the ITE *Trip Generation Manual*, the project would produce 56 new inbound and 40 new outbound trips during the AM peak hour, and 36 new inbound and 53 new outbound trips during the PM peak hour (See Table 7).

Table 7
Project Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour Rate	AM In	AM Out	AM Total	PM Peak Hour Rate	PM In	PM Out	PM Total
Proposed Uses											
Boutique Hotel [1]	185 rooms	12.23	2,263	0.62	67	48	115	0.73	66	69	135
Hotel and Retail Internal Mixed-Use Reduction (10%) [2]			(226)		(6)	(5)	(11)		(7)	(7)	(14)
TDM Reduction for Financial Incentives (5%) [2]			(113)		(3)	(2)	(5)		(3)	(3)	(6)
TDM Reduction for Dedicated Shuttle Program (3%) [2]			(68)		(2)	(1)	(3)		(2)	(2)	(4)
Subtotal			**1,856**		**56**	**40**	**96**		**54**	**57**	**111**
Existing Uses											
Duke of Edinburgh Restaurant [3]	3.39 ksf		(220)		-	-	-		(18)	(4)	(22)
Net Project Trips			**1,636**		**56**	**40**	**96**		**36**	**53**	**89**

Notes:
KSF = 1,000 square feet
[1] Trip generation based on average trip rates for Hotel (Land Use 310, Occ. Rooms) published in ITE's *Trip Generation Manual, 10th Edition, 2017.*
[2] Trip reduction based on Standard Auto Trip Reduction Rates published in VTA's *Transportation Impact Analysis Guidelines, 2014.*
[3] Trip credits based on PM peak hour count conducted on March 27, 2018. Daily trip credit calculated by multiplying PM peak hour trips by a factor of 10.

Trip Distribution and Assignment

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses including airports. The peak hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern, with an emphasis on freeway access and project driveway location. Figure 8 shows the trip distribution pattern for the proposed hotel. Figure 9 shows the net project trip assignment at the study intersections.

Existing Plus Project Traffic Volumes

Project trips, as presented in Figure 9, were added to existing traffic volumes to obtain existing plus project traffic volumes. The existing plus project traffic volumes are shown on Figure 10.

Existing Plus Project Intersection Analysis

The results of the level of service analysis show that all the study intersections would operate at an acceptable level of service (LOS D or better for City-controlled intersections and LOS E or better for CMP intersections) during both the AM and PM peak hours of traffic if the proposed project were completed and operating today (see Table 8). This analysis is presented for informational purposes only, as the criteria that define a significant project impact at a signalized intersection in the Cities of Cupertino, Sunnyvale and Santa Clara are based on comparing background plus project conditions to background (baseline) conditions. The intersection level of service calculation sheets are included in Appendix C.

At four of the study intersections, the average vehicle delay under existing plus project conditions is shown to decrease slightly compared to existing conditions. This occurs because the average vehicle delay that is calculated is a weighted average of all movements at the intersection. Thus, when project trips are added to individual intersection movements with low vehicle delays, the average delay for the entire intersection as a whole can decrease.

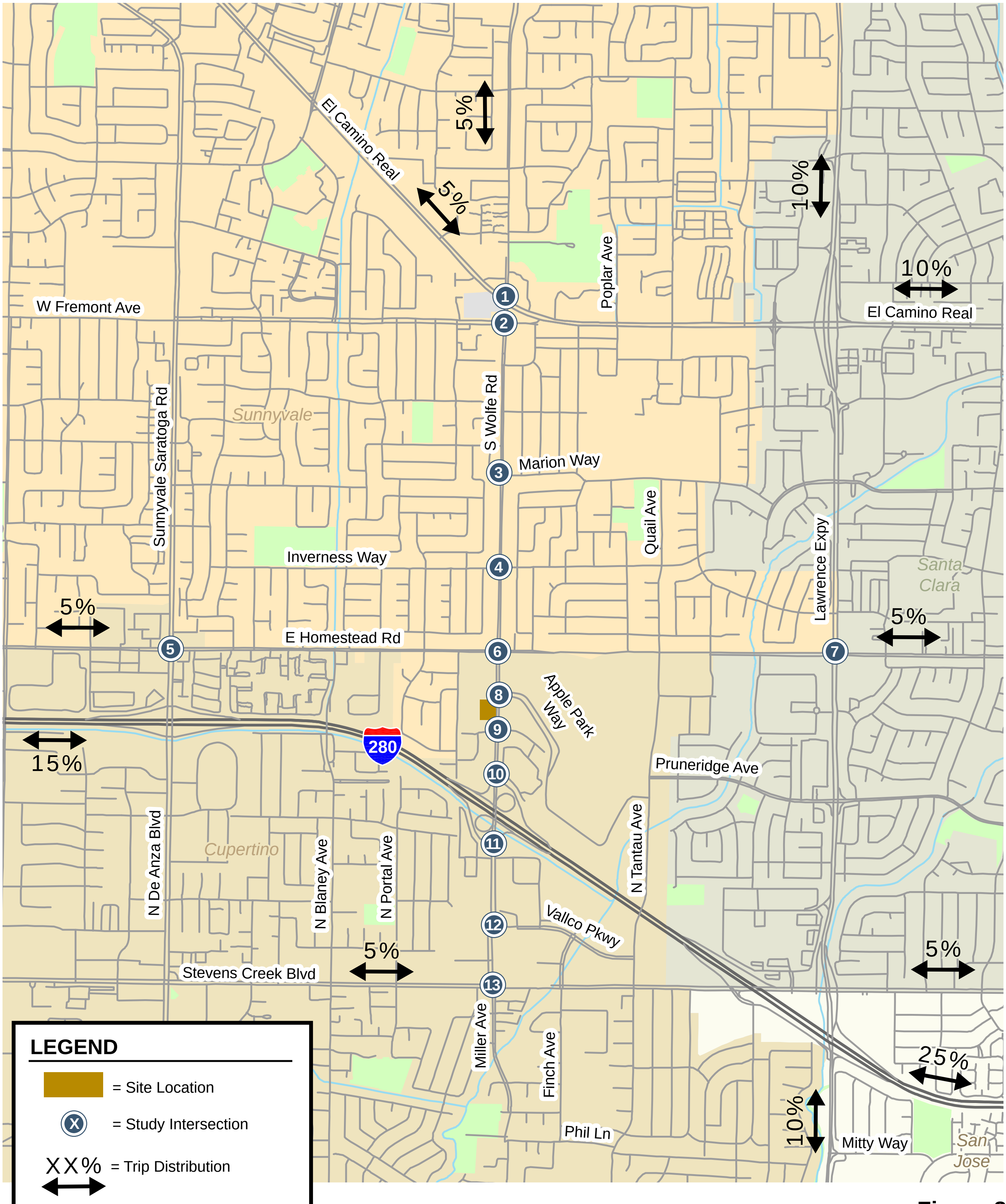
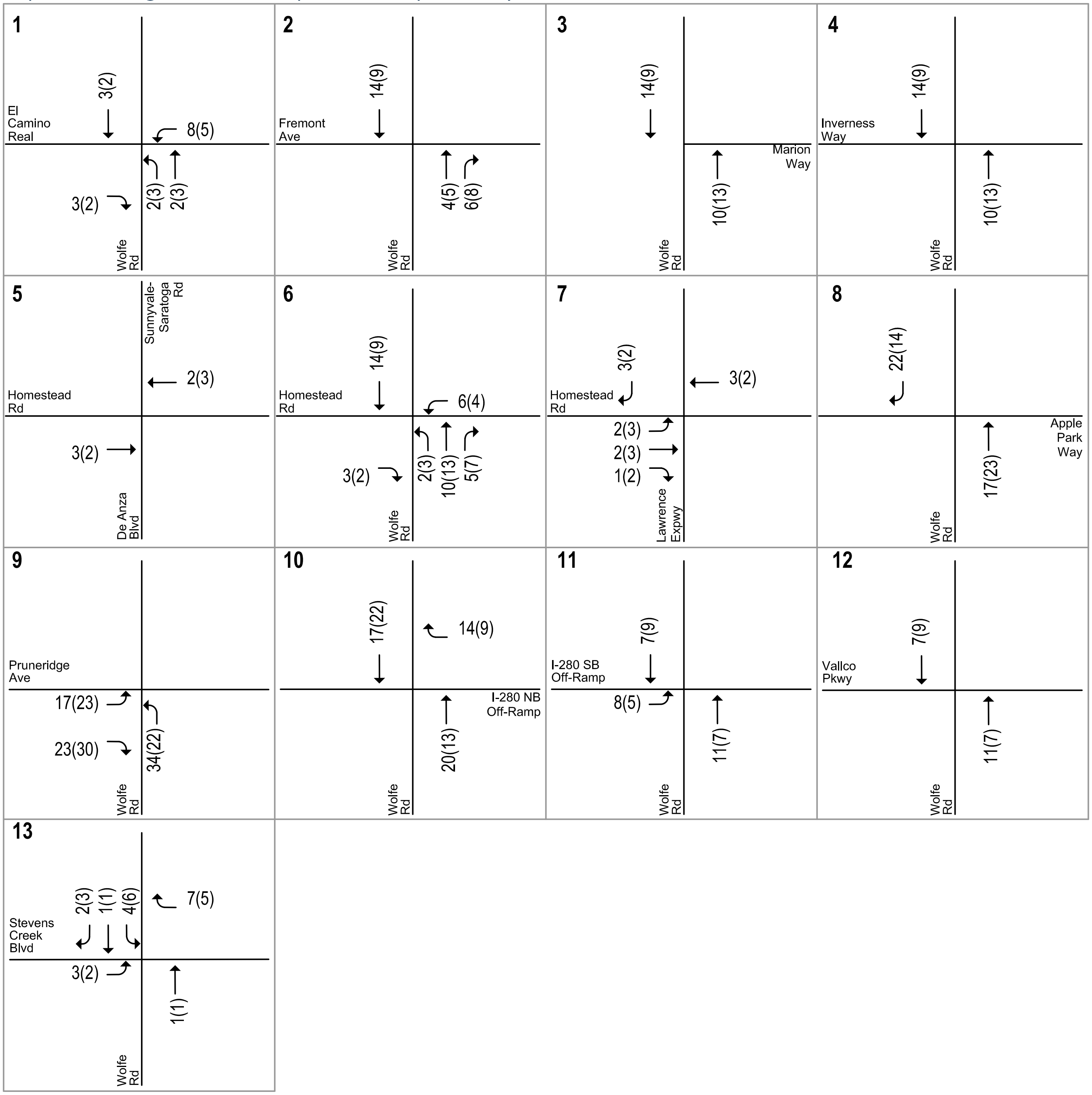


Figure 8
Project Trip Distribution

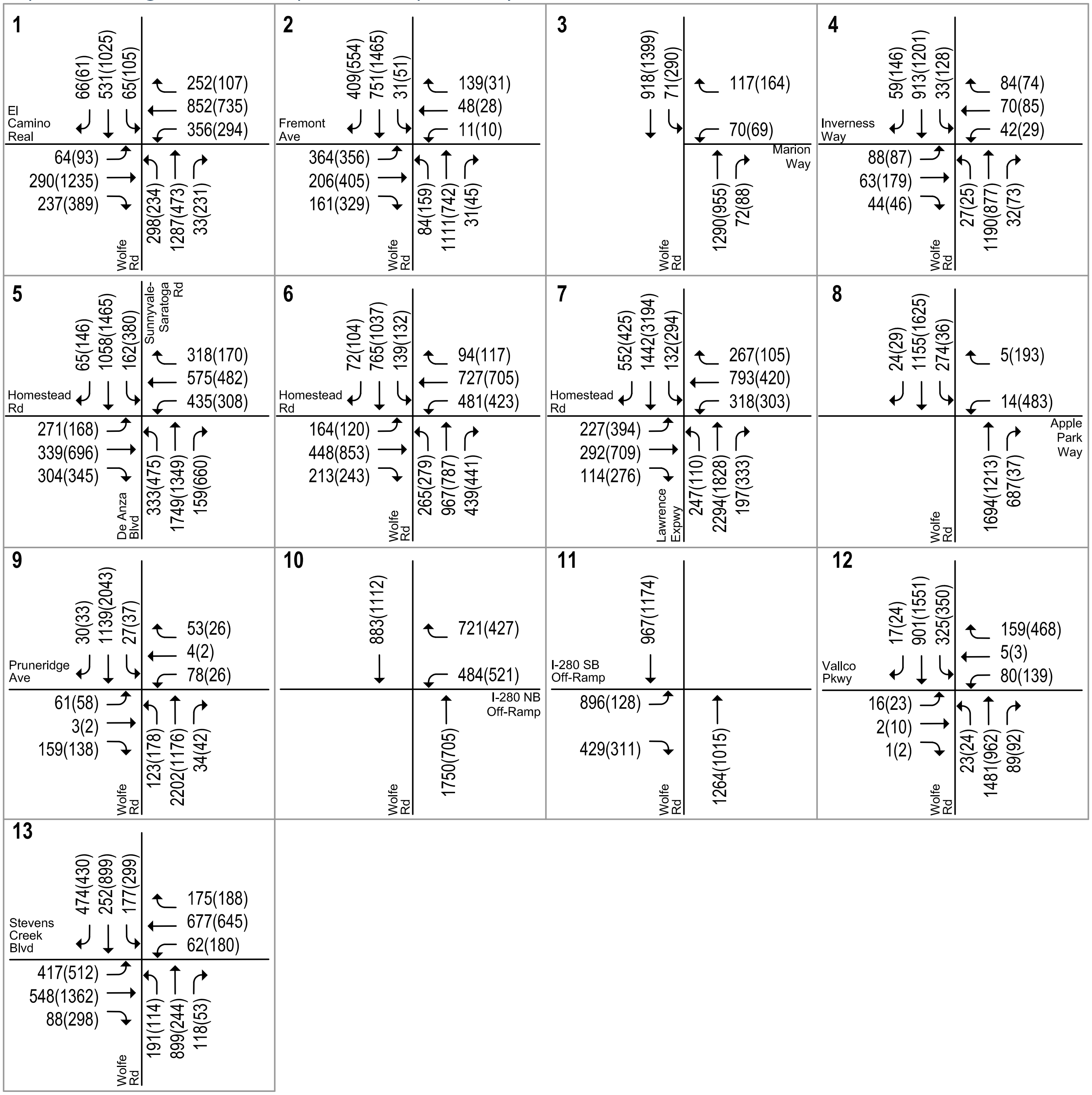


LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 9
Net Project Trip Assignment

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Existing Plus Project Traffic Volumes

Table 8
Existing Plus Project Intersection Levels of Service

			Existing Conditions				
			No Project		With Project		
Study Number	Intersection	Peak Hour	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Incr. in Critical Delay
1	Wolfe Road and El Camino Real *	AM	53.6	D-	53.7	D-	0.0
		PM	43.0	D	43.1	D	0.2
2	Wolfe Road and Fremont Avenue	AM	51.9	D-	52.1	D-	0.3
		PM	45.6	D	45.7	D	0.4
3	Wolfe Road and Marion Way	AM	10.6	B+	10.6	B+	0.0
		PM	15.9	B	15.9	B	0.0
4	Wolfe Road and Inverness Way	AM	12.5	B	12.5	B	0.0
		PM	15.2	B	15.2	B	0.0
5	De Anza Boulevard and Homestead Road *	AM	35.7	D+	35.7	D+	0.0
		PM	36.4	D+	36.5	D+	0.1
6	Wolfe Road and Homestead Road	AM	38.5	D+	38.6	D+	0.0
		PM	43.2	D	43.3	D	0.3
7	Lawrence Expressway and Homestead Road *	AM	69.7	E	69.7	E	0.2
		PM	74.8	E	74.9	E	0.1
8	Wolfe Road and Apple Park Way	AM	14.1	B	14.0	B	0.0
		PM	21.3	C+	21.3	C+	0.0
9	Wolfe Road and Pruneridge Avenue	AM	21.2	C+	22.8	C+	1.4
		PM	18.3	B-	20.6	C+	2.7
10	Wolfe Road and I-280 Northbound Ramps *	AM	8.3	A	8.3	A	0.1
		PM	7.0	A	6.9	A	-0.1
11	Wolfe Road and I-280 Southbound Ramps *	AM	13.9	B	14.0	B	0.1
		PM	7.5	A	7.5	A	0.0
12	Wolfe Road and Vallco Parkway	AM	22.1	C+	22.0	C+	0.0
		PM	20.1	C+	20.1	C+	0.0
13	Wolfe Road and Stevens Creek Boulevard *	AM	39.9	D	40.0	D	0.2
		PM	39.9	D	40.0	D	0.1

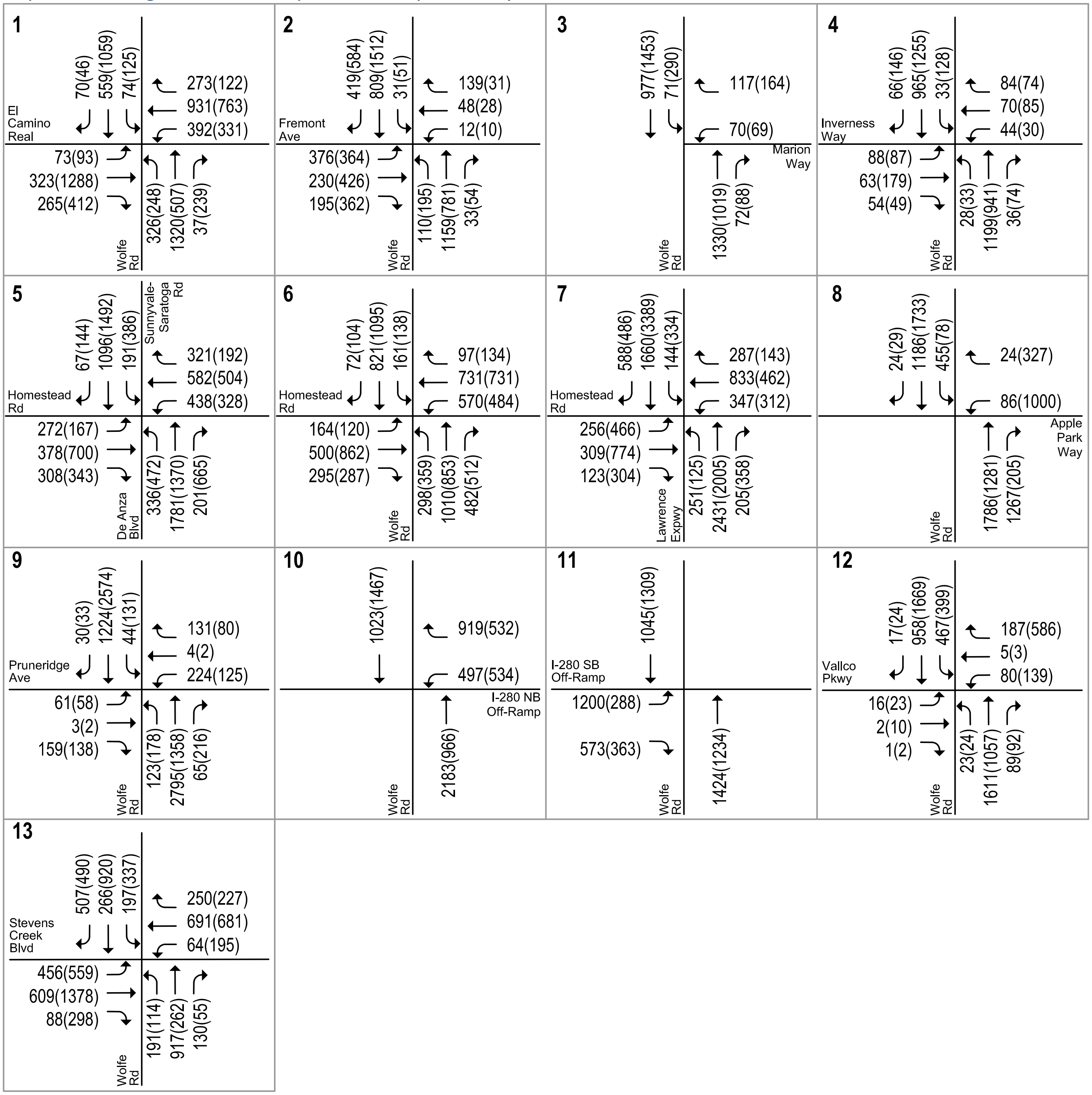
Note:
* Denotes the CMP designated Intersection

Background Plus Project Traffic Volumes

Project trips, as shown in Figure 9, were added to background traffic volumes to obtain background plus project traffic volumes. The background plus project traffic volumes at the study intersections are shown on Figure 11.

Background Plus Project Intersection Analysis

The results of the intersection level of service analysis show that all but one of the study intersections would continue to operate at an acceptable level of service (LOS D or better for City-controlled intersections and LOS E or better for CMP intersections) during both the AM and PM peak hours of traffic under background plus project conditions (see Table 9). The CMP intersection of Lawrence Expressway and Homestead Road would operate at an unacceptable LOS F during the PM peak hour under background plus project conditions. However, the project would not cause the intersection's critical-movement delay to increase by 4 or more seconds and the V/C to increase by 0.01 or more compared to background conditions. Therefore, the intersection impact is considered less than significant. Therefore, none of the study intersections would be significantly impacted by the project. The intersection level of service calculation sheets are provided in Appendix C.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11
Background Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

Table 9
Background Plus Project Intersection Levels of Service

Study Number	Intersection	Peak Hour	Background Conditions: No Project Avg. Delay (sec)	No Project LOS	With Project Avg. Delay (sec)	With Project LOS	Critical Delay (sec)	Incr. In Crit. V/C
1	Wolfe Road and El Camino Real *	AM	55.3	E+	55.4	E+	0.0	0.001
		PM	44.1	D	44.2	D	0.2	0.003
2	Wolfe Road and Fremont Avenue	AM	53.2	D-	53.3	D-	0.4	0.007
		PM	47.5	D	47.6	D	0.4	0.006
3	Wolfe Road and Marion Way	AM	10.5	B+	10.4	B+	0.0	0.003
		PM	15.9	B	15.9	B	0.0	0.004
4	Wolfe Road and Inverness Way	AM	12.5	B	12.5	B	0.0	0.003
		PM	15.3	B	15.3	B	0.0	0.003
5	De Anza Boulevard and Homestead Road *	AM	36.2	D+	36.3	D+	0.0	0.001
		PM	37.3	D+	37.3	D+	0.1	0.001
6	Wolfe Road and Homestead Road	AM	40.7	D	40.8	D	0.3	0.007
		PM	46.2	D	46.4	D	0.4	0.005
7	Lawrence Expressway and Homestead Road *	AM	72.3	E	72.4	E	0.2	0.002
		PM	**82.1**	**F**	**82.3**	**F**	**0.5**	**0.002**
8	Wolfe Road and Apple Park Way	AM	19.4	B-	19.4	B-	0.0	0.000
		PM	27.8	C	27.8	C	0.0	0.003
9	Wolfe Road and Pruneridge Avenue	AM	26.6	C	27.9	C	1.2	0.014
		PM	22.4	C+	24.5	C	2.7	0.026
10	Wolfe Road and I-280 Northbound Ramps *	AM	9.9	A	10.1	B+	0.3	0.009
		PM	6.9	A	6.9	A	0.0	0.007
11	Wolfe Road and I-280 Southbound Ramps *	AM	18.4	B-	18.8	B-	0.5	0.006
		PM	8.3	A	8.3	A	0.0	0.002
12	Wolfe Road and Vallco Parkway	AM	24.4	C	24.4	C	0.0	0.002
		PM	21.7	C+	21.7	C+	0.0	0.002
13	Wolfe Road and Stevens Creek Boulevard *	AM	40.8	D	40.9	D	0.2	0.005
		PM	40.7	D	40.7	D	0.1	0.002

Note:
* Denotes the CMP designated Intersection
Bold indicates a substandard level of service.

Freeway Segment Capacity Analysis

Traffic volumes on the study freeway segments with the project were estimated by adding project trips to the existing volumes obtained from the 2016 CMP Annual Monitoring Report. The results of the freeway segment analysis show that the project would not cause significant increases in traffic volumes (one percent or more of freeway capacity) on any of the study freeway segments currently operating at LOS F, and none of the study freeway segments currently operating at LOS E or better would worsen to LOS F as a result of the project (see Table 10). Therefore, based on CMP freeway impact criteria, none of the study freeway segments would be significantly impacted by the project.

Table 10
Freeway Segment Capacity Analysis

						Existing Plus Project Trips				Project Trips					
						Mixed-Flow Lanes		HOV Lane			Mixed-Flow		HOV Lane		
					Peak	Capacity		Capacity		Total		%		%	
Freeway	Segment			Direction	Hour	(vph)	LOS	(vph)	LOS	Volume	Volume	Capacity	Volume	Capacity	Impact?
I-280	SR 85	to	De Anza Blvd	EB	AM	6900	C	1800	B	8	6	0.1%	2	0.1%	NO
					PM	**6900**	**F**	**1800**	**F**	5	4	0.1%	1	0.1%	NO
I-280	De Anza Blvd	to	Wolfe Rd	EB	AM	6900	C	1800	C	8	6	0.1%	2	0.1%	NO
					PM	**6900**	**F**	1800	D	5	4	0.1%	1	0.1%	NO
I-280	Wolfe Rd	to	Lawrence Expwy	EB	AM	6900	C	1800	B	10	8	0.1%	2	0.1%	NO
					PM	**6900**	**F**	1800	E	13	10	0.2%	3	0.2%	NO
I-280	Lawrence Expwy	to	Saratoga Ave	EB	AM	6900	D	1800	B	10	8	0.1%	2	0.1%	NO
					PM	6900	C	1800	B	13	10	0.2%	3	0.2%	NO
I-280	Saratoga Ave	to	Lawrence Expwy	WB	AM	**6900**	**F**	**1800**	**F**	14	11	0.2%	3	0.2%	NO
					PM	6900	C	1800	B	9	7	0.1%	2	0.1%	NO
I-280	Lawrence Expwy	to	Wolfe Rd	WB	AM	**6900**	**F**	**1800**	**F**	14	11	0.2%	3	0.2%	NO
					PM	6900	C	1800	B	9	7	0.1%	2	0.1%	NO
I-280	Wolfe Rd	to	De Anza Blvd	WB	AM	**6900**	**F**	1800	E	6	5	0.1%	1	0.1%	NO
					PM	6900	C	1800	A	8	6	0.1%	2	0.1%	NO
I-280	De Anza Blvd	to	SR 85	WB	AM	**6900**	**F**	1800	E	6	5	0.1%	1	0.1%	NO
					PM	6900	C	1800	A	8	6	0.1%	2	0.1%	NO

Notes:
[1] Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2016.
Bold indicates a substandard level of service.

5. TDM Plan

Transportation Demand Management (TDM) is a combination of services, incentives, facilities, and actions that reduce single–occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, greenhouse gas emissions, and air pollution problems. The purpose of TDM is to (1) reduce the amount of trips generated by new developments; (2) promote more efficient utilization of existing transportation facilities and ensure that new developments are designed to maximize the potential for sustainable transportation usage; (3) reduce the parking demand generated by new developments and allow for a reduction in parking supply; and (4) establish an ongoing monitoring and enforcement program to guarantee the desired trip and parking reductions are achieved.

Project TDM Measures

The project is proposing to include a comprehensive transportation demand management program. The TDM measures to be implemented by the project include design features, programs, and services that promote sustainable modes of transportation and reduce the vehicular trips and parking demand generated by the project. Such measures encourage walking, biking, and use of transit and shuttles. Implementation of the proposed TDM measures are also designed to reduce project trips and parking demand by employees of the hotel. While the specific measures to be included in the proposed hotel's TDM Plan will be refined during the formal application review process, the preliminary measures are described below.

On-Site TDM Coordinator and Services

The proposed project will provide an on-site TDM coordinator, who will be responsible for implementing and managing the TDM plan. The TDM coordinator will be a point of contact for employees and guests should TDM-related questions arise. Hotel staff will also be trained to provide transit information to guests, as well as information regarding the other TDM measures. Hotel staff will be responsible for ensuring that guests are aware of all transportation options and how to fully utilize the TDM plan. The TDM coordinator and hotel staff will provide the following services and functions to ensure the TDM plan runs smoothly:

- Provide guests information at the time of check-in. The process will include information about public transit services, ridesharing services (e.g., Uber, Lyft, and Wingz), bicycle maps, the on-site bicycle-share program, the on-site car-sharing program, and the shuttle service.
- A summary of the TDM measures offered to all guests and employees.
- Manage the on-site bicycle-share program to ensure the bicycles remain in good condition.
- Manage the on-site car-share program to ensure the vehicles are used in the manner intended by the car-sharing service.

- Provide information to employees about subsidized transit passes and the financial incentive programs for employees who bike or walk to work.
- Conduct parking surveys annually to track actual parking demand and determine whether additional TDM measures, or another parking solution, is needed.

Information Board/Online Kiosk

The transportation coordinator will set up and maintain an on-site bulletin board and/or online kiosk with information regarding non-auto transportation alternatives. The transportation board/kiosk will display key transportation information included in the welcome packets. Additionally, transportation news and commuter alerts will be posted on the board/kiosk. The transportation coordinator will be responsible for adding new information to the board/kiosk to ensure the information remains current and informative. In addition to the guest information provided at the hotel, the initial hotel reservation confirmation email will include information on how to get to the hotel without a vehicle.

Information Packet for Guests and Employees

The hotel staff will provide hard copy information packets ("getting around the area" brochures) to all hotel guests when they first arrive at the building. Similarly, the transportation coordinator will provide "hard copy" information packets to all employees when they are first hired. Because all information will be available online, these packets need not be a comprehensive stack of papers about all services available, which guests tend to disregard anyway. Instead, the Hotel Guest Packet and New Employee Packet will provide a quick easy-to-read announcement of the most important features of the TDM program for guests/employees to know about immediately.

The information packets will include a message to guests that their hotel values alternative modes of transportation and takes their commitment to supporting alternative transportation options seriously. For example, it may include a flyer announcing the "online kiosk", information about the transit subsidies, subsidies related to other TDM programs, and a ride-matching application.

Shuttle Service

The proposed project will offer free shuttles to employees and guests. The shuttle destinations will be determined/finalized based on employee and guest preferences. It is initially thought that shuttles will serve the Mineta International Airport, downtown San Jose, Caltrain, and other major employment centers and destinations in the area. Since the proposed project is a hotel, a portion of the guests will likely be traveling through the San Jose airport. Mineta International Airport is approximately 9.5 miles driving distance from the proposed project. With the option of using the free shuttle, the need for a car and a parking space will be reduced. In addition, subject to availability, the proposed shuttle services will be available for nearby residents and the general public.

On-Site Design Features

As part of the project's TDM Plan, the proposed hotel will include design measures related to the physical attributes of the site and the proposed building. Such design measures encourage walking, biking, and use of transit. For the proposed project, these include:

- **Site Design**. To create a direct link to the adjacent pedestrian facilities and transit services along Wolfe Road, a building entrance will be located along the eastern frontage of the site. The project also proposes adding community amenities such as a high visibility crosswalk that connects to the Cupertino Village Shopping Center, and construction of a new sidewalk along the project frontage on Pruneridge Avenue.

- **Clean Air Vehicle Parking/Electric Vehicle Charging Stations.** The project will include two preferential parking spaces for low emitting/fuel efficient vehicles (see Chapter 6 for details). Designation of premium parking spaces for clean air/electric vehicles is an inexpensive way to encourage fuel efficient and environmentally friendly vehicles.

- **Bicycle Parking.** Providing secure bicycle parking encourages bicycle commuting and increases the parking supply available to guests. The set of plans indicate that the proposed project will include bike racks at street level adjacent to the eastern frontage (Wolfe Road) of the site, accessible to guests and employees (see Chapter 6 for details). The proposed bike racks and designated bike area should include at least 10 bicycle parking spaces.

Bicycle Resources

As part of the information available in the “online kiosk”, resources useful to cyclists will be included. For example, the local bikeways map will be posted for easy reference. The following resources are available to bicycle commuters through 511.org. These resources will be noted on the project’s online information center, in order to make guests and employees aware of them.

- Free Bike Buddy-matching
- Bicycle maps
- Bicycle safety tips
- Information about taking bikes on public transit
- Location and use of bike parking at transit stations
- Information on Bike to Work Day
- Tips on selecting a bike, commute gear, and clothing
- Links to bicycle organizations

Bicycle Share Program

The proposed project will provide on-site bicycles for guests to share. The bicycles will be stored in a secured common space that can be checked out by guests. Local destinations such as the Main Street Shopping Center and the Apple Park Visitor Center are a short bicycle ride away from the proposed project. Inclusion of a bike share program will likely reduce the need for guests to use a vehicle.

Car Share Program

The proposed project will provide on-site access to a car-sharing service such as Zipcar for hotel employees and guests. Vehicles will be located on-site allowing hotel employees and guests to reserve a car and come and go at their convenience. Vehicles can be reserved prior to visiting the hotel.

Transit Passes for Guests

Pre-loaded transit passes are an extremely effective means of encouraging hotel guests to use public transit rather than drive to their destinations. Transit passes allow guests to save money, as well as help them to avoid the stress of driving, particularly in unfamiliar areas. The hotel will provide guests with pre-loaded Clipper Cards[1] for easy transit access. The pre-loaded amount has not yet been determined.

[1] For additional info visit www.clippercard.com

Transit Passes for Employees

The hotel will provide employees with subsidized transit passes. Subsidized transit passes are effective at encouraging employees to use transit rather than drive to work. Transit passes allow employees to save money, as well as help them to avoid the stress of driving during commute periods. The project will provide their employees with financial incentives to utilize public transit (such as the Caltrain Go Pass[2] or Clipper Card[3]) when commuting to and from the project site. The transit subsidies are often set to the monthly maximum transit subsidy allowable under current federal legislation ($125 per employee per month). There are several ways that the hotel can provide this subsidy. One option is for the hotel to fund a pre-tax salary payroll deduction for transit passes through a voucher program (Commuter Check or similar program). The hotel would receive a payroll tax savings as a benefit of this program. Another option is that the hotel could purchase transit passes and provide them to employees free of cost or discounted up to the monthly maximum transit subsidy allowable. Both of these program options would help make transit more financially attractive to employees than driving alone. The preferred subsidy option has not yet been determined

Financial Incentives for Carpooling, Biking and Walking to Work (Employees)

In order to encourage employees of the proposed project to carpool or use alternative modes of transportation to get to work, a parking cash-out program for employees will be established. Employees who carpool or walk/bike to work at least 4 days per week will be eligible to receive a financial incentive for doing so. Employees who request a parking cash-out for carpooling or bicycling/walking to work will not be eligible to receive subsidized annual transit passes.

Participating employees will not be allowed to park in the project's parking garage on a daily basis. However, since there may be times when employees who primarily commute using alternative modes of transportation need to drive to work, employees who receive a financial incentive for carpooling or biking/walking to work (or who receive subsidized transit passes) should be allowed to park in the garage on such occasions. The maximum number of times those individuals may park in the garage could be set at twice a month, or some similar limit based on employee feedback from annual Employee Surveys.

On-Site Ride Matching Assistance (Employees)

The transportation coordinator will distribute a carpool/vanpool matching application to all hotel employees as part of the New Employee Information packets. The application will match employees who may be able to carpool or vanpool together. Some employees who may be reluctant to reach out to find carpool partners via the 511 RideMatch service (described in more detail below) may be more willing to fill out a form that will be administered by their transportation coordinator.

The 511 RideMatch service provides an interactive, on-demand system that helps commuters find carpools, vanpools or bicycle partners. This program should be promoted through the online kiosk. This free car and vanpool ride-matching service helps commuters find others with similar routes and travel patterns with whom they may share a ride. Registered users are provided with a list of other commuters near their employment or residential ZIP code, along with the closest cross street, email, phone number, and hours they are available to commute to and from work. Participants are then able to select and contact others with whom they wish to commute. The service also provides a list of existing car and

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[2] For additional info visit www.caltrain.com/Fares/tickettypes
[3] For additional info visit www.clippercard.com

vanpools in their residential area that may have vacancies. Ride-matching assistance is also available through a number of peer-to-peer matching programs, such as Zimride and TwoGo, which utilize social networks to match commuters.

Emergency Ride Home Program (Employees)

The purpose of an Emergency Ride Home program is to “guarantee” that employees need not worry about being stranded at work without a car in the event of illness, family emergency, or unexpected overtime if they carpool, vanpool, take transit, or bike or walk to work and require a ride home. By reassuring commuters who do not drive alone that they can have timely and paid transportation in the event of an emergency, this program removes one of the largest concerns expressed by most employees about using alternative modes of transportation. Hotel employees will be reimbursed for rides home via taxicab, Uber, Lyft, or other similar service in the event of an emergency.

Transportation Management Authority Membership

The purpose of a Transportation Management Authority (TMA) is to (1) oversee TDM program implementation within a specific area subject to the City’s General Plan, (2) arrange for shared parking, (3) market TDM services and programs, (4) coordinate TDM measures with other agencies, (5) coordinate with the City on annual trip generation monitoring, (6) submit an annual report to the City, and (7) consult on trip reduction options with its members. The hotel is willing to participate and pay its fair-share fees should a local TMA be established.

TDM Plan Monitoring and Reporting

The Cupertino Village Boutique Hotel will be responsible for ensuring that the TDM trip reduction measures are implemented. The designated on-site TDM coordinator will be responsible for implementing the ongoing TDM measures.

Driveway counts will be used to determine the actual AM and PM peak hour trip generation of the development. This information could be compared with the number of trips estimated for the project via the standard ITE trip generation rates contained in this Transportation Impact Analysis report.

The on-site TDM coordinator will conduct an annual survey of all hotel employees and guests to determine the TDM trip reduction measures being utilized, whether the TDM measures provided are effective, and whether employees and/or guests might prefer other TDM measures not being provided. The survey should be constructed as a general survey with questions such as work environment satisfaction to promote survey responses.

TDM Monitoring

The results of the driveway counts should be reported to the City of Cupertino annually, along with an assessment of whether the TDM measures implemented during the preceding year led to a reduction in trips and/or parking, compared to standard ITE trip generation rates, for the project as a whole. The annual report to the City should also include a brief summary of the TDM measures that were in place during the preceding year, with an explanation of any changes or new programs.

6. Future Growth Conditions

This chapter presents a summary of the traffic conditions that would occur under future growth conditions with the proposed project. Future growth conditions represent future traffic conditions with expected growth in the area. The expected future traffic growth was estimated by applying an annual growth factor to the existing counts over 3 years. Thus, future growth conditions reflect a horizon year of 2021.

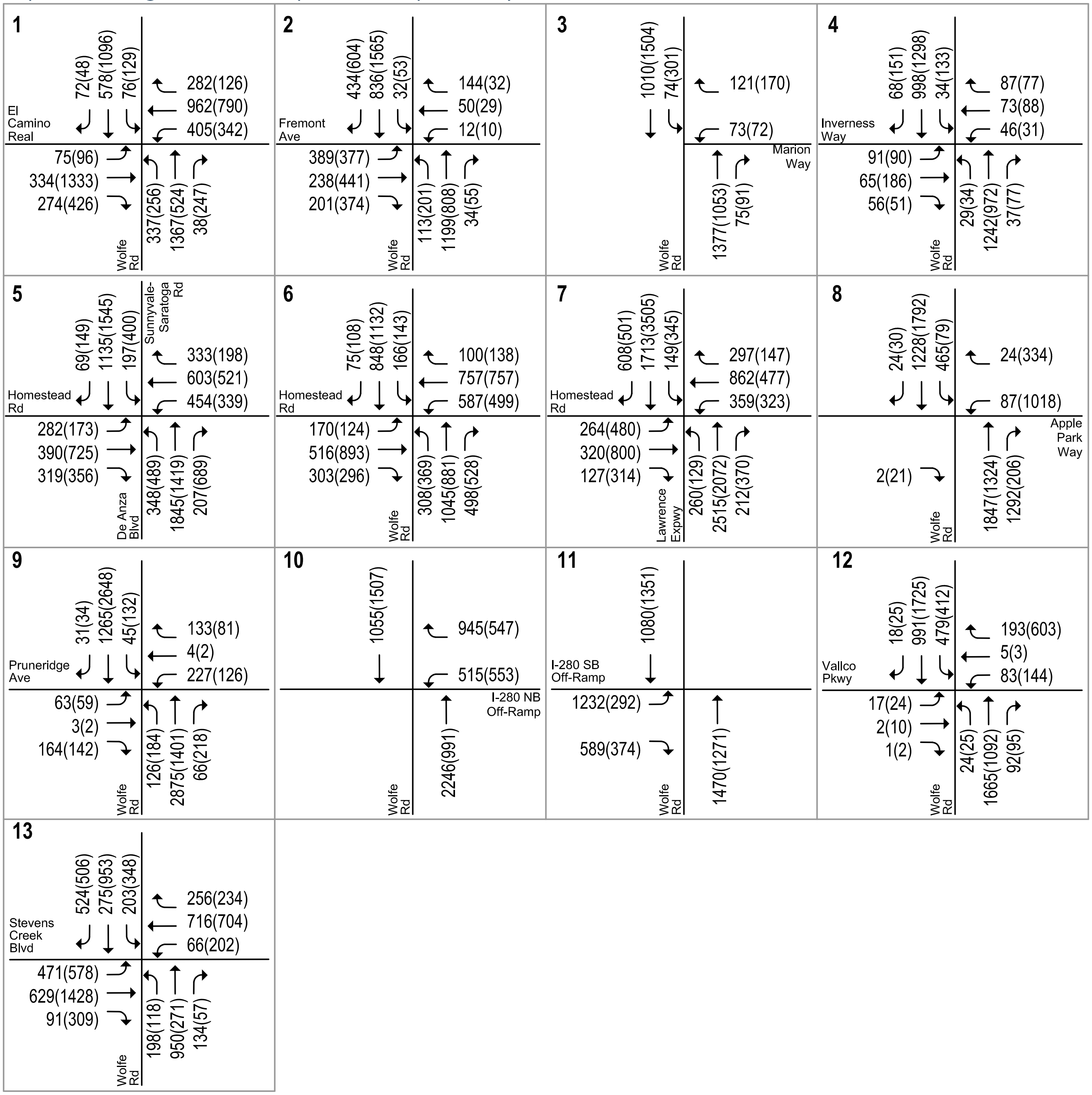
Roadway Network and Traffic Volumes

There is a planned improvement to the Wolfe Road/I-280 interchange that is currently in the environmental review phase with the preferred alternative yet to be decided. For the purpose of the future growth analysis, it was assumed that the transportation network under future growth conditions would be the same as described under project conditions.

The traffic volumes under future growth conditions for the study intersections were estimated by applying a 1.2 percent annual growth rate to the existing traffic counts, adding traffic from approved developments, and adding the project trips. The growth rate was applied to the study intersections through the year 2021 (three-year horizon). The future growth traffic volumes are shown on Figure 12.

Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the CMP intersection of Lawrence Expressway and Homestead Road would operate at an unacceptable LOS F during both the AM and PM peak hours of traffic under future growth conditions (see Table 11). All other CMP study intersections would operate at an acceptable LOS E or better during the AM and PM peak hours. The intersection level of service calculation sheets are provided in Appendix C.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 12
Future Growth Traffic Volumes

HEXAGON

NORTH
Not to Scale

Table 11
Future Growth Intersection Levels of Service

Study Number	Intersection	Peak Hour	Future Growth Conditions Avg. Delay (sec)	Future Growth Conditions LOS
1	Wolfe Road and El Camino Real *	AM PM	57.3 45.9	E+ D
5	De Anza Boulevard and Homestead Road *	AM PM	39.7 44.9	D D
7	Lawrence Expressway and Homestead Road *	AM PM	**81.3** **100.3**	**F** **F**
10	Wolfe Road and I-280 Northbound Ramps *	AM PM	12.0 7.8	B+ A
11	Wolfe Road and I-280 Southbound Ramps *	AM PM	26.7 8.6	C A
13	Wolfe Road and Stevens Creek Boulevard *	AM PM	42.6 43.4	D D

Note:
* Denotes the CMP designated Intersection
Bold indicates a substandard level of service.

7. Other Transportation Issues

This chapter presents other transportation issues associated with the project. These include an analysis of:

- Site access and circulation
- Truck access and circulation
- Parking
- Intersection queuing
- Potential impacts to pedestrian, bicycle, and transit facilities

Unlike the level of service impact methodology, which is adopted by the City Council, most of the analyses in this chapter are based on professional judgement in accordance with the standards and methods employed by the traffic engineering community. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

Site Access and On-Site Circulation

The site access and on-site circulation evaluation is based on the December 15, 2017 site plan prepared by Anderson Architects, Inc (see Figure 2). Site access was evaluated to determine the adequacy of the site's driveways with regard to the following: traffic volume, delays, vehicle queues, geometric design, and sight distance. Figure 13 and Figure 14 show the two below-grade parking garage levels. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Project Driveway Design

Vehicular access to the project site would be provided via a full-access driveway that connects to an existing parking aisle at the rear (west side) of the site. The parking aisle connects to Pruneridge Avenue and also to a partial-access (entry-only) driveway at the Wolfe Road/Apple Park Way intersection. The driveway would provide access to a surface drop-off/pick-up area adjacent to the building entrance, as well as to the underground parking garage.

Floor Plan: Level P1

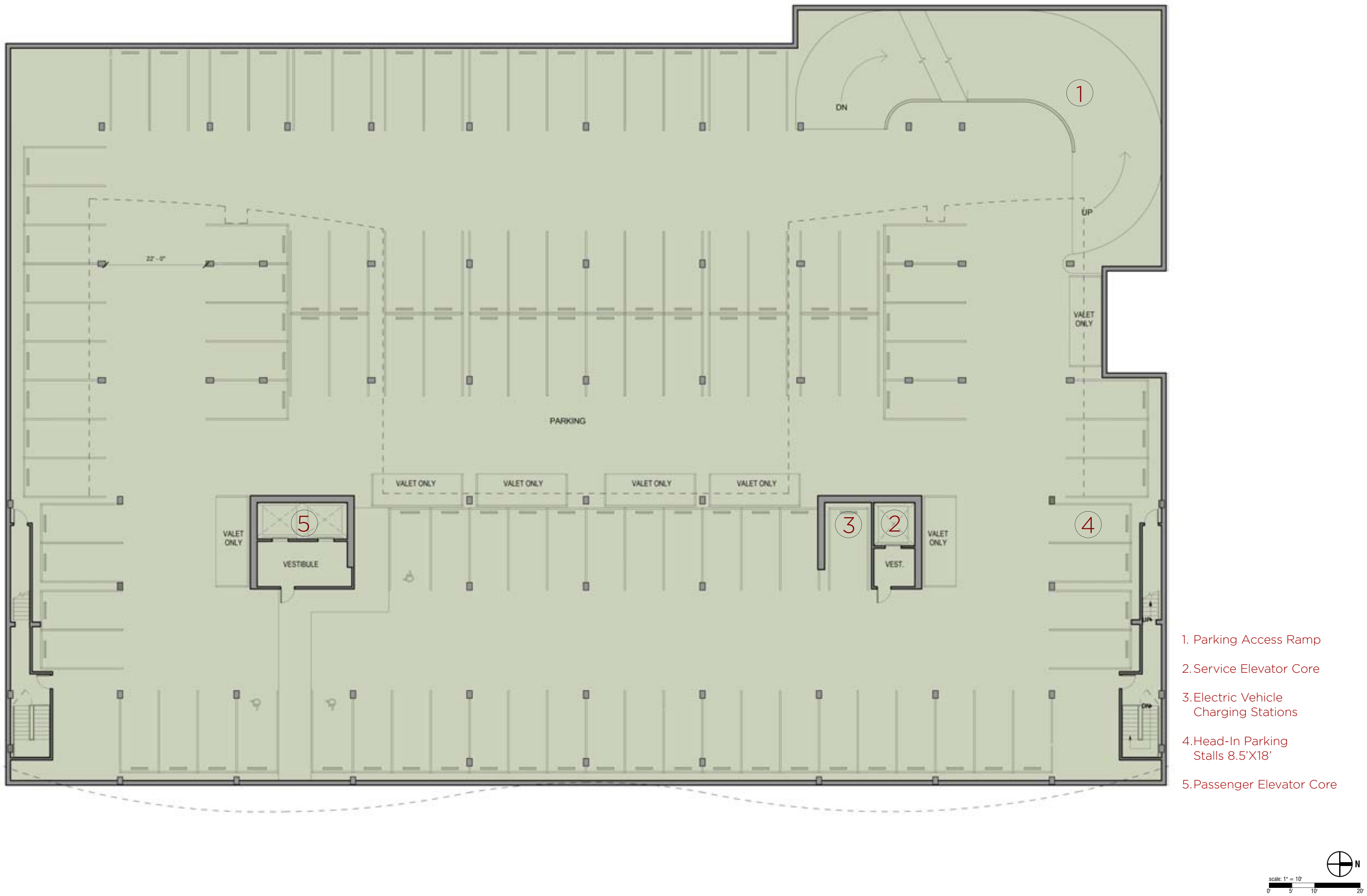


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Figure 13
Parking Garage Below-Grade Level 1 Layout

Floor Plan: Level P2

1. Parking Access Ramp
2. Service Elevator Core
3. Electric Vehicle Charging Stations
4. Head-In Parking Stalls 8.5'X18'
5. Passenger Elevator Core

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9

Figure 14
Parking Garage Below-Grade Level 2 Layout

Sight Distance

There are no existing trees or visual obstructions along the project frontage to obscure sight distance at the project driveways. The project access points should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on Wolfe Road. Any landscaping and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site.

Adequate sight distance (sight distance triangles) should be provided at the Prunridge Avenue entrance and the inbound only north entrance in accordance with Caltrans standards. Sight distance triangles should be measured approximately 10 feet back from the traveled way. Providing the appropriate sight distance reduces the likelihood of a collision at an intersection and provides drivers with the ability to locate sufficient gaps in traffic. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. Given that Wolfe Road has a posted speed limit of 35 mph, the Caltrans stopping sight distance is 300 feet (based on a design speed of 40 mph) for both entrances. Thus, a driver must be able to see 300 feet in both directions along Wolfe Road in order to stop and avoid a collision. Based on the project site plan, it can be concluded that the Prunridge entrance and north project entrance would meet the Caltrans stopping sight distance standards.

Project Access Points

Given that the two project site access points are located at study intersections, these entrances were evaluated based on the intersection level of service analysis. Under background plus project conditions, the intersections providing access to the site would operate at LOS C or better during the AM and PM peak hours (see Chapter 5). Therefore, both entrances are expected to operate without excessive delays or queuing.

Wolfe Road/Pruneridge Avenue Intersection

This intersection would provide full-access to the site, allowing right and left inbound and outbound turns to and from Wolfe Road. The project-generated gross trips that are estimated to occur at this south entrance point are 34 inbound trips and 40 outbound trips during the AM peak hour, and 32 inbound trips and 57 outbound trips during the PM peak hour. Based on the traffic volumes near the project site and observations of existing traffic operations along Wolfe Road, vehicle queues are not expected to exceed a few (2-3) vehicles in length during the peak hours. Given that this entrance is positioned as the west leg of the Wolfe Road/Pruneridge Avenue intersection, inbound and outbound left-turning project trips are made under a protected left-turn signal.

Wolfe Road/Apple Park Way Intersection

Currently, the west leg of the Wolfe Road/Apple Park Way intersection allows only inbound and outbound right turns. However, the project is proposing to modify the west leg of the Wolfe Road/Apple Park Way intersection to allow only inbound right turns from Wolfe Road. The project-generated gross trips that are estimated to occur at the Wolfe Road/Apple Park Way intersection are 22 inbound trips during both the AM and PM peak hours. Based on the traffic volumes near the project site and turn-restrictions at this entrance, vehicle queuing issues are not expected to occur.

Secondary Access Option

Operations of a secondary site access option was evaluated at the request of City staff. The secondary site access option would consist of removing the right-turn only west leg at the Wolfe Road/Apple Park Way intersection entirely. City staff have indicated that this change might be desirable because the current access at this entrance/exit is already restricted to right turns only, and illegal left turns have been observed. The incorporation of this modification would shift existing shopping center traffic currently utilizing this right-turn only driveway (2 inbound and 2 outbound trips during the AM, and 15 inbound and 20 outbound trips during the PM) to the other existing right-turn only shopping center driveway located just under 300 feet to the north. Since these volumes are so small, the shift would not have a noticeable effect on the driveway operations to the north.

Project-generated traffic entering the project site from the north (22 AM and PM inbound trips) would be shifted south to the west leg of the Wolfe Road/Pruneridge Avenue intersection. With implementation of this site access option, the level of service at the Wolfe Road/Pruneridge Avenue intersection would remain unchanged at LOS C or better during both peak hours under all traffic scenarios. Thus, with the secondary site access option, project site access would remain adequate.

On-Site Circulation

On-site vehicular circulation was reviewed in accordance with the City of Cupertino Zoning Code and generally accepted traffic engineering standards. Generally, the proposed site plan would provide vehicles with adequate connectivity through the parking areas. The project site plan shows a pick-up/drop-off area at the hotel entrance and also a connection to the garage ramp (see Figure 15).

The City's standard minimum width for two-way drive aisles is 22 feet wide where 90-degree parking is provided. This allows sufficient room for vehicles to back out of the parking spaces. According to the site plan, the project would provide 90-degree parking stalls as well as perpendicular stalls for valet services throughout both below-grade levels of the parking garage. The drive aisles throughout the parking garage measure 22 feet wide. Thus, adequate access to all parking stalls would be provided throughout the site.

Parking Stall Dimensions

According to the site plan, the project proposes standard-size (8.5 feet wide by 18 feet long) parking stalls, which would meet the City's off-street parking design standard. Van accessibility is provided at 6 of the 7 ADA parking stall locations.

Parking Garage Vehicular Access and Circulation

The project site plan shows adequate vehicular circulation within the parking garage on both parking levels, with no dead-end drive aisles (see Figures 13 and 14). Vehicular access to the parking garage entrance/exit, as well as the second below-grade level, would be provided via a curved access ramp located at the northwestern corner of the project site. Based on the garage plans, the width of the ramp would be adequate to serve two-way traffic. The slope of the ramp is not indicated on the site plan but it appears the ramp slope would also be adequate (less than a 15% grade).

An analysis of vehicle access using the passenger vehicle turning-movement template shows the radius of the ramp is too tight and would not provide adequate vehicular access to the parking levels. Large passenger vehicles would require most of the ramp width to access the parking garage levels. Even small vehicles would have difficulty negotiating the sharp right turns and would encroach upon the opposing lane on the ramp, resulting in conflicts between inbound and outbound vehicles. Thus, a parking garage ramp with a larger radius is recommended to adequately serve inbound and outbound project vehicles.

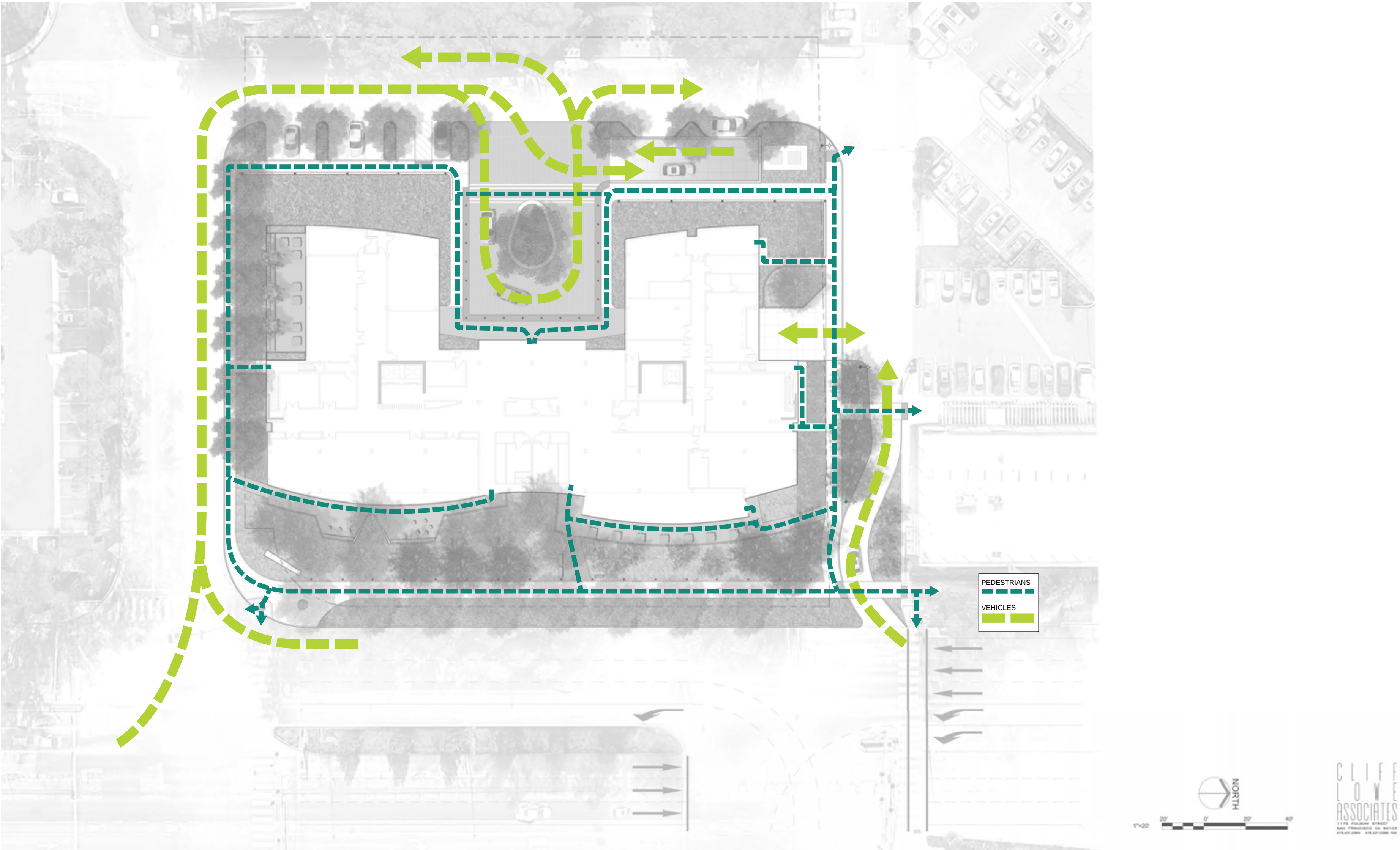

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Figure 15
Vehicular and Pedestrian On-Site Circulation

Bike and Pedestrian On-site Circulation

The site plan shows adequate pedestrian circulation throughout the site, as well as between the site and the surrounding pedestrian facilities. The project would construct a continuous sidewalk around the perimeter of the hotel site. Along the northern and southern edges of the hotel building, the site plan shows pedestrian connections between the hotel and the outdoor dining and plaza areas, as well as a connection to the existing sidewalk on Wolfe Road (see Figure 15). Near the northeast corner of the project site the site plan shows a pedestrian connection to the adjacent Cupertino Village Shopping Center.

Pedestrian access between the parking structure and the on-site uses would be provided via elevators and a stairway on each parking level. The elevators would be located toward the center of the garage, while the stairways would be located in the northeast and southeast corners of the garage and would provide direct access to either the building's main lobby or to an exit corridor. Based on the proposed site plan, the project would provide adequate pedestrian circulation throughout the site, on all levels of the parking structure, and to the surrounding pedestrian facilities and Cupertino Village Shopping Center.

Truck Access and Circulation

The project plans show a designated loading area for delivery trucks located on the northern edge of the project site, adjacent to the Cupertino Village Shopping Center. A truck loading dock would be accessed through the loading area. The site plan was reviewed for truck access using truck turning-movement templates for a SU-30 truck type, which represents small emergency vehicles, garbage trucks, and small to medium delivery and moving trucks. Based on the current site plan configuration, the off-street loading space would measure 18 feet wide by 38 feet long by 14 feet high and would provide adequate access for SU-30 truck types.

The trash area is not shown on the site plan; however, it is assumed that garbage collection activities would occur at or near the off-street loading space. The site plan should be updated to show the trash area.

Parking Supply

The City of Cupertino Zoning Code (Section 19.124.040) states that hotel uses are required to provide one parking stall per room plus one parking stall per employee. The project as proposed would construct a 185-room hotel with up to 62 staff members, which would equate to a total parking requirement of 247 spaces (185 + 62 = 247). According to the project site plan, the project would provide a total of 248 parking spaces: 11 spaces at-grade west of the building entrance, 121 spaces on the first below-grade level of the garage, and 116 spaces on the second below-grade level of the garage. Of the 248 parking spaces provided, 16 spaces would be designated for valet services. Valet parking is typically restricted from general guest parking due to either nonstandard parking stall dimensions and/or access limitations. However, it is common for hotels to provide special parking arrangements such as valet parking to meet the required parking demand. Parking exceptions, including valet parking, are allowed with City approval per Section 19.124.060C of the Zoning Code.

Per the California Building Code (CBC) Table 11B-6, seven (7) ADA accessible spaces are required for projects with 201 to 300 parking spaces. Of the required accessible parking spaces, one van accessible space is required. The plans show a total of seven (7) accessible spaces, with three spaces located on each level of the parking garage and one space in the parking area west of the building area. Of the provided ADA accessible spaces, six (6) are shown to be designated van accessible. Therefore, the project would adhere to the CBC accessible parking provisions.

Shared Parking

The project's proximity to the Cupertino Village Shopping Center provides an opportunity for shared parking between the complementary land uses. A detailed shared parking analysis was prepared for the hotel project and adjacent Cupertino Village Shopping Center and is provided in Appendix D.

Bicycle Parking

According to the City's Bicycle Parking Standards (Chapter 19.124, Table 19.124.040(A)), the project is required to provide bicycle parking for the new building at a rate of one bicycle parking space per 20,000 square feet. This equates to a total requirement of 10 bicycle parking spaces, based on 207,605 square feet (per project site plan). The provided bicycle parking is also required to be a Class II facility, which the City defines as:

- A facility intended for short-term parking.
- A stationary object of which users can lock the frame and both wheels with a user-provided lock.
- A facility designed so that the lock is protected from physical assault.
- A facility that must accept U-shaped locks and padlocks.
- A facility within constant visual range of persons within the adjacent building or located at street floor level.

The project site plan shows bicycle parking located along the eastern edge of the project site. However, the project plans do not specify the number of bicycle spaces that would be available for the project. Therefore, the project site plan should be updated to show at least 10 Class II bicycle parking spaces prior to the final design, to ensure the project conforms to the City's Bicycle Parking Standards.

Intersection Queuing Analysis

The operations analysis is based on vehicle queuing for high-demand turn movements at the study intersections (see Table 12). The following nine (9) left-turn movements were examined as part of the queuing analysis for this project:

- Northbound and westbound left-turn at the Wolfe Road/El Camino Real intersection
- Northbound and westbound left-turn at the Wolfe Road/Homestead Road intersection
- Eastbound left-turn at the Lawrence Expressway/Homestead Road intersection
- Northbound and eastbound left-turn at the Wolfe Road/Pruneridge Avenue intersection
- Southbound and eastbound left-turn at the Wolfe Road/Stevens Creek Boulevard intersection

The estimated left-turn vehicle queue lengths were compared to the storage lengths of the existing left-turn pockets. The results of the queuing analysis show that all the left-turn movements that were analyzed would provide adequate storage for the estimated left-turn vehicle queues under all traffic scenarios.

Table 12
Queuing Analysis Summary

	Wolfe Road & El Camino Real				Wolfe Road & Homestead Road				Lawrence Expressway & Homestead Road		Wolfe Road & Pruneridge Avenue				Wolfe Road & Stevens Creek Boulevard			
	NBL		WBL		NBL		WBL		EBL		NBL		EBL		SBL		EBL	
Measurement	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing																		
Cycle/Delay [1] (sec)	205	150	205	150	125	135	125	135	170	190	125	125	125	125	120	124	120	124
Volume (vphpl)	148	116	174	145	132	138	238	210	113	196	45	78	44	35	173	293	207	255
95th %. Queue (veh/ln.)	13	9	15	10	8	9	13	13	9	16	4	6	4	3	10	16	11	14
95th %. Queue (ft./ln) [2]	325	225	375	250	200	225	325	325	225	400	100	150	100	75	250	400	275	350
Storage (ft./ ln.)	425	425	450	450	325	325	400	400	525	525	250	250	200	200	550	550	435	435
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Existing Plus Project																		
Cycle/Delay [1] (sec)	205	150	205	150	125	135	125	135	170	190	125	125	125	125	120	124	120	124
Volume (vphpl)	149	117	178	147	133	140	241	212	114	197	62	89	61	58	177	299	209	256
95th %. Queue (veh/ln.)	14	9	16	10	8	9	13	13	9	16	5	6	5	5	10	16	12	14
95th %. Queue (ft./ln) [2]	350	225	400	250	200	225	325	325	225	400	125	150	125	125	250	400	300	350
Storage (ft./ ln.)	425	425	450	450	325	325	400	400	525	525	250	250	200	200	550	550	435	435
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Background																		
Cycle/Delay [1] (sec)	205	150	205	150	125	135	125	135	170	190	125	125	125	125	120	124	120	124
Volume (vphpl)	162	123	192	163	148	178	282	240	127	232	45	78	44	35	193	331	227	279
95th %. Queue (veh/ln.)	14	9	17	11	9	11	15	14	10	18	4	6	4	3	11	17	12	15
95th %. Queue (ft./ln) [2]	350	225	425	275	225	275	375	350	250	450	100	150	100	75	275	425	300	375
Storage (ft./ ln.)	425	425	450	450	325	325	400	400	525	525	250	250	200	200	550	550	435	435
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project																		
Cycle/Delay [1] (sec)	205	150	205	150	125	135	125	135	170	190	125	125	125	125	120	124	120	124
Volume (vphpl)	163	124	196	166	149	180	285	242	128	233	62	89	61	58	197	337	228	280
95th %. Queue (veh/ln.)	15	9	17	11	9	11	15	14	10	18	5	6	5	5	11	17	12	15
95th %. Queue (ft./ln) [2]	375	225	425	275	225	275	375	350	250	450	125	150	125	125	275	425	300	375
Storage (ft./ ln.)	425	425	450	450	325	325	400	400	525	525	250	250	200	200	550	550	435	435
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes:
NBL = northbound left movement; SBL = southbound left movement; EBL = eastbound left movement;WBL = westbound left movement
[1] Vehicle queue calculations based on cycle length for signalized intersections.
[2] Assumes 25 Feet Per Vehicle Queued.

Pedestrian, Bicycle, and Transit Analysis

All new development projects in Cupertino should encourage multi-modal travel, consistent with the goals of the City's General Plan. It is the goal of the General Plan that all development projects accommodate and encourage the use of non-automobile transportation modes to achieve Cupertino's mobility goals and reduce travel demand and vehicle miles traveled. The newly adopted Pedestrian Transportation Plan establishes initiatives to foster a safe walking environment that promotes active living and connects to the other modes of transportation within the network. The adopted City Bicycle Transportation Plan establishes goals, policies and actions to make bicycling a daily part of life in Cupertino. The transportation plans include walk audits, traffic calming practices, a separated bikeways network, designated bike boulevards along neighborhood streets, and a Cupertino Loop Trail providing access around Cupertino separated from vehicular traffic. In order to further the goals of the City, pedestrian and bicycle facilities should be encouraged with new development projects.

Pedestrian Facilities

Pedestrian facilities in the study area consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections (see Chapter 2 for details). The project is expected to increase the number of pedestrians using the sidewalks and crosswalks in the area. Project plans show existing sidewalks of approximately 8 feet in width backed by landscaping along its Wolfe Road frontage. The project would also construct a new 5-foot wide sidewalk along the southern frontage of the site. Although some sidewalk and crosswalk connections are missing along Pruneridge Avenue, the overall network of sidewalks and crosswalks in the study area has adequate connectivity and provides pedestrians with safe routes to transit services and other points of interest. Note that the project would not remove any pedestrian facilities, nor would it conflict with any adopted plans or policies for new pedestrian facilities.

Bicycle Facilities

There are some existing bike facilities in the immediate vicinity of the project site (see Chapter 2 for details). There are also many planned additional bicycle facilities in the study area, including buffered bike lanes along Wolfe Road, Homestead Road, and De Anza Boulevard, as well as developing a Class I bikeway along Blaney Avenue and the Cupertino Loop Trail south of I-280. The project would not remove any bicycle facilities, nor would it conflict with any adopted plans or policies for new bicycle facilities.

It should be noted that the VTA, in cooperation with the City of Cupertino and Caltrans, has plans to modify the Wolfe Road/I-280 interchange to improve traffic operations. The improvement project would include upgrading the existing pedestrian facilities and bicycle facilities at the interchange intersections, as well as modifying the existing on/off-ramps and widening the overcrossing.

Transit Services

The project site is well-served by VTA bus routes. The closest bus stops are located a two-minute walk (about 500 feet) to and from the project site, providing access to local bus routes 26 and 81. Additional bus routes are available at the Vallco Shopping Center Park & Ride Lot, located about a mile south of the project site (see Chapter 2 for details), and Bus Route 26 provides direct access to Vallco Shopping Center The new transit trips generated by the project are not expected to create demand in excess of the transit service that is currently provided.

An evaluation of the effects of project traffic on transit vehicle delay also was completed. The analysis was completed for all transit routes that travel through the study intersections, utilizing information produced by the intersection level of service analysis. The analysis shows that the project would increase delay to some transit vehicles and result in a decrease in delay to other transit vehicles (see Table 13). The small increases in transit delay experienced by the bus routes that operate within the study area would be imperceptible. The small decreases in delay are attributed to the fact that the addition of project traffic sometimes causes a reallocation of green time, which causes a “reallocation” of delays. The VTA has not established policies or significance criteria related to transit vehicle delay. Therefore, this data is presented for informational purposes.

Table 13
Transit Delay Analysis Summary

Bus Route	Approx. Travel Time[1] min / sec	Background Delay in Study Area (sec) [2]	Background Plus Project Delay in Study Area (sec) [2]	Background Plus Project Change in Delay (sec)	Background Plus Project % Change
Route 22					
Eastbound AM	116 / 6,960	88.5	88.9	0.4	0.01%
Eastbound PM	156 / 9,360	41.6	41.8	0.2	0.00%
Westbound AM	138 / 8,280	68.2	68.2	0.0	0.00%
Westbound PM	127 / 7,620	34.9	34.9	0.0	0.00%
Route 23					
Northbound AM	62 / 3,720	33.3	33.3	0.0	0.00%
Northbound PM	61 / 3,660	32.4	32.3	-0.1	0.00%
Southbound AM	85 / 5,100	42.2	42.3	0.1	0.00%
Southbound PM	88 / 5,280	46.3	46.3	0.0	0.00%
Route 26					
Northbound AM	107 / 6,420	278.1	281.1	3.0	0.04%
Northbound PM	122 / 7,320	312.7	313.7	1.0	0.01%
Southbound AM	119 / 7,140	239.2	240.3	1.1	0.01%
Southbound PM	119 / 7,140	229.8	232.4	2.6	0.04%
Route 55					
Northbound AM	61 / 3,660	21.1	21.2	0.1	0.00%
Northbound PM	67 / 4,020	14.1	14.1	0.0	0.00%
Southbound AM	60 / 3,600	29.3	29.3	0.0	0.00%
Southbound PM	63 / 3,780	24.1	24.1	0.0	0.00%
Route 81					
Eastbound AM	117 / 7,020	33.3	33.3	0.0	0.00%
Eastbound PM	121 / 7,260	32.4	32.3	-0.1	0.00%
Westbound AM	110 / 6,600	42.2	42.3	0.1	0.00%
Westbound PM	121 / 7,260	46.3	46.3	0.0	0.00%
Route 101					
Northbound AM	75 / 4,500	54.2	54.4	0.2	0.00%
Southbound PM	97 / 5,820	33.0	33.1	0.1	0.00%
Route 182					
Northbound PM	65 / 3,900	56.0	56.2	0.2	0.01%
Southbound AM	62 / 3,720	51.2	51.8	0.6	0.02%
Route 522					
Eastbound AM	96 / 5,760	88.5	88.9	0.4	0.01%
Eastbound PM	128 / 7,680	41.6	41.8	0.2	0.00%
Westbound AM	119 / 7,140	68.2	68.2	0.0	0.00%
Westbound PM	103 / 6,180	34.9	34.9	0.0	0.00%

Notes:

[1] Travel time based on the route's first and last stop. Scheduled times were drawn from VTA's Bus Schedule.

[2] Represents the total movement delay for all relevant study intersections added together.

Cupertino Village Boutique Hotel TIA

Technical Appendices

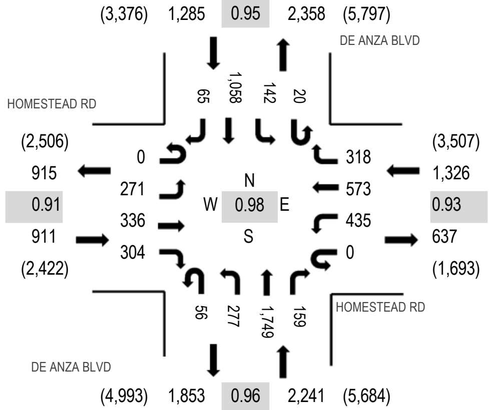
August 30, 2018

Appendix A
New Traffic Counts

(303) 216-2439
www.alltrafficdata.net

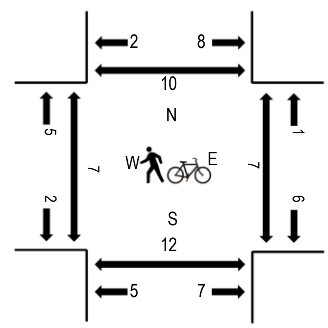
Location: 1 DE ANZA BLVD & HOMESTEAD RD AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	DE ANZA BLVD Northbound U-Turn	Left	Thru	Right	DE ANZA BLVD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	13	28	27	0	36	55	39	5	60	178	24	3	13	130	11	622	3,929	0	0	3	0
7:15 AM	0	22	39	65	2	77	93	59	16	95	200	24	3	23	154	9	881	4,732	1	1	0	2
7:30 AM	0	42	39	72	1	78	116	44	22	80	334	31	4	34	227	22	1,146	5,253	3	0	5	0
7:45 AM	0	89	79	92	0	104	153	75	19	58	353	24	9	26	185	14	1,280	5,580	5	3	1	1
8:00 AM	0	67	81	76	0	111	115	57	13	71	448	54	4	31	283	14	1,425	5,763	0	1	3	2
8:15 AM	0	54	78	65	0	97	127	76	12	67	455	34	8	30	283	16	1,402	5,739	0	3	1	3
8:30 AM	0	76	104	86	0	127	180	85	19	73	388	40	5	36	240	14	1,473	5,755	5	0	3	2
8:45 AM	0	74	73	77	0	100	151	100	12	66	458	31	3	45	252	21	1,463	5,563	2	3	4	3
9:00 AM	2	56	91	77	1	102	155	121	15	76	349	31	6	43	251	25	1,401	5,297	4	8	7	5
9:15 AM	1	55	95	102	1	117	122	92	21	78	382	54	4	36	237	21	1,418		4	0	2	2
9:30 AM	2	49	85	88	1	107	95	64	15	52	373	43	7	27	247	26	1,281		5	0	4	2
9:45 AM	2	45	81	73	0	123	89	59	16	61	302	52	8	28	240	18	1,197		4	3	4	3

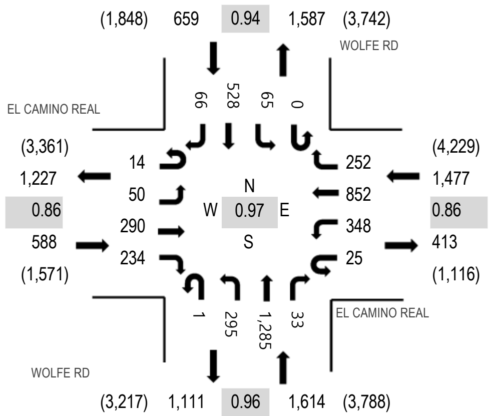
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	1	0	3	1	0	0	1	0	0	0	0	5	0	11
Lights	0	271	328	299	0	422	561	316	55	274	1,727	157	20	141	1,041	65	5,677
Mediums	0	0	8	4	0	10	11	2	1	2	22	2	0	1	12	0	75
Total	0	271	336	304	0	435	573	318	56	277	1,749	159	20	142	1,058	65	5,763

Location: 2 WOLFE RD & EL CAMINO REAL AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:30 AM - 09:30 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

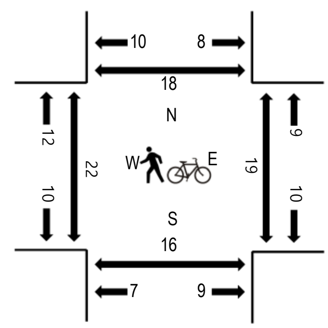
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound U-Turn	Left	Thru	Right	EL CAMINO REAL Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	1	4	50	29	2	76	135	27	0	33	92	1	0	13	92	9	564	3,203	2	0	0	2
7:15 AM	1	10	32	33	2	80	167	45	0	47	126	3	0	17	120	5	688	3,623	2	2	1	4
7:30 AM	1	5	55	45	3	120	233	50	0	70	170	6	0	30	113	12	913	3,940	14	8	10	3
7:45 AM	1	8	42	47	4	121	273	69	0	84	222	5	0	24	124	14	1,038	4,136	2	8	1	6
8:00 AM	4	5	78	52	3	93	218	82	0	66	258	5	0	8	106	6	984	4,217	4	10	3	5
8:15 AM	1	5	61	70	2	94	186	64	0	67	275	5	0	24	139	12	1,005	4,260	3	3	1	5
8:30 AM	7	12	75	60	6	94	207	48	0	80	339	3	0	16	150	12	1,109	4,338	7	1	4	2
8:45 AM	2	4	75	53	3	100	215	71	0	60	351	6	0	18	150	11	1,119	4,227	6	3	2	3
9:00 AM	4	24	82	65	6	89	180	71	1	71	277	13	0	9	114	21	1,027	4,016	3	9	8	5
9:15 AM	1	10	58	56	10	65	250	62	0	84	318	11	0	22	114	22	1,083		5	6	0	6
9:30 AM	0	16	78	63	3	92	177	63	0	59	277	14	0	11	124	21	998		6	2	0	7
9:45 AM	3	21	94	68	3	70	157	38	0	54	223	12	0	13	135	17	908		7	2	2	3

Peak Rolling Hour Flow Rates

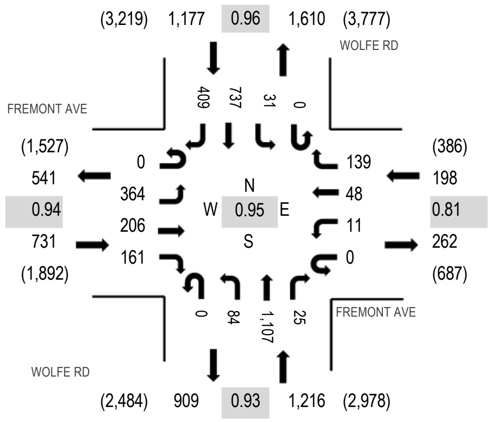
Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	1	6
Lights	14	44	286	228	25	339	834	249	1	292	1,269	33	0	65	517	62	4,258
Mediums	0	6	2	6	0	9	15	3	0	3	16	0	0	0	11	3	74
Total	14	50	290	234	25	348	852	252	1	295	1,285	33	0	65	528	66	4,338

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

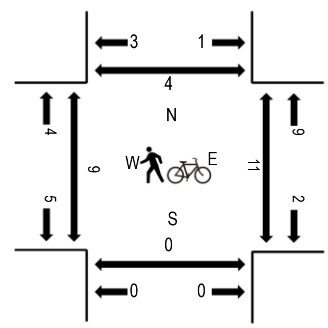
Location: 3 WOLFE RD & FREMONT AVE AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	FREMONT AVE Eastbound U-Turn	Left	Thru	Right	FREMONT AVE Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	1	28	21	17	0	0	6	4	0	24	82	7	0	4	102	91	387	2,285	3	0	0	1
7:15 AM	3	44	33	32	0	4	13	10	0	28	117	3	0	7	132	97	523	2,614	1	0	0	0
7:30 AM	1	70	51	42	0	1	6	13	0	41	200	8	0	16	177	83	709	2,884	0	5	0	0
7:45 AM	0	74	36	38	0	2	9	15	0	24	172	3	0	25	143	125	666	3,047	0	2	0	1
8:00 AM	0	80	45	40	0	2	6	24	0	29	226	8	0	4	142	110	716	3,236	2	2	0	3
8:15 AM	0	81	50	52	0	1	10	21	0	15	248	9	0	11	182	113	793	3,322	1	4	0	2
8:30 AM	0	93	58	46	0	0	13	38	0	25	291	3	0	11	189	105	872	3,230	2	1	0	0
8:45 AM	0	98	54	41	0	4	17	44	0	22	268	7	0	5	183	112	855	3,103	3	2	0	0
9:00 AM	0	92	44	22	0	6	8	36	0	22	300	6	0	4	183	79	802	2,954	3	3	0	1
9:15 AM	0	80	51	41	0	1	6	37	0	23	224	3	0	0	169	66	701		1	2	0	2
9:30 AM	2	108	41	45	0	0	3	13	0	24	225	6	0	5	207	66	745		2	2	0	2
9:45 AM	0	72	31	34	0	0	2	11	0	34	238	13	0	4	204	63	706		4	0	0	1

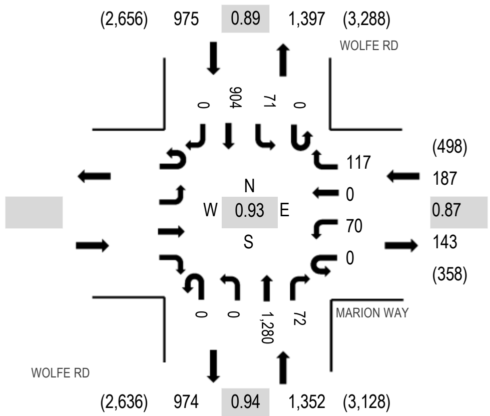
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	1	5
Lights	0	362	201	155	0	11	47	138	0	84	1,089	24	0	30	718	397	3,256
Mediums	0	2	4	6	0	0	1	1	0	0	16	1	0	1	18	11	61
Total	0	364	206	161	0	11	48	139	0	84	1,107	25	0	31	737	409	3,322

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

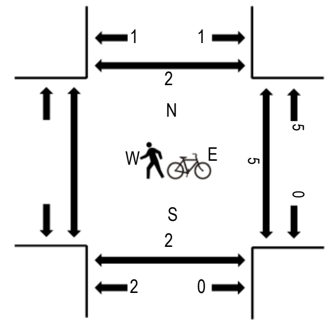
Location: 4 WOLFE RD & MARION WAY AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	MARION WAY Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	WOLFE RD Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	WOLFE RD Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM					0	4	0	9	0	0	122	2	0	11	130	0	278	1,614	1	0	0
7:15 AM					0	7	0	19	0	0	134	18	0	12	148	0	338	1,867	0	1	1
7:30 AM					0	19	0	40	0	0	200	24	0	40	189	0	512	2,132	1	0	0
7:45 AM					0	12	0	28	0	0	224	11	0	14	197	0	486	2,295	0	0	0
8:00 AM					0	17	0	44	0	0	238	6	0	10	216	0	531	2,447	0	0	0
8:15 AM					0	17	0	35	0	0	310	7	0	14	220	0	603	2,514	2	2	0
8:30 AM					0	16	0	32	0	0	337	15	0	18	257	0	675	2,470	1	0	1
8:45 AM					0	18	0	22	0	0	328	31	0	25	214	0	638	2,329	0	0	0
9:00 AM					0	19	0	28	0	0	305	19	0	14	213	0	598	2,221	0	0	1
9:15 AM					0	23	0	31	0	0	249	13	0	10	233	0	559		0	0	2
9:30 AM					0	19	0	19	0	0	261	2	0	16	217	0	534		1	0	1
9:45 AM					0	4	0	16	0	0	257	15	0	11	227	0	530		0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	0	0	0	0	0	3	0	0	0	1	0	4
Lights					0	70	0	117	0	0	1,250	72	0	71	877	0	2,457
Mediums					0	0	0	0	0	0	27	0	0	0	26	0	53
Total					0	70	0	117	0	0	1,280	72	0	71	904	0	2,514

All Traffic Data Services Inc.
(303) 216-2439
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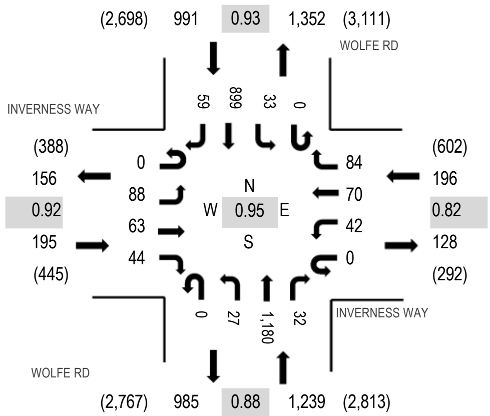
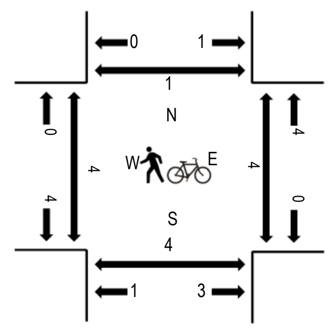
Location: 5 WOLFE RD & INVERNESS WAY AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	INVERNESS WAY Eastbound U-Turn	Left	Thru	Right	INVERNESS WAY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	5	4	5	0	12	1	7	0	0	98	6	0	2	140	3	283	1,701	0	0	0	0
7:15 AM	0	4	2	6	0	17	15	20	0	1	138	6	0	1	160	4	374	2,006	1	0	0	0
7:30 AM	0	18	11	11	0	30	17	32	0	2	204	12	0	8	201	12	558	2,270	1	1	0	0
7:45 AM	0	15	7	11	0	19	13	26	0	3	169	11	0	7	200	5	486	2,399	1	0	0	0
8:00 AM	0	17	12	9	0	16	25	28	0	5	218	6	0	10	226	16	588	2,585	2	2	1	2
8:15 AM	0	26	12	11	0	12	19	21	0	4	286	4	0	9	220	14	638	2,621	0	2	1	0
8:30 AM	0	19	20	11	0	12	18	25	0	10	333	9	0	12	209	9	687	2,528	1	0	1	0
8:45 AM	0	21	18	14	0	8	15	28	0	4	284	11	0	7	236	26	672	2,396	0	2	2	0
9:00 AM	0	22	13	8	0	10	18	10	0	9	277	8	0	5	234	10	624	2,272	1	0	0	1
9:15 AM	0	21	8	8	0	13	18	20	0	4	217	2	0	3	217	14	545		0	0	1	2
9:30 AM	0	23	7	12	0	12	14	13	0	10	211	4	0	5	227	17	555		1	0	0	0
9:45 AM	0	11	10	13	0	11	15	12	0	6	232	9	0	11	206	12	548		1	0	1	0

Peak Rolling Hour Flow Rates

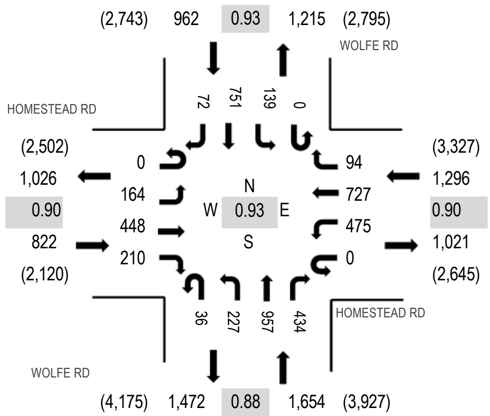
Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4
Lights	0	88	63	42	0	42	70	84	0	27	1,151	31	0	31	870	59	2,558
Mediums	0	0	0	2	0	0	0	0	0	0	27	1	0	2	27	0	59
Total	0	88	63	44	0	42	70	84	0	27	1,180	32	0	33	899	59	2,621

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

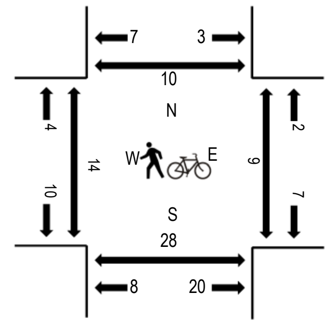
Location: 6 WOLFE RD & HOMESTEAD RD AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	7	50	24	0	77	82	8	8	20	87	44	0	18	125	12	562	3,269	0	0	6	1
7:15 AM	0	16	50	40	0	95	138	17	9	32	121	69	0	18	159	10	774	3,820	1	0	2	2
7:30 AM	0	24	90	48	0	121	173	15	6	37	161	65	0	24	175	12	951	4,140	1	1	0	1
7:45 AM	0	14	96	45	0	105	154	10	5	41	161	110	0	23	199	19	982	4,460	2	1	1	1
8:00 AM	1	23	112	64	0	119	139	12	7	39	216	112	0	31	219	19	1,113	4,733	2	1	1	2
8:15 AM	0	42	98	49	0	122	155	16	7	57	213	115	0	37	166	17	1,094	4,734	1	0	5	1
8:30 AM	0	43	116	64	0	131	168	29	13	61	285	114	0	33	199	15	1,271	4,715	5	3	5	6
8:45 AM	0	42	113	52	0	126	211	23	4	64	232	117	0	37	208	26	1,255	4,402	4	0	10	2
9:00 AM	0	37	121	45	0	96	193	26	12	45	227	88	0	32	178	14	1,114	4,115	2	5	4	1
9:15 AM	0	26	141	75	0	101	163	23	7	29	172	88	0	28	203	19	1,075		1	1	8	1
9:30 AM	0	33	99	40	0	88	113	25	10	41	177	97	0	27	192	16	958		4	7	11	1
9:45 AM	0	31	107	42	0	104	122	27	7	28	174	93	0	32	184	17	968		3	0	8	0

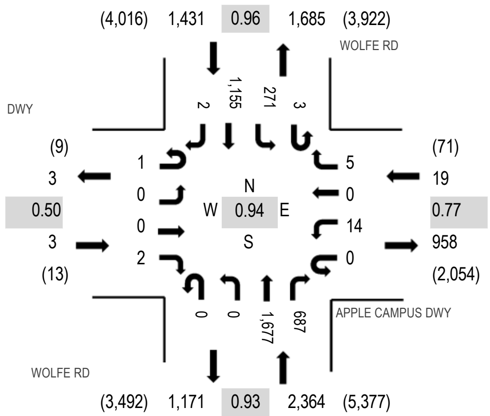
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	1	0	1	0	0	0	0	2	2	0	0	2	0	8
Lights	0	163	443	200	0	469	714	91	36	224	938	391	0	135	732	70	4,606
Mediums	0	1	5	9	0	5	13	3	0	3	17	41	0	4	17	2	120
Total	0	164	448	210	0	475	727	94	36	227	957	434	0	139	751	72	4,734

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

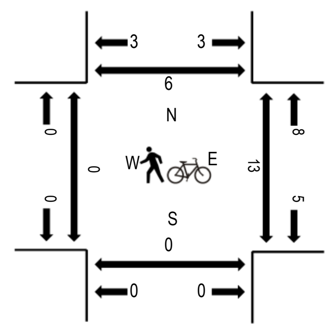
Location: 7 WOLFE RD & APPLE CAMPUS DWY AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DWY Eastbound U-Turn	Left	Thru	Right	APPLE CAMPUS DWY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	0	0	0	0	2	0	4	0	0	171	46	0	11	203	0	437	2,406	0	2	0	0
7:15 AM	0	0	0	0	0	4	0	0	0	0	204	54	3	17	234	1	517	2,812	0	2	0	2
7:30 AM	0	0	0	2	0	3	0	0	0	0	287	81	0	17	327	0	717	3,193	0	6	0	1
7:45 AM	0	0	0	0	0	2	0	0	0	0	285	89	0	40	319	0	735	3,485	0	3	0	1
8:00 AM	0	0	0	1	0	1	0	2	0	0	352	119	1	35	331	1	843	3,770	0	4	0	1
8:15 AM	0	0	0	1	0	3	0	0	0	0	416	123	0	58	297	0	898	3,817	0	7	0	2
8:30 AM	0	0	0	0	0	2	0	1	0	0	438	181	1	84	300	2	1,009	3,760	0	0	0	1
8:45 AM	0	0	0	1	0	4	0	3	0	0	423	212	2	83	292	0	1,020	3,541	0	3	0	2
9:00 AM	1	0	0	0	0	5	0	1	0	0	400	171	0	46	266	0	890	3,301	0	3	0	1
9:15 AM	0	0	0	0	1	7	0	1	0	0	287	149	5	82	308	1	841		0	6	0	0
9:30 AM	0	0	0	3	0	11	0	2	0	0	308	144	2	48	271	1	790		0	3	0	4
9:45 AM	0	0	0	4	0	10	0	2	0	0	319	118	2	45	278	2	780		0	0	0	1

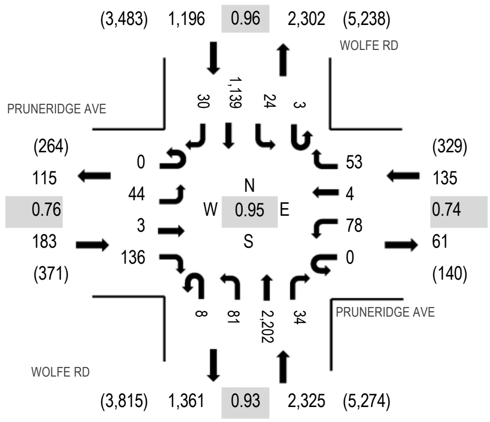
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	8
Lights	1	0	0	2	0	14	0	4	0	0	1,607	687	3	271	1,120	2	3,711
Mediums	0	0	0	0	0	0	0	1	0	0	66	0	0	0	31	0	98
Total	1	0	0	2	0	14	0	5	0	0	1,677	687	3	271	1,155	2	3,817

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

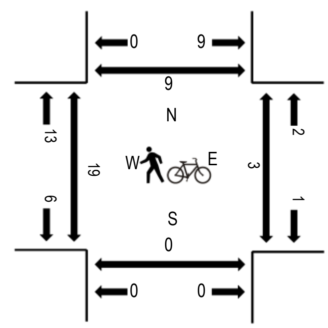
Location: 8 WOLFE RD & PRUNERIDGE AVE AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	PRUNERIDGE AVE Eastbound U-Turn	Left	Thru	Right	PRUNERIDGE AVE Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	2	1	6	0	2	1	6	1	9	201	4	0	1	188	3	425	2,410	0	0	0	2
7:15 AM	0	4	0	15	0	7	1	5	0	11	252	2	1	3	224	3	528	2,784	3	0	0	1
7:30 AM	0	6	0	17	0	12	1	7	1	10	322	2	2	6	321	4	711	3,159	2	2	0	3
7:45 AM	0	5	0	16	0	19	0	17	2	9	351	4	0	2	311	10	746	3,454	0	2	0	3
8:00 AM	0	6	0	25	0	7	0	24	1	10	410	6	0	8	297	5	799	3,690	0	0	0	2
8:15 AM	0	13	0	47	0	10	2	15	3	16	481	7	1	10	292	6	903	3,839	2	0	0	3
8:30 AM	0	11	2	33	0	18	1	9	2	19	585	11	0	5	296	14	1,006	3,743	9	2	0	1
8:45 AM	0	9	0	29	0	32	0	15	2	32	579	9	1	5	262	7	982	3,515	4	0	0	3
9:00 AM	0	11	1	27	0	18	1	14	1	14	557	7	1	4	289	3	948	3,357	4	1	0	1
9:15 AM	0	5	0	20	0	21	0	9	1	17	424	11	0	7	286	6	807		2	2	0	3
9:30 AM	0	12	1	18	0	19	0	11	2	20	397	9	1	4	282	2	778		1	4	0	1
9:45 AM	0	9	0	20	0	10	3	12	1	22	433	4	2	4	302	2	824		0	3	0	5

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0	8
Lights	0	44	3	134	0	78	4	53	8	80	2,139	34	3	24	1,109	30	3,743
Mediums	0	0	0	2	0	0	0	0	0	1	58	0	0	0	27	0	88
Total	0	44	3	136	0	78	4	53	8	81	2,202	34	3	24	1,139	30	3,839

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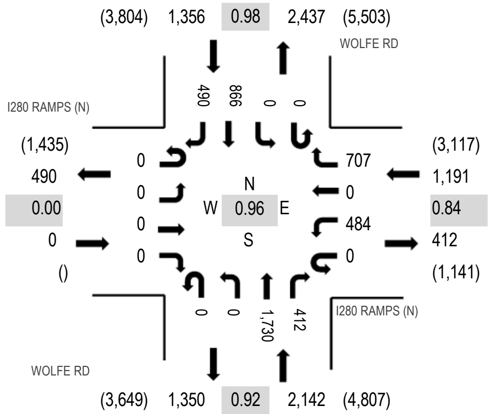
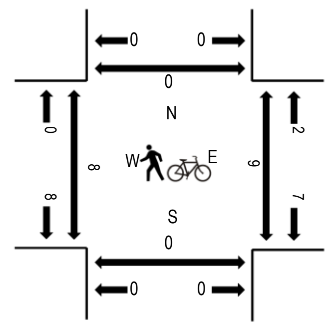
Location: 9 WOLFE RD & I280 RAMPS (N) AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (N) Eastbound U-Turn	Left	Thru	Right	I280 RAMPS (N) Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	0	0	0	0	63	0	120	0	0	115	57	0	0	111	85	551	2,970	0	1	0	0
7:15 AM	0	0	0	0	0	57	0	72	0	0	183	68	0	0	159	87	626	3,384	1	1	0	0
7:30 AM	0	0	0	0	0	50	0	103	0	0	245	118	0	0	185	165	866	3,866	1	1	0	0
7:45 AM	0	0	0	0	0	68	0	130	0	0	266	115	0	0	223	125	927	4,220	0	2	0	0
8:00 AM	0	0	0	0	0	72	0	136	0	0	314	114	0	0	216	113	965	4,510	0	1	0	0
8:15 AM	0	0	0	0	0	97	0	143	0	0	414	105	0	0	256	93	1,108	4,689	1	1	0	0
8:30 AM	0	0	0	0	0	116	0	179	0	0	462	115	0	0	204	144	1,220	4,594	0	3	0	0
8:45 AM	0	0	0	0	0	125	0	187	0	0	491	89	0	0	207	118	1,217	4,375	0	2	0	0
9:00 AM	0	0	0	0	0	146	0	198	0	0	363	103	0	0	199	135	1,144	4,248	2	3	0	0
9:15 AM	0	0	0	0	0	145	0	169	0	0	299	72	0	0	215	113	1,013		1	3	0	0
9:30 AM	0	0	0	0	0	141	0	186	0	0	253	102	0	0	183	136	1,001		0	1	0	0
9:45 AM	0	0	0	0	0	200	0	214	0	0	261	83	0	0	211	121	1,090		1	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	4	1	0	0	0	3	10
Lights	0	0	0	0	0	476	0	691	0	0	1,673	375	0	0	842	479	4,536
Mediums	0	0	0	0	0	7	0	15	0	0	53	36	0	0	24	8	143
Total	0	0	0	0	0	484	0	707	0	0	1,730	412	0	0	866	490	4,689

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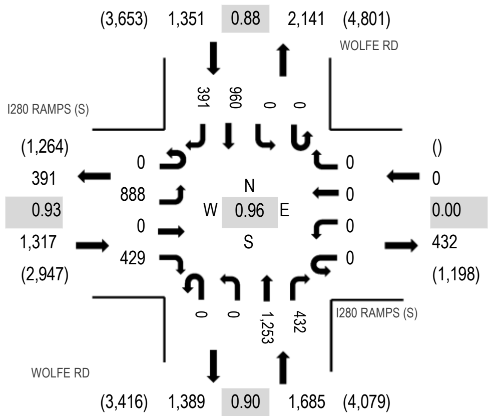
Location: 10 WOLFE RD & I280 RAMPS (S) AM

Date and Start Time: Wednesday, March 28, 2018

Peak Hour: 08:15 AM - 09:15 AM

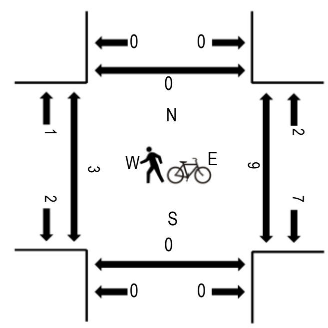
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (S) Eastbound U-Turn	Left	Thru	Right	I280 RAMPS (S) Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	63	0	33	0	0	0	0	0	0	109	89	0	0	95	80	469	2,709	0	0	0	0
7:15 AM	0	88	0	49	0	0	0	0	0	0	163	88	0	0	110	106	604	3,127	1	3	0	0
7:30 AM	0	123	0	63	0	0	0	0	0	0	240	120	0	0	117	118	781	3,605	1	2	0	0
7:45 AM	0	140	0	61	0	0	0	0	0	0	241	122	0	0	162	129	855	3,951	0	3	0	0
8:00 AM	0	172	0	69	0	0	0	0	0	0	256	102	0	0	186	102	887	4,229	0	1	0	0
8:15 AM	0	223	0	103	0	0	0	0	0	0	296	106	0	0	247	107	1,082	4,353	0	1	0	0
8:30 AM	0	234	0	104	0	0	0	0	0	0	342	127	0	0	224	96	1,127	4,198	3	1	0	0
8:45 AM	0	231	0	123	0	0	0	0	0	0	349	98	0	0	238	94	1,133	3,933	0	2	0	0
9:00 AM	0	200	0	99	0	0	0	0	0	0	266	101	0	0	251	94	1,011	3,741	0	5	0	0
9:15 AM	0	160	0	119	0	0	0	0	0	0	210	77	0	0	229	132	927		3	3	0	0
9:30 AM	0	140	0	100	0	0	0	0	0	0	213	84	0	0	228	97	862		0	1	0	0
9:45 AM	0	146	0	104	0	0	0	0	0	0	196	84	0	0	302	109	941		3	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	2	0	0	0	0	0	0	0	0	3	4	0	0	1	0	10
Lights	0	838	0	413	0	0	0	0	0	0	1,210	383	0	0	938	380	4,162
Mediums	0	48	0	16	0	0	0	0	0	0	40	45	0	0	21	11	181
Total	0	888	0	429	0	0	0	0	0	0	1,253	432	0	0	960	391	4,353

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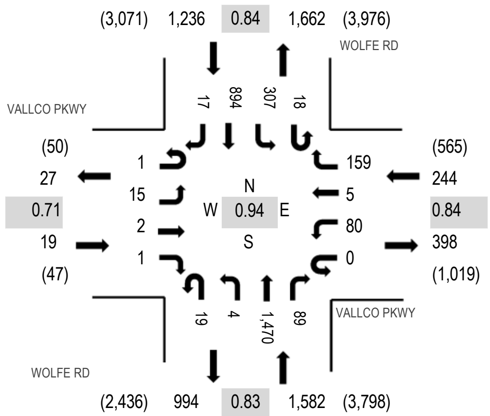
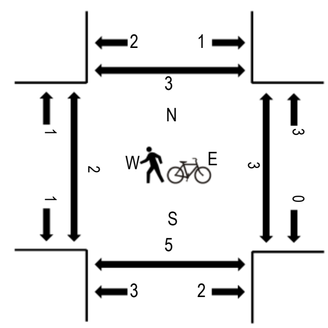
Location: 11 WOLFE RD & VALLCO PKWY AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	VALLCO PKWY Eastbound U-Turn	Left	Thru	Right	VALLCO PKWY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	0	0	0	0	6	0	15	2	0	131	3	4	28	84	0	273	1,789	0	0	1	0
7:15 AM	0	3	2	0	0	11	0	30	0	0	181	11	1	17	114	2	372	2,134	1	0	2	0
7:30 AM	0	2	1	0	0	11	0	19	2	1	322	36	1	45	127	1	568	2,531	1	5	1	2
7:45 AM	0	2	1	0	0	7	0	26	4	0	308	12	1	33	182	0	576	2,782	1	1	1	0
8:00 AM	0	5	0	0	0	14	1	36	2	0	299	15	3	48	194	1	618	3,009	0	0	0	0
8:15 AM	0	4	0	0	0	25	2	29	4	0	355	18	3	57	263	9	769	3,081	1	0	1	0
8:30 AM	0	3	0	0	0	14	2	34	5	1	453	20	4	71	206	6	819	2,965	0	1	2	3
8:45 AM	1	2	1	1	0	27	1	45	6	2	377	28	4	93	213	2	803	2,793	1	2	1	0
9:00 AM	0	6	1	0	0	14	0	51	4	1	285	23	7	86	212	0	690	2,683	0	0	0	0
9:15 AM	0	2	0	0	0	11	0	31	1	0	279	25	1	86	213	4	653		2	2	0	1
9:30 AM	0	4	1	1	0	13	0	42	6	0	283	27	1	80	186	3	647		2	1	1	1
9:45 AM	0	2	2	0	0	12	3	33	3	0	240	23	7	125	236	7	693		6	1	5	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	1	1	0	5	0	0	0	1	0	8
Lights	1	15	2	1	0	77	5	131	17	4	1,438	81	17	294	867	17	2,967
Mediums	0	0	0	0	0	3	0	27	1	0	27	8	1	13	26	0	106
Total	1	15	2	1	0	80	5	159	19	4	1,470	89	18	307	894	17	3,081

Location: 12 WOLFE RD & STEVENS CREEK BLVD AM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

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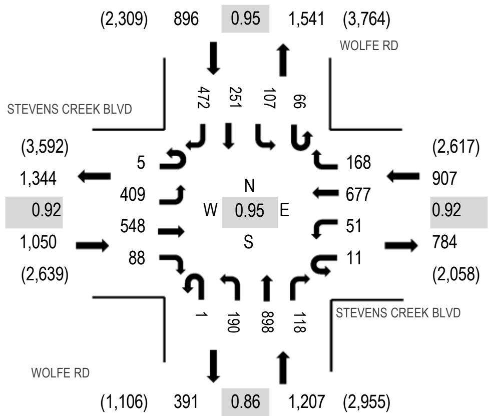
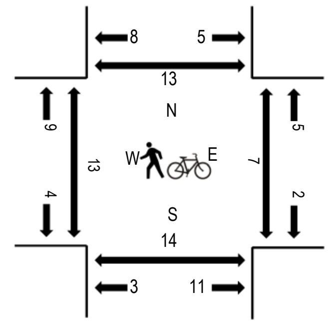
Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	STEVENS CREEK BLVD Eastbound U-Turn	Left	Thru	Right	STEVENS CREEK BLVD Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	1	33	46	9	1	4	73	22	0	20	70	8	7	21	24	40	379	2,856	3	1	2	0
7:15 AM	1	33	156	33	0	25	122	52	0	23	99	13	11	24	35	50	677	3,317	0	2	13	3
7:30 AM	2	51	101	17	2	34	176	52	0	55	242	32	11	13	64	65	917	3,635	4	4	5	6
7:45 AM	3	56	83	15	1	13	212	38	0	49	215	22	10	27	63	76	883	3,769	5	1	5	3
8:00 AM	1	72	89	21	1	18	143	35	0	59	199	8	17	22	65	90	840	3,957	2	0	3	0
8:15 AM	0	72	130	27	1	15	193	41	0	37	218	26	18	22	96	99	995	4,060	3	0	1	0
8:30 AM	0	123	154	15	2	12	137	47	0	38	281	35	11	30	53	113	1,051	3,957	3	1	1	7
8:45 AM	1	105	133	29	5	18	206	39	0	59	234	30	20	31	55	106	1,071	3,910	1	3	3	1
9:00 AM	4	109	131	17	3	6	141	41	1	56	165	27	17	24	47	154	943	3,707	6	3	8	5
9:15 AM	2	87	152	16	2	14	151	54	0	35	145	20	15	36	54	109	892		5	1	5	9
9:30 AM	1	97	168	27	0	18	181	44	0	42	178	25	10	29	55	129	1,004		4	9	10	6
9:45 AM	0	79	122	15	0	14	157	51	0	37	127	25	11	25	62	143	868		3	1	4	10

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	3	3	0	0	1	3	1	0	0	0	1	0	0	0	2	14
Lights	5	395	529	88	11	47	653	155	1	186	889	117	66	103	243	455	3,943
Mediums	0	11	16	0	0	3	21	12	0	4	9	0	0	4	8	15	103
Total	5	409	548	88	11	51	677	168	1	190	898	118	66	107	251	472	4,060

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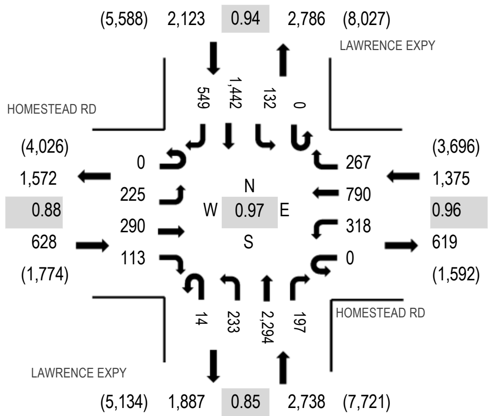
Location: 13 LAWRENCE EXPY & HOMESTEAD RD AM

Date and Start Time: Wednesday, March 28, 2018

Peak Hour: 08:00 AM - 09:00 AM

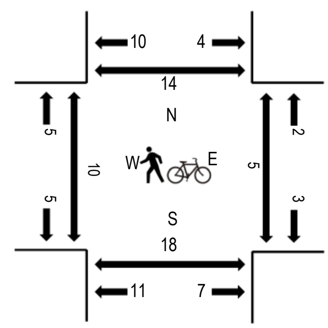
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	LAWRENCE EXPY Northbound U-Turn	Left	Thru	Right	LAWRENCE EXPY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	36	25	14	0	71	113	41	0	24	410	26	0	17	216	53	1,046	5,501	4	1	0	1
7:15 AM	0	32	36	25	0	83	185	67	3	57	410	22	1	17	243	79	1,260	6,154	1	1	1	0
7:30 AM	0	65	45	25	0	79	166	77	1	60	547	41	0	18	380	100	1,604	6,672	0	5	4	0
7:45 AM	0	49	63	33	0	90	180	69	2	46	557	39	0	25	322	116	1,591	6,803	0	0	2	1
8:00 AM	0	68	68	23	0	92	171	68	6	65	650	37	0	49	295	107	1,699	6,864	0	1	2	3
8:15 AM	0	63	78	31	0	82	206	71	3	44	584	50	0	54	378	134	1,778	6,855	3	0	3	2
8:30 AM	0	44	73	33	0	78	190	71	2	54	586	48	0	18	386	152	1,735	6,651	4	1	6	8
8:45 AM	0	50	71	26	0	66	223	57	3	70	474	62	0	11	383	156	1,652	6,522	3	3	7	1
9:00 AM	0	45	72	29	0	52	196	56	0	63	719	46	1	20	263	128	1,690	6,414	3	0	3	1
9:15 AM	0	78	86	35	0	79	159	51	1	49	528	34	1	23	318	132	1,574		2	1	4	2
9:30 AM	1	68	90	23	0	71	143	56	1	27	558	47	0	26	364	131	1,606		3	0	5	1
9:45 AM	1	62	67	41	0	50	98	89	4	34	568	59	0	29	329	113	1,544		0	1	3	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	2	1	0	0	0	0	2	0	0	1	1	0	0	6	0	13
Lights	0	223	285	111	0	317	782	260	14	231	2,286	193	0	127	1,418	529	6,776
Mediums	0	0	4	2	0	1	8	5	0	2	7	3	0	5	18	20	75
Total	0	225	290	113	0	318	790	267	14	233	2,294	197	0	132	1,442	549	6,864

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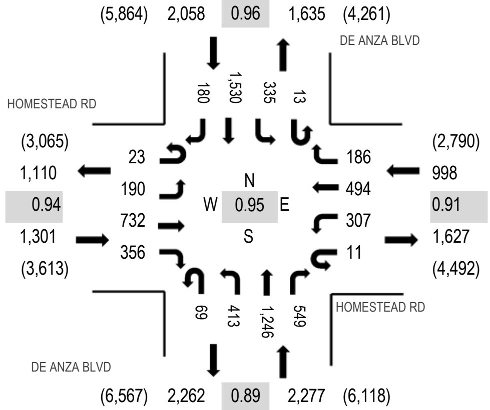
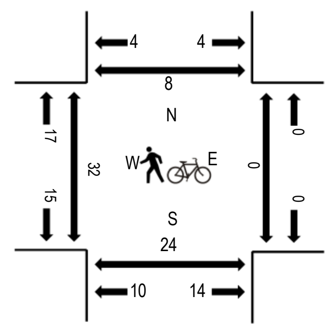
Location: 1 DE ANZA BLVD & HOMESTEAD RD PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:45 PM - 06:45 PM
Peak 15-Minutes: 06:15 PM - 06:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	DE ANZA BLVD Northbound U-Turn	Left	Thru	Right	DE ANZA BLVD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	5	30	140	75	0	73	61	44	20	76	237	126	8	58	372	21	1,346	5,661	5	0	2	0
4:15 PM	7	55	149	73	1	71	109	32	20	75	188	111	3	47	402	42	1,385	5,806	1	0	2	1
4:30 PM	2	42	169	82	4	72	97	41	22	93	228	108	2	61	393	32	1,448	6,015	8	0	12	0
4:45 PM	6	46	178	66	4	62	114	49	20	108	225	113	7	56	406	22	1,482	6,126	3	0	3	5
5:00 PM	1	31	185	92	5	53	111	35	21	111	237	145	5	70	358	31	1,491	6,258	5	3	5	1
5:15 PM	5	52	165	63	1	65	122	49	23	97	271	133	6	81	421	40	1,594	6,441	3	0	5	0
5:30 PM	5	44	186	61	1	75	157	53	20	117	239	135	4	93	339	30	1,559	6,590	1	1	6	3
5:45 PM	5	40	157	79	1	75	136	35	15	125	287	136	3	105	365	50	1,614	6,634	14	0	1	2
6:00 PM	8	49	208	82	5	73	130	58	18	87	331	136	6	77	361	45	1,674	6,466	2	0	12	1
6:15 PM	9	43	195	102	1	76	113	49	21	101	366	157	2	74	403	31	1,743		4	0	5	0
6:30 PM	1	58	172	93	4	83	115	44	15	100	262	120	2	79	401	54	1,603		12	0	6	5
6:45 PM	4	44	162	87	2	66	118	45	21	107	273	121	1	55	311	29	1,446		4	4	9	3

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	23	190	730	352	11	302	490	186	69	413	1,236	539	13	334	1,518	180	6,586
Mediums	0	0	2	4	0	5	4	0	0	0	10	10	0	1	12	0	48
Total	23	190	732	356	11	307	494	186	69	413	1,246	549	13	335	1,530	180	6,634

All Traffic Data Services Inc.

(303) 216-2439
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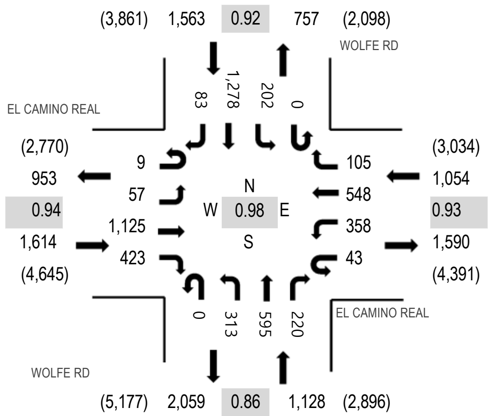
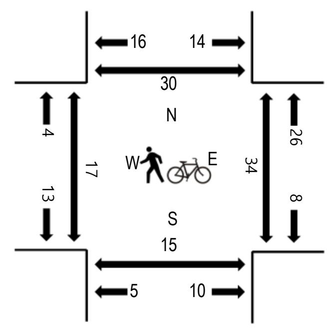
Location: 2 WOLFE RD & EL CAMINO REAL PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	EL CAMINO REAL Eastbound U-Turn	Left	Thru	Right	EL CAMINO REAL Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	8	17	253	103	6	66	129	24	0	66	107	26	0	35	133	22	995	4,289	1	1	0	0
4:15 PM	4	11	263	95	8	61	132	31	0	48	110	19	0	47	218	29	1,076	4,555	1	5	3	5
4:30 PM	3	13	269	101	8	67	110	23	0	70	104	28	0	42	220	22	1,080	4,757	3	5	1	4
4:45 PM	3	22	234	97	7	68	158	23	0	69	106	36	0	55	237	23	1,138	5,045	0	4	0	3
5:00 PM	6	22	291	106	7	78	175	25	0	59	132	62	0	40	237	21	1,261	5,268	5	11	6	9
5:15 PM	4	17	279	99	12	86	125	23	0	63	138	47	0	43	323	19	1,278	5,359	3	6	4	6
5:30 PM	1	10	316	115	12	85	145	24	0	66	157	51	0	38	326	22	1,368	5,311	6	6	7	14
5:45 PM	1	17	262	108	10	83	151	32	0	90	171	69	0	47	297	23	1,361	5,145	5	21	4	5
6:00 PM	3	13	268	101	9	104	127	26	0	94	129	53	0	74	332	19	1,352	4,879	2	0	0	3
6:15 PM	3	22	274	95	12	75	116	42	0	73	138	42	0	47	267	24	1,230		4	3	3	10
6:30 PM	5	14	257	116	14	88	154	35	0	47	138	44	0	50	214	26	1,202		8	2	5	5
6:45 PM	2	15	221	86	12	74	117	35	0	73	132	39	0	53	216	20	1,095		5	2	6	8

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3
Lights	9	56	1,109	420	42	357	540	104	0	313	589	218	0	202	1,271	81	5,311
Mediums	0	1	14	3	1	1	7	1	0	0	6	2	0	0	7	2	45
Total	9	57	1,125	423	43	358	548	105	0	313	595	220	0	202	1,278	83	5,359

All Traffic Data Services Inc.

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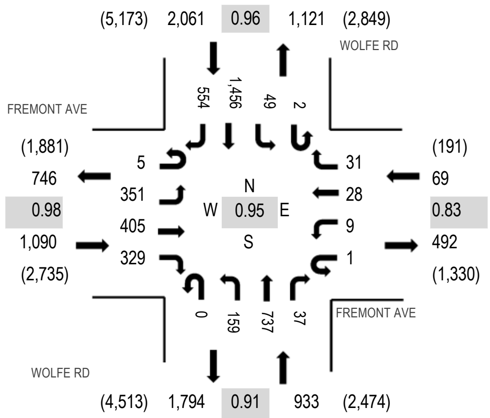
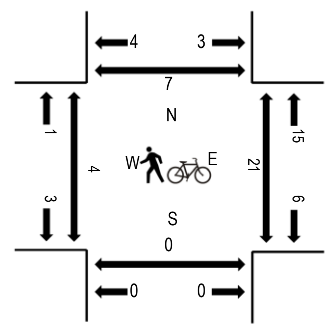
Location: 3 WOLFE RD & FREMONT AVE PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	FREMONT AVE Eastbound U-Turn	Left	Thru	Right	FREMONT AVE Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	1	60	74	60	0	3	6	6	0	25	111	14	0	11	202	88	661	3,070	2	4	0	3
4:15 PM	0	54	68	56	0	0	2	9	0	28	123	15	0	12	293	80	740	3,292	9	4	0	2
4:30 PM	0	65	84	90	0	0	9	5	0	34	152	19	0	7	283	87	835	3,564	2	2	0	0
4:45 PM	2	60	85	90	0	1	8	4	0	28	143	11	1	17	270	114	834	3,822	1	2	0	1
5:00 PM	1	72	74	96	0	2	6	15	0	43	138	16	0	11	291	118	883	3,996	3	4	0	4
5:15 PM	0	82	110	73	1	3	7	12	0	37	170	8	0	9	368	132	1,012	4,153	1	3	0	1
5:30 PM	1	84	97	97	0	1	8	8	0	38	222	12	0	8	381	136	1,093	4,046	3	1	0	4
5:45 PM	3	85	103	82	0	1	3	5	0	41	189	7	1	13	319	156	1,008	3,775	0	16	0	0
6:00 PM	1	100	95	77	0	4	10	6	0	43	156	10	1	19	388	130	1,040	3,507	0	1	0	2
6:15 PM	0	71	80	29	0	0	13	11	0	47	201	20	1	14	306	112	905		0	3	0	1
6:30 PM	2	65	92	25	0	1	10	3	0	25	168	14	0	6	306	105	822		4	2	0	2
6:45 PM	0	65	72	52	0	2	5	1	0	30	124	12	0	10	261	106	740		0	1	0	1

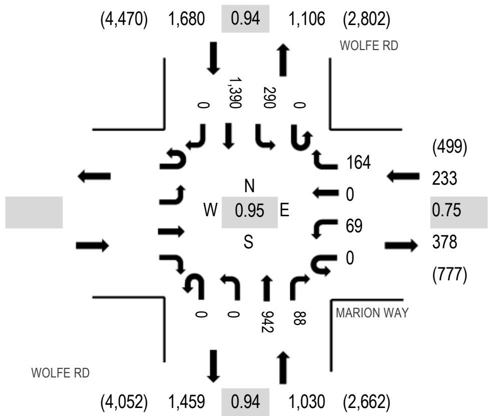
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	5	349	404	328	1	9	28	31	0	158	731	37	1	49	1,450	554	4,135
Mediums	0	2	1	1	0	0	0	0	0	1	6	0	1	0	6	0	18
Total	5	351	405	329	1	9	28	31	0	159	737	37	2	49	1,456	554	4,153

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

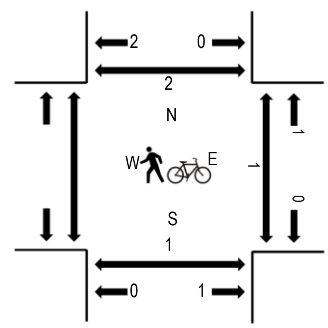
Location: 4 WOLFE RD & MARION WAY PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	MARION WAY Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	WOLFE RD Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	WOLFE RD Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM					0	8	0	15	0	0	171	6	0	20	225	0	445	2,214		0	0	0
4:15 PM					0	11	0	19	0	0	157	14	0	49	310	0	560	2,467		1	0	0
4:30 PM					0	17	0	33	0	0	200	18	0	43	297	0	608	2,617		1	0	0
4:45 PM					0	17	0	23	0	0	172	21	0	39	329	0	601	2,786		1	1	0
5:00 PM					0	7	0	38	0	0	195	23	0	53	382	0	698	2,931		1	1	0
5:15 PM					0	22	0	34	0	0	223	22	0	56	353	0	710	2,943		0	0	0
5:30 PM					0	13	0	31	0	0	257	16	0	78	382	0	777	2,863		0	0	0
5:45 PM					0	16	0	39	0	0	244	30	0	100	317	0	746	2,690		1	0	1
6:00 PM					0	18	0	60	0	0	218	20	0	56	338	0	710	2,486		0	1	0
6:15 PM					0	13	0	25	0	0	216	15	0	23	338	0	630			1	0	2
6:30 PM					0	9	0	14	0	0	221	11	0	22	327	0	604			0	0	0
6:45 PM					0	4	0	13	0	0	184	8	0	34	299	0	542			0	1	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	1	0	0	0	0	0	0	0	0	0	0	1
Lights					0	68	0	164	0	0	934	88	0	290	1,380	0	2,924
Mediums					0	0	0	0	0	0	8	0	0	0	10	0	18
Total					0	69	0	164	0	0	942	88	0	290	1,390	0	2,943

All Traffic Data Services Inc.

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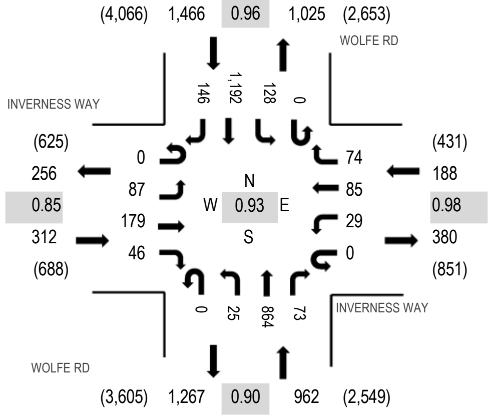
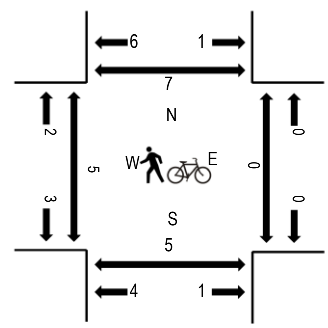
Location: 5 WOLFE RD & INVERNESS WAY PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	INVERNESS WAY Eastbound U-Turn	Left	Thru	Right	INVERNESS WAY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	8	9	6	0	3	7	12	0	0	145	9	0	17	260	19	495	2,291	0	0	0	0
4:15 PM	0	3	16	9	0	5	8	7	0	3	168	17	0	18	249	16	519	2,481	0	1	2	0
4:30 PM	0	15	22	12	0	12	18	9	0	3	166	13	0	23	306	17	616	2,702	0	0	1	0
4:45 PM	0	13	35	7	0	8	9	12	0	4	203	17	0	21	302	30	661	2,806	5	0	0	2
5:00 PM	0	23	29	16	0	5	20	18	0	6	184	24	0	26	306	28	685	2,928	0	0	0	1
5:15 PM	0	16	39	10	0	9	18	21	0	12	217	15	0	32	318	33	740	2,917	1	0	1	1
5:30 PM	0	28	49	15	0	9	23	16	0	4	217	17	0	31	272	39	720	2,876	1	0	0	4
5:45 PM	0	20	62	5	0	6	24	19	0	3	246	17	0	39	296	46	783	2,739	3	0	1	1
6:00 PM	0	13	41	12	0	9	31	8	0	0	188	12	0	20	295	45	674	2,515	4	1	0	0
6:15 PM	0	22	37	10	0	9	16	11	0	2	226	16	0	24	283	43	699		1	1	0	0
6:30 PM	0	17	22	9	0	1	17	7	0	3	180	10	0	23	268	26	583		2	1	1	2
6:45 PM	0	8	21	9	0	2	17	5	0	6	182	14	0	14	252	29	559		1	0	1	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	87	179	46	0	29	85	73	0	25	859	73	0	128	1,185	146	2,915
Mediums	0	0	0	0	0	0	0	1	0	0	5	0	0	0	7	0	13
Total	0	87	179	46	0	29	85	74	0	25	864	73	0	128	1,192	146	2,928

(303) 216-2439
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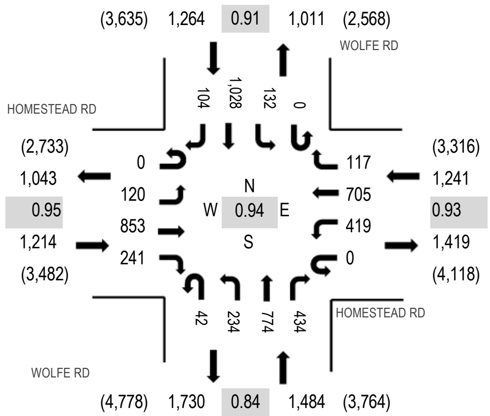
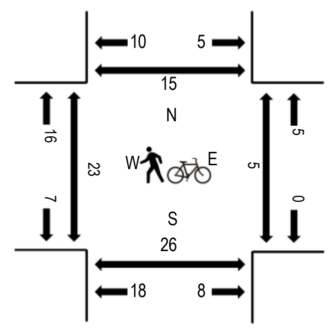
Location: 6 WOLFE RD & HOMESTEAD RD PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	26	225	37	0	77	108	20	13	38	100	80	0	43	194	20	981	4,301	2	1	5	0
4:15 PM	0	29	171	37	0	78	143	30	11	35	125	60	0	25	240	29	1,013	4,551	0	0	3	3
4:30 PM	0	32	218	48	0	94	132	30	11	35	145	72	0	35	264	20	1,136	4,858	1	5	6	0
4:45 PM	0	26	235	51	0	111	134	31	12	52	149	74	0	53	223	20	1,171	5,108	6	4	13	4
5:00 PM	0	31	234	60	0	118	169	27	10	40	149	91	0	36	243	23	1,231	5,203	5	1	7	3
5:15 PM	0	26	217	56	0	101	173	23	8	61	205	107	0	37	272	34	1,320	5,163	7	1	8	4
5:30 PM	0	34	196	62	0	116	188	31	11	63	235	131	0	33	262	24	1,386	5,115	1	2	0	0
5:45 PM	0	29	206	63	0	84	175	36	13	70	185	105	0	26	251	23	1,266	4,856	2	1	2	8
6:00 PM	0	30	224	59	0	107	165	27	9	46	126	94	0	29	243	32	1,191	4,693	3	1	6	4
6:15 PM	0	23	213	37	0	83	158	31	12	62	181	120	1	47	269	35	1,272		3	2	8	2
6:30 PM	0	20	205	58	0	93	150	35	9	53	142	96	0	34	212	20	1,127		7	2	6	3
6:45 PM	0	26	203	35	0	85	134	19	7	46	153	112	0	31	229	23	1,103		1	4	3	4

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	120	846	237	0	415	702	116	42	230	767	404	0	129	1,023	104	5,135
Mediums	0	0	7	3	0	4	3	1	0	4	7	30	0	3	5	0	67
Total	0	120	853	241	0	419	705	117	42	234	774	434	0	132	1,028	104	5,203

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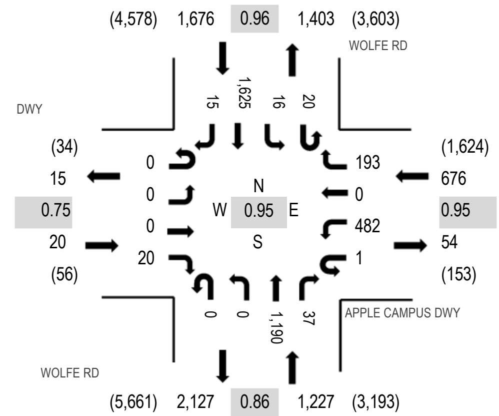
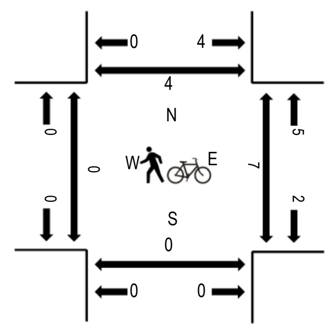
Location: 7 WOLFE RD & APPLE CAMPUS DWY PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	DWY Eastbound U-Turn	Left	Thru	Right	APPLE CAMPUS DWY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	0	0	9	0	54	0	17	0	0	217	6	4	7	290	4	608	2,710	0	1	0	1
4:15 PM	0	0	0	2	0	60	0	21	0	0	186	11	3	4	337	2	626	2,976	0	0	0	1
4:30 PM	0	0	0	2	0	80	0	24	0	0	250	6	3	11	378	2	756	3,247	0	0	0	0
4:45 PM	0	0	0	4	0	85	0	27	0	0	239	7	6	5	346	1	720	3,438	0	1	0	1
5:00 PM	0	0	0	7	0	115	0	46	0	0	259	10	2	3	430	2	874	3,599	0	1	0	1
5:15 PM	0	0	0	3	1	123	0	54	0	0	291	4	6	3	410	2	897	3,521	0	4	0	2
5:30 PM	0	0	0	5	0	118	0	49	0	0	348	10	6	5	399	7	947	3,437	0	0	0	0
5:45 PM	0	0	0	5	0	126	0	44	0	0	292	13	6	5	386	4	881	3,305	0	1	0	0
6:00 PM	0	0	0	7	0	96	0	41	0	0	233	6	3	4	403	3	796	3,142	0	2	0	1
6:15 PM	0	0	0	3	1	99	0	49	0	0	264	6	3	4	384	0	813		0	1	0	0
6:30 PM	0	0	0	6	0	114	1	43	0	0	262	11	4	3	367	4	815		0	3	0	2
6:45 PM	0	0	0	3	1	102	0	33	0	0	259	3	9	3	303	2	718		0	5	0	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	0	0	20	1	482	0	193	0	0	1,156	37	20	16	1,610	15	3,550
Mediums	0	0	0	0	0	0	0	0	0	0	34	0	0	0	14	0	48
Total	0	0	0	20	1	482	0	193	0	0	1,190	37	20	16	1,625	15	3,599

All Traffic Data Services Inc.
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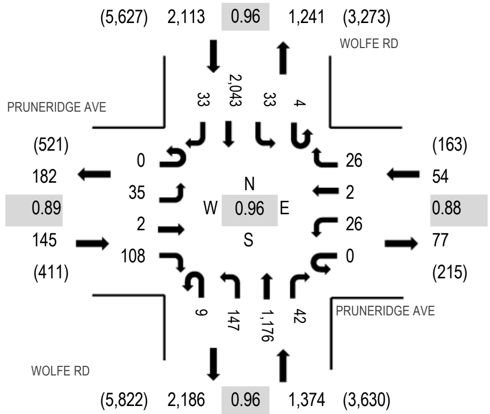
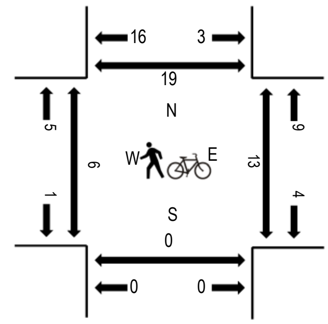
Location: 8 WOLFE RD & PRUNERIDGE AVE PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	PRUNERIDGE AVE Eastbound U-Turn	Left	Thru	Right	PRUNERIDGE AVE Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	6	1	11	0	4	0	11	4	25	199	10	3	1	336	4	615	2,846	0	0	0	0
4:15 PM	0	7	2	30	0	3	1	8	2	38	188	6	1	5	377	6	674	3,036	2	0	0	1
4:30 PM	0	11	2	31	0	4	1	8	3	24	224	8	0	4	415	10	745	3,282	1	4	0	4
4:45 PM	0	8	1	15	0	6	0	6	2	29	253	12	2	4	466	8	812	3,444	2	1	0	2
5:00 PM	0	7	0	24	0	6	0	8	2	34	218	6	2	7	485	6	805	3,593	1	4	0	16
5:15 PM	0	11	0	22	0	4	0	8	2	35	275	12	0	4	534	13	920	3,686	1	1	0	2
5:30 PM	0	11	1	30	0	8	0	7	1	32	311	12	0	10	473	11	907	3,655	2	5	0	3
5:45 PM	0	5	1	29	0	7	2	6	4	44	312	8	1	10	524	8	961	3,592	1	2	0	12
6:00 PM	0	8	0	27	0	7	0	5	2	36	278	10	3	9	512	1	898	3,392	1	5	0	2
6:15 PM	1	8	2	27	0	7	1	9	2	40	300	16	0	10	460	6	889		2	3	0	4
6:30 PM	0	9	0	23	0	4	0	12	1	37	260	7	2	10	471	8	844		2	4	0	4
6:45 PM	1	14	0	25	0	4	1	5	3	50	243	10	0	14	383	8	761		5	4	0	8

Peak Rolling Hour Flow Rates

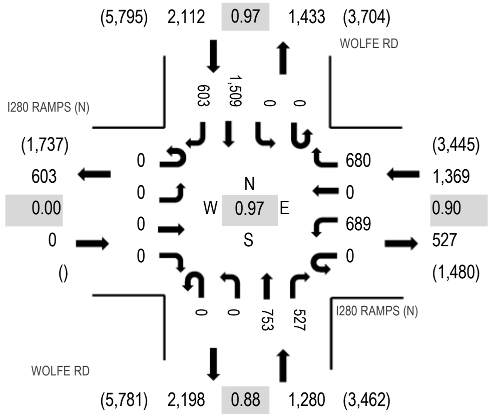
Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	35	2	108	0	26	2	26	9	147	1,144	42	4	33	2,028	33	3,639
Mediums	0	0	0	0	0	0	0	0	0	0	32	0	0	0	15	0	47
Total	0	35	2	108	0	26	2	26	9	147	1,176	42	4	33	2,043	33	3,686

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

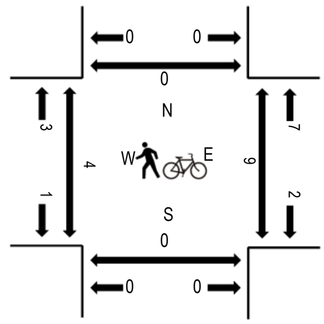
Location: 9 WOLFE RD & I280 RAMPS (N) PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (N) Eastbound U-Turn	Left	Thru	Right	I280 RAMPS (N) Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	0	0	0	0	123	0	106	0	0	141	128	0	0	230	121	849	3,625	1	1	0	0
4:15 PM	0	0	0	0	0	95	0	100	0	0	130	82	0	0	295	115	817	3,830	0	1	0	0
4:30 PM	0	0	0	0	0	112	0	140	0	0	133	120	0	0	318	132	955	4,197	1	3	0	0
4:45 PM	0	0	0	0	0	117	0	154	0	0	143	103	0	0	341	146	1,004	4,469	3	1	1	0
5:00 PM	0	0	0	0	0	125	0	110	0	0	165	139	0	0	364	151	1,054	4,682	2	0	0	0
5:15 PM	0	0	0	0	0	149	0	160	0	0	170	145	0	0	384	176	1,184	4,753	2	0	0	0
5:30 PM	0	0	0	0	0	168	0	186	0	0	224	138	0	0	380	131	1,227	4,761	1	2	0	0
5:45 PM	0	0	0	0	0	182	0	200	0	0	173	101	0	0	373	188	1,217	4,606	0	1	0	0
6:00 PM	0	0	0	0	0	139	0	137	0	0	154	149	0	0	399	147	1,125	4,395	1	4	0	0
6:15 PM	0	0	0	0	0	200	0	157	0	0	202	139	0	0	357	137	1,192		2	1	0	0
6:30 PM	0	0	0	0	0	165	0	137	0	0	167	105	0	0	333	165	1,072		0	2	0	0
6:45 PM	0	0	0	0	0	148	0	135	0	0	180	131	0	0	284	128	1,006		1	1	0	0

Peak Rolling Hour Flow Rates

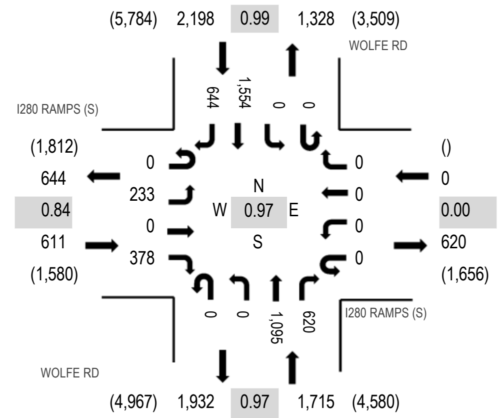
Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	0	0	0	0	681	0	662	0	0	741	491	0	0	1,498	596	4,669
Mediums	0	0	0	0	0	8	0	18	0	0	12	36	0	0	10	7	91
Total	0	0	0	0	0	689	0	680	0	0	753	527	0	0	1,509	603	4,761

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

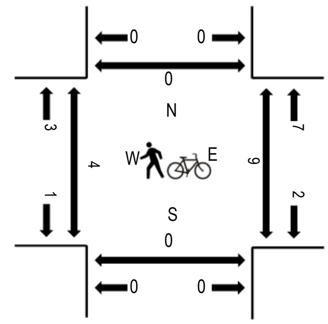
Location: 10 WOLFE RD & I280 RAMPS (S) PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 06:15 PM - 06:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	I280 RAMPS (S) Eastbound U-Turn	Left	Thru	Right	I280 RAMPS (S) Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	36	0	71	0	0	0	0	0	0	233	119	0	0	264	89	812	3,395	1	3	0	0
4:15 PM	0	42	0	73	0	0	0	0	0	0	170	128	0	0	246	144	803	3,580	0	1	0	0
4:30 PM	0	32	0	69	0	0	0	0	0	0	220	121	0	0	275	156	873	3,853	0	2	0	0
4:45 PM	0	37	0	80	0	0	0	0	0	0	209	123	0	0	320	138	907	4,103	2	2	0	0
5:00 PM	0	42	0	73	0	0	0	0	0	0	262	130	0	0	307	183	997	4,312	1	3	0	1
5:15 PM	0	49	0	88	0	0	0	0	0	0	266	139	0	0	369	165	1,076	4,431	3	1	0	0
5:30 PM	0	50	0	89	0	0	0	0	0	0	312	124	0	0	400	148	1,123	4,524	1	0	0	0
5:45 PM	0	65	0	88	0	0	0	0	0	0	257	151	0	0	388	167	1,116	4,388	0	2	0	0
6:00 PM	0	43	0	94	0	0	0	0	0	0	260	181	0	0	370	168	1,116	4,237	2	4	0	0
6:15 PM	0	75	0	107	0	0	0	0	0	0	266	164	0	0	396	161	1,169		1	1	0	0
6:30 PM	0	54	0	84	0	0	0	0	0	0	218	133	0	0	339	159	987		0	2	0	0
6:45 PM	0	60	0	79	0	0	0	0	0	0	251	143	0	0	298	134	965		1	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Lights	0	228	0	369	0	0	0	0	0	0	1,048	615	0	0	1,543	636	4,439
Mediums	0	5	0	9	0	0	0	0	0	0	47	5	0	0	11	7	84
Total	0	233	0	378	0	0	0	0	0	0	1,095	620	0	0	1,554	644	4,524

(303) 216-2439
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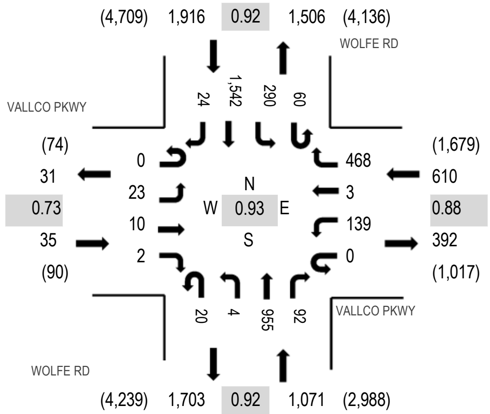
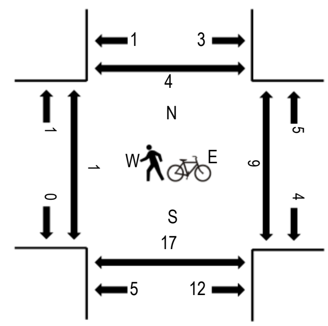
Location: 11 WOLFE RD & VALLCO PKWY PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	VALLCO PKWY Eastbound U-Turn	Left	Thru	Right	VALLCO PKWY Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	10	1	1	0	33	0	109	4	0	201	24	7	39	238	2	669	2,624	0	3	6	2
4:15 PM	0	5	4	1	0	19	2	66	13	2	183	22	8	44	206	2	577	2,707	0	0	2	0
4:30 PM	0	1	3	1	0	26	0	89	4	0	202	23	12	51	240	3	655	2,967	0	3	2	1
4:45 PM	0	2	2	0	0	25	0	88	6	1	208	18	11	57	298	7	723	3,289	2	2	0	1
5:00 PM	0	2	3	0	0	37	0	109	7	1	247	13	10	58	262	3	752	3,469	3	5	4	0
5:15 PM	0	2	2	2	0	46	1	128	7	0	227	15	8	53	343	3	837	3,565	4	2	2	4
5:30 PM	0	4	4	1	0	41	0	114	7	1	260	27	18	77	419	4	977	3,632	1	1	1	2
5:45 PM	0	9	2	1	0	30	0	111	6	1	245	26	14	86	363	9	903	3,479	0	6	3	0
6:00 PM	0	5	3	0	0	28	0	112	2	2	223	22	14	58	371	8	848	3,373	0	1	3	0
6:15 PM	0	5	1	0	0	40	3	131	5	0	227	17	14	69	389	3	904		0	1	10	2
6:30 PM	0	5	3	0	0	31	1	111	3	1	203	22	12	82	338	12	824		0	3	0	1
6:45 PM	0	4	1	0	0	35	0	113	4	0	241	15	6	70	306	2	797		2	0	1	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	23	10	2	0	135	3	435	20	4	945	85	58	280	1,534	24	3,558
Mediums	0	0	0	0	0	4	0	33	0	0	10	7	2	10	8	0	74
Total	0	23	10	2	0	139	3	468	20	4	955	92	60	290	1,542	24	3,632

All Traffic Data Services Inc.

(303) 216-2439
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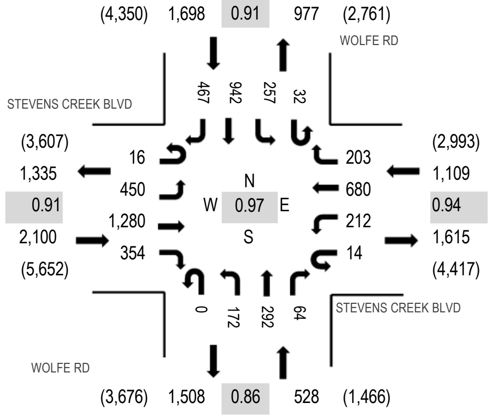
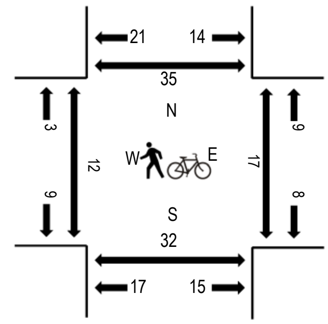
Location: 12 WOLFE RD & STEVENS CREEK BLVD PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	STEVENS CREEK BLVD Eastbound U-Turn	Left	Thru	Right	STEVENS CREEK BLVD Westbound U-Turn	Left	Thru	Right	WOLFE RD Northbound U-Turn	Left	Thru	Right	WOLFE RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	1	105	216	63	4	30	121	37	0	40	79	20	6	55	132	112	1,021	4,167	5	0	8	1
4:15 PM	1	106	270	43	7	30	144	46	1	37	48	19	7	55	129	87	1,030	4,333	4	10	14	4
4:30 PM	3	90	224	53	4	35	125	52	0	26	55	14	7	53	128	94	963	4,619	0	10	14	0
4:45 PM	3	104	270	62	9	44	169	41	0	40	66	21	7	49	174	94	1,153	5,057	2	4	7	1
5:00 PM	4	99	317	83	5	42	131	55	0	33	78	21	10	46	167	96	1,187	5,304	3	11	11	9
5:15 PM	5	121	340	90	5	64	160	55	1	42	52	20	5	62	190	104	1,316	5,387	6	7	9	4
5:30 PM	5	102	301	81	2	66	173	46	0	51	87	19	7	69	265	127	1,401	5,435	5	2	5	8
5:45 PM	2	120	362	99	1	50	190	47	0	47	74	10	8	57	219	114	1,400	5,259	0	6	8	11
6:00 PM	5	107	286	79	6	39	136	57	0	35	77	24	6	76	240	97	1,270	4,990	3	6	7	14
6:15 PM	4	121	331	95	5	57	181	53	0	39	54	11	11	55	218	129	1,364		2	1	9	2
6:30 PM	7	101	269	80	2	48	136	46	0	32	49	22	20	57	239	117	1,225		5	1	10	11
6:45 PM	4	106	275	37	4	36	149	48	0	39	70	13	13	54	167	116	1,131		2	6	7	4

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	16	441	1,269	354	14	211	670	200	0	172	289	64	32	255	938	459	5,384
Mediums	0	9	11	0	0	1	10	3	0	0	3	0	0	2	4	8	51
Total	16	450	1,280	354	14	212	680	203	0	172	292	64	32	257	942	467	5,435

Location: 13 LAWRENCE EXPY & HOMESTEAD RD PM
Date and Start Time: Wednesday, March 28, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

All Traffic Data Services Inc.
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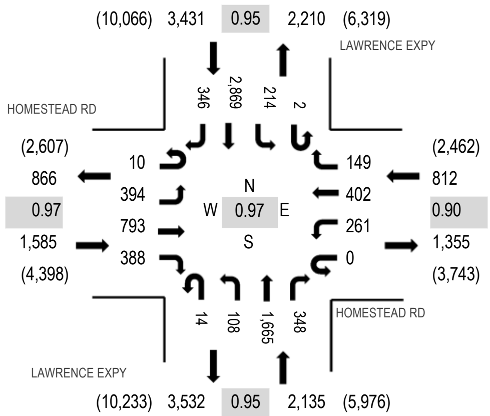
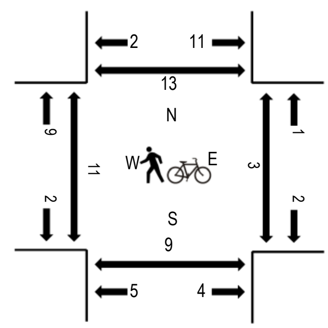
Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	HOMESTEAD RD Eastbound U-Turn	Left	Thru	Right	HOMESTEAD RD Westbound U-Turn	Left	Thru	Right	LAWRENCE EXPY Northbound U-Turn	Left	Thru	Right	LAWRENCE EXPY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	102	168	97	0	59	70	44	4	29	349	57	0	49	661	53	1,742	7,601	3	1	2	3
4:15 PM	0	101	170	90	0	57	102	33	4	33	376	62	0	50	797	68	1,943	7,752	2	0	3	2
4:30 PM	2	112	148	108	0	53	67	41	2	37	368	63	0	58	769	77	1,905	7,865	1	1	4	3
4:45 PM	0	86	204	96	0	65	94	43	2	29	376	83	1	63	784	85	2,011	7,963	0	1	2	0
5:00 PM	2	106	192	109	0	71	97	33	4	27	392	76	0	51	646	87	1,893	7,937	5	0	1	4
5:15 PM	3	108	201	94	0	69	115	45	5	17	446	97	1	42	735	78	2,056	7,907	3	0	5	7
5:30 PM	5	94	196	89	0	56	96	28	3	35	451	92	0	58	704	96	2,003	7,717	3	2	1	2
5:45 PM	1	97	202	85	0	75	118	45	1	38	426	91	0	60	675	71	1,985	7,582	5	3	5	6
6:00 PM	2	93	165	80	0	74	129	47	1	34	346	87	1	61	663	80	1,863	7,364	1	0	4	2
6:15 PM	3	104	144	80	0	60	117	44	2	49	365	70	1	53	667	107	1,866		5	3	8	6
6:30 PM	2	92	164	69	0	53	87	55	3	38	381	73	3	64	676	108	1,868		2	0	3	4
6:45 PM	3	93	172	64	0	85	100	35	1	19	355	77	0	80	586	97	1,767		2	0	5	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
Lights	10	385	786	388	0	261	397	146	14	107	1,652	345	2	213	2,861	344	7,911
Mediums	0	9	7	0	0	0	5	3	0	1	12	3	0	1	7	2	50
Total	10	394	793	388	0	261	402	149	14	108	1,665	348	2	214	2,869	346	7,963

Appendix B
Lists of Approved Projects

Upcoming Projects in Cupertino, March 2018

Project Name	Location/Uses	Additional Description	Tentative Time Frame/Status
Main Street (Sandhill Properties)	NW of Tantau/SCB (Mixed Use)	❖ 180 room hotel, 260Ks.f. office, up to 130.5Ks.f. retail and 120 apt units. ❖ List of retailers: Lazy Dog, Philz Coffee, Eureka!, Alexander's, Pieology, Rootstock, 85 Degrees, Capezio, Howard's Shoes, Oren's Hummus, Panino Giusto, Meet Fresh, Tea Chansii, AT&T, Chef Hung, Target, Meriwest, Pressed Juicery, Orange Theory	❖ Apartments estimated to be completed early 2018 ❖ Hotel, bar and banquet rooms open ❖ Orange Theory open ❖ TCO for "The Loft" apartments and the Marriott bar and conference facilities
AT&T Wireless	21060 Homestead Rd (Office Bldg)	DP, ASA & Height EXC for a 75 foot mono-eucalyptus	❖ Application filed 10/26/11. ❖ Application on hold at applicant request.
Nineteen800 (Rosebowl)	N. Wolfe/ Vallco Pkwy (Mixed use)	Residential (204 units) and retail (45Ks.f.).	❖ Tenants: Vitality Bowls, Kula Sushi, Doppio Zero, The Kebab Shop,, Atlas Health, Nosh Café, Steins ❖ Stout Burgers building permits under review ❖ Boiling Point, Jin Tea Shop, and Koja Kitchen building permits issued
Foothill Live/Work	10121 N Foothill Blvd	DP, ASA, Z, TM, and TR to construct 6 townhomes (5 w/ detached work spaces)	❖ PC recommended approval on 4/22/14. CC approved on 05/20/14. ❖ Completed and finaled
Hyatt House (Vallco – behind JC Penney)	S-W of I-280 & Wolfe Rd (Hotel/Restaurant/Bar)	148-room hotel with restaurant and bar and conference room space	❖ Building permits for site work, podium and hotel issued. ❖ Construction started
Verizon Wireless	10300 Torre Avenue (Wireless facility)	DP, ASA & Height EXC for a new wireless facility	❖ Appeal of PC decision denied by CC on 10/06/15. ❖ Lease approved by CC on 01/19/16 ❖ Facility is active
GPA Authorization	City-wide	Proposed procedures for process of GPA applications www.cupertino.org/gpaauthorization	❖ Project plans posted at: www.cupertino.org/gpaauthorization ❖ GPA Authorization for Cupertino Hotel (Goodyear Tires Site) and Cupertino Village Boutique hotel ❖ The Oaks GPA Authorization resubmittal withdrawn

AH = Admin. Hearing ASA = Arch. and Site Approval; CC = City Council; CUP = Conditional Use Permit; DA = Development Agreement; DIR = Director's Minor Mod.; DP = Development Permit; DRC = Development Review Comm.; ERC = Environmental Review Comm.; EXC = Exception; EXT = Extension; GPA = General Plan Amendment; HC = Housing Comm.; HOC = Heart of the City; LAC = Legislative Action Comm.; M = Modification; MCA = Municipal Code Amendment; PC = Planning Comm; SS = Study Session; TI = Tenant Imp.; TM = Tentative Map; TR = Tree Removals.

Project Name	Location/Uses	Additional Description	Tentative Time Frame/Status
Economic Development Strategic Plan (EDSP)	City-wide	❖ Research and develop criteria for converting underutilized retail space to incubator or co-working uses ❖ Research the potential to establish a Makers Space/Innovation District ❖ Research and develop policies for regulating mobile services (goods and services sold from a truck) in Cupertino.	❖ Expected outreach meetings with stakeholders to continue in Spring.
Apple	NE of Pruneridge & Wolfe Rd (Office/R&D)	Replace 2.6Ms.f. with 3.4M s.f.: 2.82M s.f. office, 1,000 seat auditorium, Fitness Center & Parking & 600Ks.f. R&D offices.	❖ Phase 1: TCO for A1 wedge levels B2, B1, L1, L2, L3 and L4 ❖ Phase 2 construction underway. ❖ TCO for Visitor Center, Theater, Tantau Reception, Tantau 9 & 10 ❖ Tantau bridge improvements completed, pending Public Works Review ❖ Rolling occupancy Winter through Spring 2018 ❖ Prelim review North Tantau Site B revision
Foothill Apartments	10310 N. Foothill Blvd.	Construct 15 apartment units at an existing vacant residentially zoned site.	❖ Building permits issued ❖ Construction started
The Hamptons (HE site)	10900 & 10950 Pruneridge Ave	Replace 342 apartment units with 942 apartment units	❖ CC approved on 07/05/16 ❖ Project on hold by Applicant
Marina Plaza (HE site)	10118-10122 Bandley Street	188 apartment units, with approximately 22,600 s.f. of retail, and a 122 room hotel	❖ CC approved on 09/06/16
Vallco Special Area Specific Plan (HE site)	10123 N. Vallco Vallco Shopping District, Hyatt Hotel, parking lot	Adopt a Specific Plan for the Vallco Special Area	❖ Visit www.cupertino.org/vallco and http://envisionvallco.org/ for updates ❖ 02/05/18, project kickoff meeting ❖ 2/6/18 community interviews ❖ 02/22/18, EIR scoping meeting ❖ 3/13/18, existing conditions presentation ❖ Charrettes week of April 9th and May 21st
Target Remodel	20745 Stevens Creek Blvd.	ASA to allow exterior modification, site and landscape improvements	❖ PC approved on 09/27/16 ❖ New ASA under review
The Forum	23500 Cristo Rey Drive	DP and ASA to allow additions and renovations to the existing senior community care facility	❖ Draft EIR circulation began 12/13/17 ❖ ERC scheduled for 01/18/18 ❖ PC to be scheduled for March 2018 and CC April 2018

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TIA Land Use Data 03/16/2018

TIA Information based on Major Development Update

Project Type	Planning Permit File No.	Address	Cross Street	Description	Proposed SF/Un	Proposed Use(s)	Planning Permit Type	Project Status/Planning Notes
Commercial	2017-7633	1010 Sunnyvale-Saratoga Rd.	E. Remington Dr.	Allow construction of a 18,600 sq. ft. commercial building for child care use (240 children)	18,600 sq. ft.	Child care with 240 children	ER SDP	Approved by PC on 11/27/17. Building permit active (Plan Check)
Commercial	2015-7399	777 Sunnyvale-Saratoga Rd.	S. Mathilda Ave.	Allow an approximately 11,600 square foot new commercial building (grocery store) on existing commercial site. The project replaces a portion (approx. 7,600 s.f.) of the Orchard Supply Hardware building and storage area.	11,600 sq. ft.	Retail	SDP	Project approved by Zoning Administrator. Project appealed to Planning Commission. Appeal
Commercial	2015-7303	795 S. Fair Oaks Ave.	E. El Camino Real	182 room, 5-story hotel	182 5-story	Hotel rooms	ER SDP VAR	Under Construction
Commercial	2016-7898	830 E. El Camino Real	Maria Ln.	Demolish an existing single story restaurant (Crazy Buffet) and construct a new 127-unit, four-story hotel with underground parking garage on a 2.56-acre parcel.	127 room	Hotel	SDP ER	Approved by Planning Commission 4/24/17.
Commercial	2014-7633	861 E. El Camino Real	Wolfe	Allow a 162-room hotel (Hampton Inn), including underground parking	162 Room	Hotel	SDP VAR	Approved by City Council on 4/5/16.
Mixed Use	2014-7373 (Previous 2013-7528 & 2014-7093)	871 and 895 E. Fremont Ave.	E El Camino Real	Redevelopment of a 5.49-acre site with 138 residential units (39 townhomes and 99 apartments) plus 6,934 square feet of retail/office use with surface and underground parking. Project involves Rezoning of 895 E. Fremont Ave. from C-1/ECR to R-3/ECR and preparation of an Environmental Impact Report (EIR).	39 99 6,934 sq. ft.	Townhomes Apartments Retail/Office	RZ ER SDP TM	Approved by the City Council on 12/13/16. EIR certified by the City Council on
Residential	2016-7293	1008 E. El Camino Real	Poplar	Rezone the property at 1314-1320 Poplar Ave. from R-1/ECR (Low Density Residential/Precise Plan for El Camino Real) to C-2/ECR (Highway Business Commercial/Precise Plan for El Camino Real) and redevelop former mobile home park (Conversion Impact Report certified and closure approved in January 2016) and existing duplex property comprising a project site of 2.1 acres into a 108-unit, 5-story mixed income (20% of units will be affordable to very low income households) rental housing complex with associated site improvements.	108	Apartments	ER RZ SDP	PC recommeded approval on 6/26/17. CC approved on 7/25/17. In Building Plan Check review

Santa Clara Project as of 1/23/2018

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5402 Great America Pkwy	Approved	3 Com/Cognac Great America	Existing office use redeveloped to 278,000 sf of office/research & development	0	-	278,000	-	-
2350 Mission College Blvd	Approved	2350 Mission College Boulevard Office Retail	300,000 sf of office in two buildings and a 6 story parking garage; 6,000 square feet of retail	0	-	300,000	-	6,000
4301, 4401, 4551 Great America Pkwy	Approved	Sobrato Office Development	Rezone from PD & PD[ML] to construct (2) 12-story office buildings totaling 718,000 sq.ft. & (1) four-story parking garage on a developed property w/ (2) 300,000 sq.ft. existing office buildings that are to remain	0	-	1,318,000	-	-
900 Kiely Blvd	Completed/Occupied	Fairfield Development	781 housing units, 57 SFD, 68 row houses, 116 townhouses/ 552 apartments (Modification to current PD-MC approval allowing additional 21 apartment units	781	-	-	-	-
2620-2727 Augustine Dr	Approved	Augustine Bowers Industrial Campus / Equity Office	1,969,600 sf of office and up to 35,000 sf of retail	0	-	1,969,600	-	35,000
2600 San Tomas Expy 2800 San Tomas Expy 2400 Condensa St	Approved	NVIDIA	1,200,000 sf of office and high-tech lab buidlings replacing approx. 690,000 sf of office space. Revised DA	0	-	1,200,000	-	-
Mission College Blvd	Completed/Occupied	Mission College Master Plan	427,000 sq. ft.	0	427,000	-	-	-
5010 Old Ironsides Dr	Approved	(formerly Yahoo! Campus) 2016 LeEcco owned property	Phased development of a 3,060,000 sq.ft. office/R&D campus consisting of 13 six-story buildings, three commons buildings, surface parking & two levels of below grade parking	0	-	3,060,000	-	-
2875 Lakeside Dr	Completed/Occupied	Marriot Townplace Suites	Rezone from Commercial Park (CP) to Planned Development (PD) to facilitate the development of a 107 room extended stay hotel with at-grade podium parking	0	63,837	-	-	-
3333 Scott Blvd	Completed/Occupied	Menlo Equities Office Park	Lot Line Adjustment and Architectural Review to facilitate the development of 735,000 square foot (5 buildings) office space	0	-	735,000	-	-
5403 Stevens Creek Blvd	Approved	Mellon Bank /Perry Airellaga	General Plan Amendment from Low Intensity Office R&D to High Intensity Office R&D, Rezone from CT to PD & Architectural Review to construct (2) 6-story office buildings totalling 375,000 sq.ft. & (1) parking structure w/1281 spaces (2 below & 4 above) & 38 surface parking spaces in conjunction w/ demo of existing one-story commercial building (IHOP Restaurant)		-	375,000	-	-
3137 Forbes Ave	Approved	Calvary Southern Baptist Church	Use Permit Amendment to U.417 to allow Sunday School classrooms and a weekday day care in the existing church facility in conjunction with construction of a new 2-story building, 14,000+ sq.ft. and parking, landscaping improvements	0	-	-	14,000	-
1043 Alviso St	Completed/Occupied	Santa Clara University	Rezone properties from CT & B to PD to construct a a 4-story parking garage and 3-story Art & Art History building in conjunction with removal/demo/relocation of (e) structures on the project site (CEQ2011-01129) including historically signficant structures.	1	44,111	-	-	-

Santa Clara Project as of 1/23/2018

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3499 The Alameda	Completed/Occupied	6 Single family projecft (formerly 9 unit townhome condominium project)	Rezoning to PD from ML to facilitate development of six single family homes	6	-	-	-	-
4306 Fillmore St	Completed/Occupied	James Redfield	Rezoning single family property to PD to allow lot split and building of second new SFD on smaller lots. Tentative parcel map application	2	-	-	-	-
1079 Alviso St	Approved	SCU Steve Brodie	Rezoning of one parcel to allow Larrder House relocation	0	-	2,000	-	-
2200 Lawson Ln	Approved	Sobrato	Amend PD zoning (PLN2007-06379) and Development Agreement (PLN2008-06880) for approved office R&D campus to increase building sq.ft. of allowable office space fropm 516,000 to 613,800 sq.ft.	0	-	613,800	-	-
3000 Bowers Ave	Approved	Office Building	New (2) 5-story 150,000 sq.ft.office buildings, (1) 2-story 17,400 sq.ft. amenity building, and 6 story parking structure with a total of 1,200 parking spaces in conjunction with demolition of an existing 100,042 sq.ft. 2-story office building	0	-	67,358	-	-
2585 El Camino Real	Completed/Occupied	Silicon Valley Builders	GPA #76 from Community Mixed Use to High Density Residential 60 condo for sale units (CEQ2013-01157)	60	-	-	-	-
555 Saratoga Ave	Approved	Silicon Valley Builders	3-story condominium project with 13 units	13	-	-	-	-
4880 Great America Pkwy	Approved	Brad Krouskup	New 171,000 sq. ft. office building and new site improvements and two level parking garage	0	-	171,000	-	-
2611, 2621, 2635, 2645, 2655 El Camino Real	Completed/Occupied	Elaine Breeze/Urban Planning Group	Application to allow development of a multi-family residential project (183 units) on 5 parcels including former Russels Furniture property and El Real Nursery site	183	-	-	-	-
3515-3585 Monroe St	Completed/Occupied	Irvine Co.	New project submitted by Irvine Co. 825 housing units and 40,000 square feet of retail	825	-	-	-	40,000
2620 Augustine Dr	Approved	Irvine Co.	General Plan Amendment #80 from High Intensity Office/R&D to Community Commercial [Retail Center] and Light Industrial to High Intensity Office/R&D [Office Phase II & III]; Rezone from Planned Development (PD) to Planned Development (PD) [Retail Center], and from Light Industrial (ML) to Commercial Park (CP) [Office Phase II & III] to allow the construction of up to 1,243,300 square feet of office space and up to 125,000 square feet of retail space for a total (inclusive of Office Phase I) of up to 2,000,100 square feet of development; Approval of Development Agreement Amendment No. 2	0	-	1,862,100	-	1,380,000
3303 Scott Blvd	Completed/Occupied	Appllied Materials	New three-story office building at approximately 78,000 square feet. Design review and initial study required.	0	-	78,000	-	-
1460 Monroe St	Approved	Silicon Sage Builders	Rezone from CT to PD to construct a 4-story mixed use development with 6726 sq.ft. of ground floor retail and 28 residential units above; 43 surface parking spaces	28	-	5,528	-	6,726
45 Buckingham Dr	Completed/Occupied	Prometheus	Four-story 222 unit multi-family residential development with wrap parking structure w/ 375 on-site parking spaces in conjunction w/ demo of (e) commercial building (CEQ2013-01157)	222	-	-	-	-

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3051 Homestead Rd	Completed/Occupied	David Tymn for Mozart Dev.	Application for Rezone from A to PD for the demolition of an existing s.f. residence, and replacement with 8 detached homes	8	-	-	-	-
4301 Great America Pkwy	Approved	SOBRATO	Rezone from PD & PD[ML] to PD to construct two high rise office buildings and one parking structure (CEQ2007-01051)construct up to 718,000 square feet of new office space in up to 1,018,000 square feet of office development; up to two, five-level parking structures with up to 3,360 total parking spaces;	0	-	1,018,000	-	-
865 Pomeroy Ave	Approved	Dennis Chargin	Rezoning application to allow an additional 20-1 bedroom apartment units within an existing apartment complex with 51 current units	71	-	-	-	-
3001 Coronado Dr	Approved	Tiemo Miehner/coresite	Architectural Review to amend the previously approved CoreSite Campus master plan with two three story 92147 square foot buildings and other improvements such as bio-swales, parking, and landscaping.	0	-	-	204,870	-
2620 Augustine Dr	Approved	Irvine Co.	125,000 square foot retail center (adjustment to PD with office campus)	0	-	1,862,100	-	138,000
5450 Great America Pkwy	Approved	BNP Leasing Corp	Architectural review for Phase 2 of approved 6-story office building on an existing office/R&D site with 3 office buildings subgrade and surface parking (certified EIR).	0	-	513,325	-	-
166 Saratoga Ave	Completed/Occupied	Charles McKeag	Submittal for GPA, Rezone and AC to allow 33 unit residential project (phase I) on 1.74 acre site. Total building area 54K sq. ft.	33	-	-	-	-
2520 Augustine Dr 3333 Octavius Dr	Approved	Irvine Co. Carlene Matchniff	Santa Clara Square Office Project (Phase II and III- see a. Two additional parcels are proposed to be added to the recently approved SCSQ Project. Addendum to the EIR and Amendment to Development Agreement is part of this proposal. The Office Sites proposed will not exceed the 2009 Project. Office Phase II and III are proposed to consist of 6-8 story office buildings with associated surface and structured parking at a ratio of 3.3/1000. Vesting Tentative Parcel Map proposal combines 6 parcels to create 3 parcels (See Drawings). Street bulb at Augustine Drive and Octavius Drive is proposed to be replaced with standard curb.	0	-	1,727,100	-	138,000
1313 Franklin St 1052 Monroe St 1358 Benton St	Approved	Silicon Valley Builders	Multifamily Residential project with 46 units and 16K or retail space and 4 stories	44	-	-	-	16,700
3001, 3032 Coronado Dr	Approved	Tiemo Mehner	AC and DA for two new data centers along with vacation of a portion of Coronado Drive	0	-	-	201,350	-
750 Walsh Ave	Completed/Occupied	DH family Partnerhsip	New 57K industrial warehouse bulding and surface parking and site improvements	0	-	17,596	57,000	-
2930 Corvin Dr	Approved	TI and ARC	Architectural Review to convert an existing industrial building into a data center [2.5MW energy use]	0	-	-	20,000	-
4090 Network Cir	Completed/Occupied	Oracle	Construction of one new 3-story building and one new single story building with associated site improvments to an existing office campus.	0	-	-	-	-
3303 Scott Blvd	Completed/Occupied	Applied Materials	78,000 square foot buildiing with underground parking/Repalced with proposal for service commercial use in existing building (10-1-13)	0	-	78,000	-	-

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A	pproved	Mehdi Shemirizi	Rezone to PD to allow a mixed use project with 12 residential apartments and 1,000 sq ft of retail on a approx. 15,000 square foot lot	12	-	-	-	1,000
3333 Scott Blvd	Completed/Occupied	Jane Vaughn	Expansion of previous approval from to allow 581,000 additional sq ft of office buildings for a total of 1.316m sq.ft	0	-	1,350,713	-	-
1701 Lawrence Rd	Approved	JOMA Studio architects	Rezone from PD (R3-18D) to PD to redevelopment of an existing developed parcel with 9 attached sfr (CEQA to be determined)	9	-	-	-	-
990 Wren Ave	Approved	Eli Engleman	Rezone from R1-6L to PD to construct 5 new detached 2-story single family residences w/attached garage in conjunction with demo of existing sfr (PLN2014-10385 Map & CEQ2014-01177)	5	-	-	-	-
3700 El Camino Real	Approved	Essex Property Trust	Gateway Santa Clara (formerly Kohls Site) Mixed use development- Redevelopment of entire site 87K retail/commercial and 476 housing units (apartments)	476	-	-	-	87,000
455 El Camino Real	Completed/Occupied	SCU Steve Brodie	Re-use of existing office building for SCU for graduate studies off-campus instruction/occupation	0	-	75,000	-	-
3345 Scott Blvd	Approved	Menlo Equities	Amendment to approved project - Modification to site plan and building height of to be constructed 6-story Building D.	0	-	244,880	-	-
2950 Lakeside Dr	Approved	Rashik Patel T2	New 7 story hotel with 188 rooms	0	94,200	-	55,500	-
2820 Northwestern Pkwy	Completed/Occupied	Spencer Myers/Vantage Data Center	Architectural Review to allow a two-story 42,900 square foot addition to an existing two-story industrial building, housing data modules, electrical rooms and office. Project includes maintenance and installation of landscaping and other on-site improvements	0	-	-	42,900	-
2600 Augustine	Approved	Irvine	Santa Clara Square Mixed Use Project - - phased project 100+ acres 2,000 rental housing units 40,000 sf retail added 30 acres parks/open	1800	-	-	-	-
3000 Bowers Ave	Approved	Sobrato	(2) 5-story 150,000 sq.ft.office buildings, (1) 2-story 17,400 sq.ft. amenity building 6 story parking structure with a total of 1,200 parking spaces in conjunction with demolition of an existing 100,042 sq.ft. 2-story office building to allow construction of (2) 165,000 sq.ft. 5-story office buildings and (1) 5-story parking structure and surface parking totaling 991 parking spaces (amended project does not include an amenity building)	0	-	300,000	-	-
100 N Winchester Blvd	Approved	Santana Atrium Professional Center	92 unit senior apartment home community with onsite clubhouse and recreational amenities.	92	-	-	-	-
820 Civic Center Dr	Approved	Michael Fischer	application for a 3 unit Townhome develolpment (retention of one historic home- total of four units)	3	-	-	-	-
2855 Stevens Creek Blvd	Completed/Occupied	Westfield Valley Fair	15K Chase bank bldg. near SCB and Winchester intersection	0	15,000	-	-	-

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1055 Helen Ave	Approved	Mehdi Sadri	Rezone from R1-6L to PD & Architectural Review to construct a 4 unit townhome project w/ private street (Tentative Parcel Map PLN2015-11358)	4	-	-	-	-
3535 Garrett Dr	Completed/Occupied	Menlo Equities	Architectural Review for new eight story office and three level parking structure; Variance for increase in building height to 150'	0	-	150,000	115,400	-
3033 Scott Blvd	Approved	MCA	Expansion of activities at Muslim Community Association to include new high school student base, administrative offices. Director of Planning and Inspection administrative approval an increase of 150 students. Use Permit for futher expansion on hold. Initial Study/MND/MMRP prepared.	0	-	-	-	-
575 Benton St	Approved	Irvine	Mission Towne Center Mission Town Center- 5-story mixed use project consisting ground floor 25,942 sf commercial space and 318 apartments on approximately 6.42 acres	417	25,942	-	-	-
3607 Kifer Rd	Approved	Lennar Commercial	Use Permit to construct off-site 5-level parking structure at 3697 Tahoe Way and 5-story 199,460 sq.ft. office building at 3607 Kifer Rd as part of an existing off campus in conjunction with a Modification to increase maximum building height of the proposed office building to 87.5' and Architectural Review of the project	0	-	199,460	-	-
1871 Bellomy St	Approved	Jason and Linda Chen	Variance and AC approval for large duplex unit development	2	-	-	-	-
2855 Stevens Creek Blvd	Approved	Westfield Valley Fair	New 10 screen Movie Theater complex and new retail tenant space	0		-	-	25,000
1525 Alviso St	Approved	City Ventures (Pulte Homes purchased project)	Application for 40 unit townhouse project- 3 stories (next to Mission Inn motel)- application following preapplication	40	-	-	-	-
555 Reed St 2100-2160 De La Cruz Blvd 2000-2070 De La Cruz Blvd	Completed/Occupied	Xeres Dupont Fabros	New 110,175 square foot data center building connecting the existing 421,095 square foot data center building along with associated site improvements	0	-	-	-	-
1627 Monroe St	Approved	Samir Sharma	Architectural Review to construct 3 new two-story residences; Rezone from R1-6L to PD; Tentative Parcel Map to subdivide one lot into 3 lots	3	-	-	-	-
1777 Laurelwood Rd	Approved	Ray Hashimoto /HMH for River of Life Church	New 35K sanctuary structure adjacent to existing building to allow full congregation to attend one service.	0	-	-	35,000	-
3215 Stevens Creek Blvd	Approved	Oscar Bakhtiari	Use Permit Expansion of an existing car dealership with new replacement construction of a 2-story 45,778 sq.ft. showroom/service facility & integrated parking structure w/ Modification to increase maximum building height to 40'2". Oudoor display. Project involves demolition of 1-story showrrom/service facility and surface parking lot	0	-	-	-	-
820 Civic Center Dr	Approved	Michael Fischer	Amendment to approved 3 unit Townhome develolpment (retention of one historic home- total of four units) and amendment to approve a 5th single family unit	3	-	-	-	-
5155 5120 Stars And Stripes Dr	Approved	Related	City Place -Related Co project for redevelopment of five parcels that include Santa Clara Golf & Tennis Club, BMX track, Fire Station #10, and former City landfill and two parcels on other side of Stars and Stripes (formerly for Montana Lowe project) directly across from Levi's Stadium. Master Development totals of 9.2M square feet and proposes 5.7M sq ft office; 1.1M sq ft retail; 1,360 mixed density residential units; 700 hotel rooms; 250K restaurant uses; 190K entertainment space	1360	990,000	5,700,000	-	1,100,000

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1627 Monroe St	Approved	Samir Sharma	3 new two-story residences; Rezone from R1-6L to PD; Tentative Parcel Map to subdivide one lot into 3 lots	3	-	-	-	-
4935 Stevens Creek Blvd	Approved	Bright Horizons/Camas J. Steinmetz	Demolition of existing car wash and construct a new two-story child care center Approx 18K building.	0	-	-	-	-
3155 Stevens Creek Blvd	Approved	Oscar Bakhtiari	Rezoning of one parcel from A to CT to allow for expansion of car dealership. Zoning must be approved to allow commercial use.	0	-	-	-	-
3226 Scott Blvd	Approved	Courtney Bauer	Architectural Review and ZA Modification to allow the demolition of the existing industrial building and development of a new 230,500 square foot office building with 93,640 parking structure and other onsite improvements.	0	-	-	-	-
2880 Northwestern Pkwy	Approved	Vantage Data Centers 4 LLC	Architectural review of proposed 108,858 square foot, 4-story Vantage V5 building. Proposal is for a new data center and involves parcel line changes.	0	-	-	108,858	-
2041 Mission College Blvd	Approved	Washington Holdings/Kelly Snyder	Build 5 new retail buildings totaling 24,000 sq. ft., a 5-story 175-room hotel, and various site improvements; Tentative Parcel Map to subdivide two parcels into three parcels	0	115,000	-	-	25,000
3100-3200 Coronado Dr	Approved	Irvine Company	Proposal for new office structures (2) totaling 245,000 and new parking garage	0	-	245,000	-	-
1550 Space Park Dr	Approved	Bourns	New 65,000 sq. ft. two story data center on an 89,000 sq. ft. lot.	0	-	-	65,000	-
1479, 1485 Bellomy St	Completed/Occupied	Julie Salinas	Rezone from R1-6L to PD to allow a lot split for two existing homes on a 7K R1-6L lot	0	-	-	-	-
4525 Stevens Creek Blvd	Approved	Enterprise/Paul Hernandez	New outdoor auto sales - Enterprise Rent-a-Car New Construction of a 6,300 sq. ft. showroom building and site improvements	0	-	-	-	6,300
2895 Northwestern Pkwy	Approved	Scott Chappelle/Vantage Data Centers	Vantage 6 (V6) 69,025 sq.ft. (total both floors) new two story data center building with rooftop mechanical equipment, with Initial Study and/or Negative Declaration.	0	-	-	69,025	-
1890 El Camino Real	Approved	Pinn Bros	56 for sale units condo units (no commercial removed from project by CC and reduced project by 4 units)	56	-	-	-	-
1990 El Camino Real	Approved	Leah Lombardi for Chick-fil-A	Use Permit to demo the existing drive-through restaurant (McDonald) and construct a new drive-through restuarant (Chck-fil-A) with on- and off-site improvement. The new tenant (Chick-fil-A) also proposes an indoor play area and a total of 36 outdoor seats in an existing patio.	0	5,000	-	-	-
1 Great America Pkwy	Approved	Cedar Fair	PD rezone to allow 140,000 new retail for open access to general public and year round operation of park	0	140,000	-	-	-
651, 725, and 825 Mathew St	Approved	Vantage	New Data Center campus- Vantage 420,000 sq. ft. Total in up to 4 buildings with electrical substation	0	-	-	420,000	-
3375 Scott Blvd	Approved	John Duquette	New six story office buildin 237,104 sf, 4 story parking structure with 14,000 sq.ft. amenity building (2 story building attached to garage for employee cafe and/or fitness center, etc.)	0		212,400	-	-
2250 El Camino Real	Pending	Sobrato	Pre-application for 55 apartments- 3 floors over podium parking (Western Motel site)	55	10,595	-	-	-
1530, 1540 Pomeroy Ave	Pending	Omid Shakeri	Rezoning of two different parcels (see also 1540 Pomeroy) from R1-6L for 1530 to PD and from A for 1540 to PD, one project, with Tentative Subdivison Map for 8 Townhome units and Lot A common lot.	8	-	-	-	-
1205 Coleman Ave	Pending	Hunter Storm Properties	New multi-family residential project on former BAE site, up to 1360 residential units, approximiately 15,000-25,000 square feet of community-serving retail and restaurant space, and amenities.	1360	-	-	-	25,000
917 Warburton Ave	Approved	Samir Sharma	6 unit single family homes - subdivision map to allow for sale housing	6	-	-	-	-

Santa Clara Project as of 1/23/2018

Street Number & Street Name	Status of Entitlement	Applicant	Tidemark Description	Net Amount of Dwelling Units	Net Commercial (non-office) SQ. FT.	Net Existing Office SQ. FT.	Net Industrial SQ. FT.	Net Retail SQ. FT.
967 Warburton Ave	Approved	Robert Botham	Rezone from Light Industrial (ML) to Planned Development (PD) to construct (4) detached two-story single family residences on a lot with an existing single family residence to be retained (Subdivision Tentative Map to create 5 for-sale single family lots & 1 common lot PL.N2016-12065)	5	-	-	-	-
3001 Tasman Dr	Pending	Mike Hodges/Bixby Land Co	New 4-story core and shell building and two new parking structures and associated site improvements	0	-	558,753	-	-
3305 Kifer Rd	Approved	Leah Draeger/True Life Co.	Development of 45 attached townhomes and stacked flats with 109 parking spaces and open space as part of the Lawrence Station Area Plan . 7.5 acre site project. The environmental review for this project will be covered under the LSAP EIR	45	-	-	-	-
3069 Lawrence Expy	Pending	Westlake Urban/Gaye Quinn	Proposal for 333 unit multi-family development; Tentative Subdivision Map 3.82 acres	333	-	-	-	-
3023 Homestead Rd	Approved	Kurt Keegan	Application to subdivide one lot into four lots and construct three new 1,900 sq. ft. detached homes, and move the existing listed resource onto lot four	4	-	-	-	-
3501 El Camino Real	Pending	Prometheus/ Nathan Tuttle	Pre-application for the development of 100,000 square foot shopping center into a mixed use development including 80,000-86,000 sqft retail and up to 700 apartments	700	-	-	-	86,000
3505 and 3485 Kifer Road; 2985, 2951, 2901, 2900 and 2960 Gordon Avenue; 3060, 2960, 3045 and 3049 Copper Road; and 3570 Ryder Street	Approved	Johnathon Fearn/Summerhill Homes	Development of 996 residential units with 37,000 square foot retail and associated open space, landscaping, parking and other improvements as part of the Lawrence Station Area Plan.	996	-	-	839,884	37,000
2891 Homestead Rd	pending	Anthony Ho	Pre-zone a 0.39 acre site to PD pending annexation, for the construction of 8 townhouses on a podium over subterranean parking area	10	-	-	-	-
2490, 2500 El Camino Real	pending	Lou Mariani; Miles Barber	Proposal for 332 market rate residential units and 66 senior residential units totaling 398 dwelling units, a 306-room hotel with a 6,000 square foot restaurant comprising 205,197 square feet of commercial space on a 7.14 acre site	398	206,000	-	-	-
909 Kiely Blvd	pending	Swim Center at Central Park	International Swim Center (ISC) proposal at Central Park CIP project #3172: project includes the following components: ISC, Community Recreation Center, Swimming Hall of Fame	0	-	-	-	-
90 North Winchester Boulevard (1834 Worthington Circle)	pending	CORE	Portion of former BAREC site (approx 6 acres). Amendment to Existing PD allowing 165 senior affordable units; 419 mixed income apts.' up to 584 housing units with 50% of units affordable, and up tp 25,000 site serving commercial. Up to 1.5 acre open space	359	-	-	-	-
281 Serena Way	pending	Hanna Smolich / Bi Yun Liu	Conversion of SFD to daycare operation/ GPA and rezone needed	0	-	-	-	-
1500 Duane	Approved	Richard Pedley	Arch review to allow the a 949 square foot addition and modificaiton of the existing 68,499 square foot warehouse building to convert a vacant warehouse to a new 69,448 square foot data center.	0	-	-	70,437	-
2904 Corvin	pending	Concentric	121 residential units 5-story multi-family with	121	-	-	-	-

Santa Clara Project as of 1/23/2018

Street Number & Street Name	Status of Entitlement	Applicant	Tidemark Description	Net Amount of Dwelling Units	Net Commercial (non-office) SQ. FT.	Net Existing Office SQ. FT.	Net Industrial SQ. FT.	Net Retail SQ. FT.
3905 Freedom Circle	Pending	Greystar	A new mixed-use development w/following uses: Office (606,968 square feet; Residential 1018 units; Commercial 18,653 square feet Publicly Accessible Open Space (2.5 acres). 16.58 acres of land bounded by Freedom Circle, Mission College Boulevard, Highway 101, and the San Thomas Aquino Creek. The existing site consists of 17,000 square feet Pedro's restaurant and a surface parking lot (APN 104-40-020), and 13.5 acres of vacant land.	1018	18,653	606,968	-	-
2305 Mission College	Pending	Algined Data Centers	Architectural review to allow a demolition of an existing office building and construct a new 495,660 square foot two-story data center, including generator yard, equipment yard, underground water storage, parking for 75 cars (with land banking), and a new SVP substation.	0	-		495,660	-
3625 Peterson Way	Pending	Boston Properties	Pre-application for construction of 2- 8 story steel frame class A office buildings a total of 672,000 square feet with adjacent 4 level above grade parking structure with 1834 parking stalls. Existing 260,000 sq. ft. building to be demolished	0	-	618,931	-	-
3402 El Camino Real	Pending	John Vidovich	Rezoning of a 2.27 acre site that was recently burned down, and redevelop a mixed-use project with 66 apartment units, 9,440 square feet of retail, amenities on the third floor, surface parking, and two-level garage parking.	66	9,900	-	-	-
575 Benton	Pending	Prometheus	(New MTC project proposal) GPA, Rezoning to PD to construct a mixed-use residential development project that consist of 355 apartment units, and approx. 26,000 square feet of retail with 697 parking spaces	355	14,000	-	-	-
1647 Lafayette	Pending	ROEM	Pre-ap review for new 4,800 sq.ft. office building, 2 stories; above grade parking podium with 16 parking spaces, zoned CT (Note: General Plan designation is Very Low Density Residential).	0	-	-	-	-
2780 El Camino Real	Pending	Prometheus RE group (Marilyn Ponte)	General Plan Amendment from Regional Commercial to Medium Density Residential; Rezone from CC to PD & Architectural Review for 58- 3 story townhomes	58	-	-	-	-
1530 and 1540 Pomeroy	Pending	Omid Shakeri	Rezoning of a 0.48 acre site from Low Density Multiple Dwelling (R3-18D) and Agriculture (A) to Planned Development (PD) to construct eight attached townhomes with Tentative Subdivision Map for eight private residential lots and one common lot for driveway and guest parking areas. 1540 Pomeroy (A), 1530 Pomeroy (R3-18D) (CEQ2017-01036)	0	-	-	-	-
1700 Russell Ave	Approved	Air Products	Use Permit to expand an existing air separation and gas production facility to increase the production of hydrogen for delivery to hydrogen fueling facilities (CEQ2017-01030)	0	-	-	-	-
1990 El Camino Real	Approved	Chik-fil-A	Building façade upgrade, site improvement, and an addition of 1,790 square foot basement to an existing 3,234 square foot drive-through restaurant (McDonald). The new tenant (Chick-fil-A) also proposes a total of 80 outdoor seats in an existing patio.	0	-	-	-	-
1375 El Camino Real	Pending	SCS Development	53 townhomes inclusive of 8 live work units	0	-	-	-	-
2232 El Camino Real	Approved	Summerhill	Rezoning a 2.74 acre project site to PD for a four-story mixed-use project with 151 senior apartment homes, 17,909 square foot of commercial space, and 277 parking spaces provided in a wrapped parking structure and parking lot.	151	-	-	-	10,000
1575 Pomeroy	Pending	Kurt Anderson and Nick Speno	Preliminary Review for a four-story 122 unit senior living apartment community					

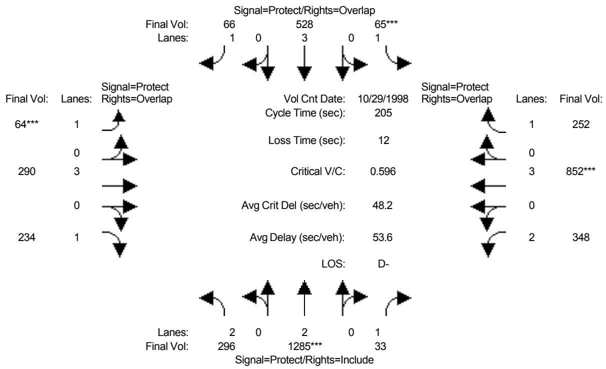
Santa Clara Project as of 1/23/2018

Street Number & Street Name	Status of Entitlement	Applicant	Tidemark Description	Net Amount of Dwelling Units	Net Commercial (non-office) SQ. FT.	Net Existing Office SQ. FT.	Net Industrial SQ. FT.	Net Retail SQ. FT.
3045 Stender	Pending	Tiemo Mehner	Arch review for new 4-story 175,670 s.f. data center building with rooftop mechanical equipment. The project includes demolition of the existing single-story building.	0	-	-	-	-
1800 De La Cruz	Pending	Linda Evans	Use Permit for tenant improvements to an existing building in the heavy Industrial Area (MH) for conversion into a dog day care and boarding facility with covered outdoor activity area, landscape improvements and a new trash enclosure.	0	-	-	-	-
1150 Walsh	Pending	Raging Wire/NTT	Proposed 248,000 square foot data center and substation					
1725 De La Cruz	Pending	Silicon Valley Taproom	Use Permit to conversion of an existing 2,535 square foot light industrial building suite into a restaurant and tap room with a distilled spirits (Type 47 ABC) alcoholic beverage service license, 70 indoor seats and 12 outdoor patio seats, and to allow occassional indoor events live entertainment	0	-	-	-	-
500 El Camino Real	Approved	Santa Clara University	Architectural review of four-story, 368 bed dormitory (South Residence Hall)	0	-	-	-	-
2788 San Tomas Expressway	Pending	Saris Regis for NVIDIA	Architectural review for a new 754,100 square-foot office building and a trellis; PHASE 2 of DA and allowed area additional 300K added to to Phase II originally planned for Phase III on other parcel.	0	-	754,100	-	-
2961 Corvin	Pending	Summerhill	Development application for 38 townhomes on .27 acre site consistent with LSAP. Tentative Subdivision Map filed.	38	-	-	-	-
3005 Democracy	Pending	Ghenzan	General Plan Amendment from the High-Intensity Office/Research and Development (R&D) to a new designation allowing high-intensity mixed use development, including residential and office. 48.6 acre site. Former Yahoo office campus approval.	0	-	-	-	-
3035 El Camino Real	Pending	Hayden Land Corp.	Pre-application for 48 residential units (6 of which live-work units)	48	-	-	-	-
1900 Warburton	Pending	Samir Sharma	Rezone from General Office (OG) to Planned Development (PD) to construct 13 attached condo units in two buildings with a shared driveway on a 0.55 acre site	13	-	-	-	-
500 El Camino Real	Pending	SCU	Architectural review of STEM complex (a 273,429 sq.ft. 4-story building over basement) and demolition of 4 buildings totaling 130,993 sq.ft. (Murphy Hall, Bannan Engineering Labs, Bannan Engineering, & Bannan Hall) approved as part of the 5-year Master Plan Use Permit project (PLN2014-10779 and certified EIR CEQ2014-01184)	0	-	-	-	-

Appendix C
Intersection Level of Service Calculations

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

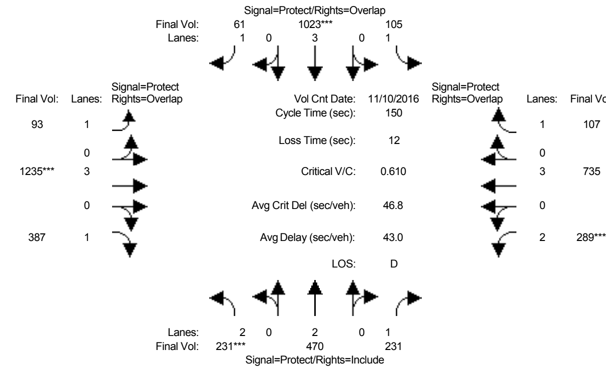


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 Oct 1998 <<												
Base Vol:	296	1285	33	65	528	66	64	290	234	348	852	252
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	1285	33	65	528	66	64	290	234	348	852	252
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	296	1285	33	65	528	66	64	290	234	348	852	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	296	1285	33	65	528	66	64	290	234	348	852	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	296	1285	33	65	528	66	64	290	234	348	852	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	296	1285	33	65	528	66	64	290	234	348	852	252
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.34	0.02	0.04	0.09	0.04	0.04	0.05	0.13	0.11	0.15	0.14
Crit Moves:		****		****			****				****	
Green Time:	65.0	116	116.3	12.8	64.1	76.6	12.6	20.2	85.1	43.8	51.4	64.2
Volume/Cap:	0.30	0.60	0.03	0.60	0.30	0.10	0.60	0.52	0.32	0.52	0.60	0.46
Uniform Del:	52.8	29.0	19.6	93.6	53.4	41.8	93.7	87.8	40.4	71.3	67.7	56.5
IncremntDel:	0.2	0.5	0.0	8.7	0.1	0.1	8.8	0.8	0.3	0.7	0.7	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.9	29.5	19.6	102.3	53.5	41.8	102.6	88.6	40.7	72.0	68.4	57.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.9	29.5	19.6	102.3	53.5	41.8	102.6	88.6	40.7	72.0	68.4	57.1
LOS by Move:	D-	C	B-	F	D-	D	F	F	D	E	E	E+
HCM2kAvgQ:	8	25	1	5	8	3	5	6	10	12	16	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

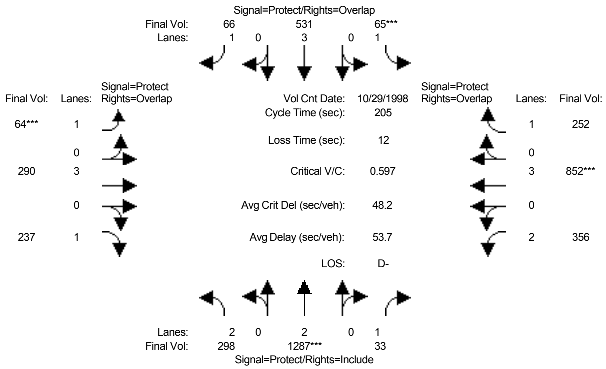


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 10 Nov 2016 << 5:15 - 6:15 PM												
Base Vol:	231	470	231	105	1023	61	93	1235	387	289	735	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	470	231	105	1023	61	93	1235	387	289	735	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	231	470	231	105	1023	61	93	1235	387	289	735	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	470	231	105	1023	61	93	1235	387	289	735	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	470	231	105	1023	61	93	1235	387	289	735	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	231	470	231	105	1023	61	93	1235	387	289	735	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.13	0.06	0.18	0.03	0.05	0.22	0.22	0.09	0.13	0.06
Crit Moves:	****				****			****		****		
Green Time:	18.0	42.7	42.7	19.4	44.1	66.3	22.1	53.3	71.3	22.6	53.7	73.1
Volume/Cap:	0.61	0.43	0.46	0.46	0.61	0.08	0.36	0.61	0.47	0.61	0.36	0.13
Uniform Del:	62.6	43.8	44.2	60.5	45.5	24.2	57.6	39.8	26.5	59.6	35.5	21.0
IncremntDel:	2.9	0.3	0.7	1.5	0.7	0.0	0.9	0.5	0.4	2.3	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.5	44.0	44.9	62.0	46.2	24.3	58.4	40.4	26.9	61.9	35.6	21.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	44.0	44.9	62.0	46.2	24.3	58.4	40.4	26.9	61.9	35.6	21.0
LOS by Move:	E	D	D	E	D	C	E+	D	C	E	D+	C+
HCM2kAvgQ:	6	8	9	5	14	2	4	16	13	8	8	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

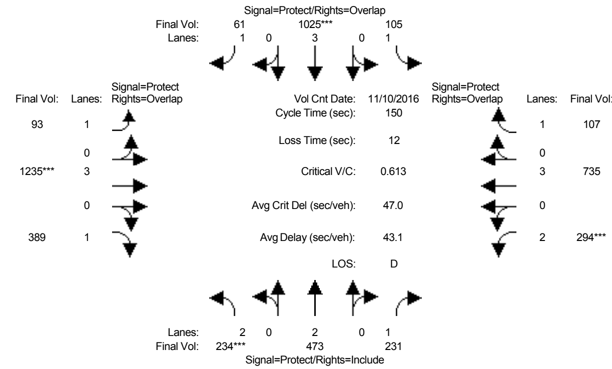


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 Oct 1998 <<												
Base Vol:	296	1285	33	65	528	66	64	290	234	348	852	252
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	1285	33	65	528	66	64	290	234	348	852	252
Added Vol:	2	2	0	0	3	0	0	0	3	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	298	1287	33	65	531	66	64	290	237	356	852	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	1287	33	65	531	66	64	290	237	356	852	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	1287	33	65	531	66	64	290	237	356	852	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	298	1287	33	65	531	66	64	290	237	356	852	252
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.34	0.02	0.04	0.09	0.04	0.04	0.05	0.14	0.11	0.15	0.14
Crit Moves:		****		****			****				****	
Green Time:	65.0	116	116.3	12.8	64.1	76.6	12.6	19.8	84.9	44.1	51.3	64.1
Volume/Cap:	0.30	0.60	0.03	0.60	0.30	0.10	0.60	0.53	0.33	0.53	0.60	0.46
Uniform Del:	52.8	29.0	19.5	93.6	53.4	41.8	93.8	88.1	40.7	71.2	67.7	56.6
IncremntDel:	0.2	0.5	0.0	8.7	0.1	0.1	8.9	0.9	0.3	0.8	0.7	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.9	29.5	19.6	102.4	53.5	41.8	102.6	89.0	41.0	72.0	68.4	57.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.9	29.5	19.6	102.4	53.5	41.8	102.6	89.0	41.0	72.0	68.4	57.2
LOS by Move:	D-	C	B-	F	D-	D	F	F	D	E	E	E+
HCM2kAvgQ:	8	25	1	5	8	3	5	6	10	12	16	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

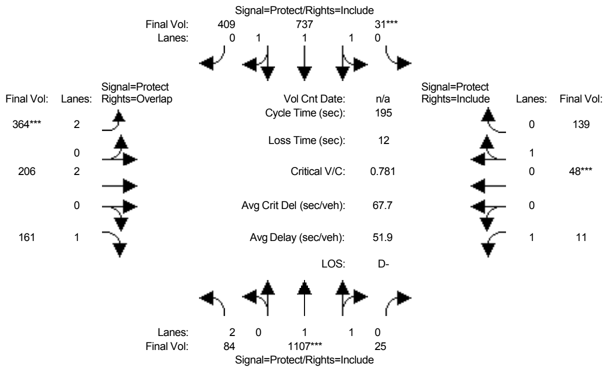


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 10 Nov 2016 << 5:15 - 6:15 PM												
Base Vol:	231	470	231	105	1023	61	93	1235	387	289	735	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	470	231	105	1023	61	93	1235	387	289	735	107
Added Vol:	3	3	0	0	2	0	0	0	2	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	473	231	105	1025	61	93	1235	389	294	735	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	473	231	105	1025	61	93	1235	389	294	735	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	473	231	105	1025	61	93	1235	389	294	735	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	473	231	105	1025	61	93	1235	389	294	735	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.13	0.06	0.18	0.03	0.05	0.22	0.22	0.09	0.13	0.06
Crit Moves:	****				****			****		****		
Green Time:	18.2	42.7	42.7	19.4	44.0	66.1	22.1	53.0	71.2	22.8	53.7	73.1
Volume/Cap:	0.61	0.44	0.46	0.46	0.61	0.08	0.36	0.61	0.47	0.61	0.36	0.13
Uniform Del:	62.6	43.8	44.2	60.5	45.7	24.3	57.6	40.0	26.6	59.5	35.5	21.0
IncremntDel:	2.9	0.3	0.7	1.5	0.7	0.0	0.9	0.6	0.4	2.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.5	44.1	44.9	62.0	46.4	24.3	58.4	40.6	27.0	61.8	35.6	21.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	44.1	44.9	62.0	46.4	24.3	58.4	40.6	27.0	61.8	35.6	21.0
LOS by Move:	E	D	D	E	D	C	E+	D	C	E	D+	C+
HCM2kAvgQ:	6	8	9	5	14	2	4	16	13	8	8	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #2: Wolfe Rd/Fremont Ave

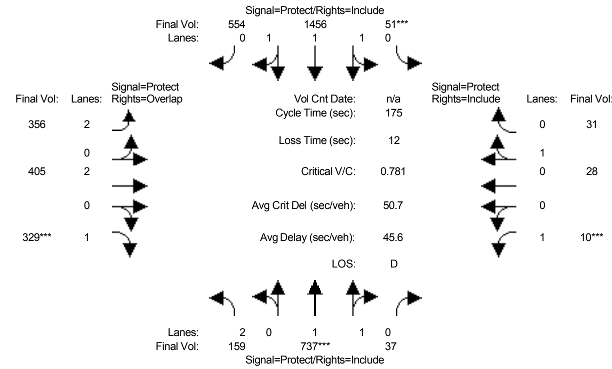


Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	84	1107	25	31	737	409	364	206	161	11	48	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	1107	25	31	737	409	364	206	161	11	48	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	1107	25	31	737	409	364	206	161	11	48	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	1107	25	31	737	409	364	206	161	11	48	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1107	25	31	737	409	364	206	161	11	48	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1107	25	31	737	409	364	206	161	11	48	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.95	0.98	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.95	0.05	0.08	1.92	1.00	2.00	2.00	1.00	1.00	0.26	0.74
Final Sat.:	3150	3618	82	149	3553	1800	3150	3800	1750	1750	462	1338
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.31	0.21	0.21	0.23	0.12	0.05	0.09	0.01	0.10	0.10
Crit Moves:		****		****			****				****	
Green Time:	17.5	76.4	76.4	51.8	111	110.7	28.9	35.4	52.9	19.4	25.9	25.9
Volume/Cap:	0.30	0.78	0.78	0.78	0.37	0.40	0.78	0.30	0.34	0.06	0.78	0.78
Uniform Del:	83.0	52.0	52.0	66.3	23.0	23.6	80.0	69.1	57.1	79.5	81.8	81.8
IncremntDel:	0.6	2.8	2.8	2.7	0.1	0.1	8.3	0.2	0.4	0.2	15.2	15.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.6	54.8	54.8	69.0	23.1	23.7	88.3	69.3	57.5	79.7	96.9	96.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.6	54.8	54.8	69.0	23.1	23.7	88.3	69.3	57.5	79.7	96.9	96.9
LOS by Move:	F	D-	D-	E	C	C	F	E	E+	E-	F	F
HCM2kAvgQ:	3	30	30	22	12	14	14	5	8	1	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #2: Wolfe Rd/Fremont Ave



Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	159	737	37	51	1456	554	356	405	329	10	28	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	737	37	51	1456	554	356	405	329	10	28	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	737	37	51	1456	554	356	405	329	10	28	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	737	37	51	1456	554	356	405	329	10	28	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	737	37	51	1456	554	356	405	329	10	28	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	737	37	51	1456	554	356	405	329	10	28	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.90	0.10	0.08	2.10	0.82	2.00	2.00	1.00	1.00	0.47	0.53
Final Sat.:	3150	3523	177	136	3885	1478	3150	3800	1750	1750	854	946
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.21	0.37	0.37	0.37	0.11	0.11	0.19	0.01	0.03	0.03
Crit Moves:		****		****					****	****		
Green Time:	15.0	45.2	45.2	81.0	111	111.3	24.4	29.7	44.7	7.0	12.3	12.3
Volume/Cap:	0.59	0.81	0.81	0.81	0.59	0.59	0.81	0.63	0.74	0.14	0.46	0.46
Uniform Del:	77.0	60.8	60.8	40.4	18.6	18.6	73.1	67.5	59.7	81.1	78.2	78.2
IncremntDel:	3.4	5.2	5.2	2.0	0.3	0.3	10.8	2.0	6.3	0.9	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	80.5	66.1	66.1	42.4	18.8	18.8	83.9	69.4	66.0	82.0	80.8	80.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.5	66.1	66.1	42.4	18.8	18.8	83.9	69.4	66.0	82.0	80.8	80.8
LOS by Move:	F	E	E	D	B-	B-	F	E	E	F	F	F
HCM2kAvgQ:	5	20	20	32	21	21	13	11	18	1	4	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #2: Wolfe Rd/Fremont Ave

Signal=Protect/Rights=Include
Final Vol: 409 751 31***
Lanes: 0 1 1 1 0

Final Vol: Lanes: Signal=Protect Rights=Overlap
364*** 2
0
206 2
0
161 1

Vol Cnt Date: n/a
Cycle Time (sec): 195
Loss Time (sec): 12
Critical V/C: 0.788
Avg Crit Del (sec/veh): 67.9
Avg Delay (sec/veh): 52.1
LOS: D-

Signal=Protect Rights=Include Lanes: Final Vol:
0 139
1
0 48***
0
1 11

Lanes: 2 0 1 1 0
Final Vol: 84 1111*** 31
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	84	1107	25	31	737	409	364	206	161	11	48	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	1107	25	31	737	409	364	206	161	11	48	139
Added Vol:	0	4	6	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	1111	31	31	751	409	364	206	161	11	48	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	1111	31	31	751	409	364	206	161	11	48	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1111	31	31	751	409	364	206	161	11	48	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1111	31	31	751	409	364	206	161	11	48	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.95	0.98	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.94	0.06	0.08	1.92	1.00	2.00	2.00	1.00	1.00	0.26	0.74
Final Sat.:	3150	3599	100	147	3555	1800	3150	3800	1750	1750	462	1338
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.31	0.21	0.21	0.23	0.12	0.05	0.09	0.01	0.10	0.10
Crit Moves:		****		****			****				****	
Green Time:	17.6	76.4	76.4	52.3	111	111.1	28.6	35.1	52.6	19.3	25.7	25.7
Volume/Cap:	0.30	0.79	0.79	0.79	0.37	0.40	0.79	0.30	0.34	0.06	0.79	0.79
Uniform Del:	82.9	52.2	52.2	66.2	22.9	23.3	80.3	69.4	57.3	79.7	82.0	82.0
IncremntDel:	0.6	3.0	3.0	2.8	0.1	0.1	8.8	0.3	0.4	0.2	16.0	16.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	83.5	55.1	55.1	69.1	22.9	23.4	89.1	69.6	57.7	79.8	98.0	98.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.5	55.1	55.1	69.1	22.9	23.4	89.1	69.6	57.7	79.8	98.0	98.0
LOS by Move:	F	E+	E+	E	C+	C	F	E	E+	E-	F	F
HCM2kAvgQ:	3	30	30	22	13	14	14	5	8	1	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #2: Wolfe Rd/Fremont Ave

Signal=Protect/Rights=Include
Final Vol: 554 1465 51***
Lanes: 0 1 1 1 0

Final Vol: Lanes: Signal=Protect Rights=Overlap
356 2
0
405 2
0
329*** 1

Vol Cnt Date: n/a
Cycle Time (sec): 175
Loss Time (sec): 12
Critical V/C: 0.786
Avg Crit Del (sec/veh): 51.1
Avg Delay (sec/veh): 45.7
LOS: D

Signal=Protect Rights=Include Lanes: Final Vol:
0 31
1
0 28
0
1 10***

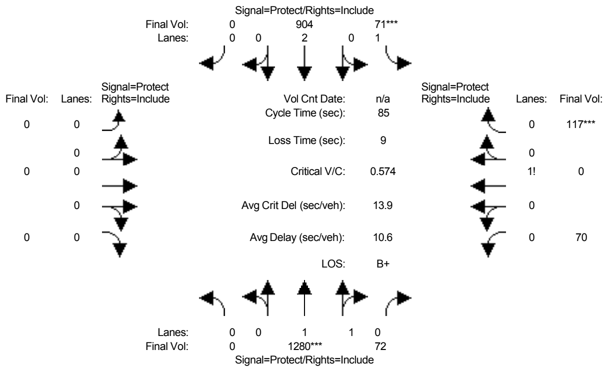
Lanes: 2 0 1 1 0
Final Vol: 159 742*** 45
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	159	737	37	51	1456	554	356	405	329	10	28	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	737	37	51	1456	554	356	405	329	10	28	31
Added Vol:	0	5	8	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	742	45	51	1465	554	356	405	329	10	28	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	742	45	51	1465	554	356	405	329	10	28	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	742	45	51	1465	554	356	405	329	10	28	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	742	45	51	1465	554	356	405	329	10	28	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.88	0.12	0.07	2.11	0.82	2.00	2.00	1.00	1.00	0.47	0.53
Final Sat.:	3150	3488	212	135	3892	1472	3150	3800	1750	1750	854	946
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.21	0.38	0.38	0.38	0.11	0.11	0.19	0.01	0.03	0.03
Crit Moves:		****		****					****	****		
Green Time:	15.0	45.7	45.7	80.8	112	111.5	24.3	29.5	44.5	7.0	12.3	12.3
Volume/Cap:	0.59	0.82	0.82	0.82	0.59	0.59	0.82	0.63	0.74	0.14	0.47	0.47
Uniform Del:	77.1	60.7	60.7	40.6	18.5	18.5	73.2	67.7	59.9	81.1	78.2	78.2
IncremntDel:	3.5	5.4	5.4	2.1	0.3	0.3	11.3	2.0	6.5	0.9	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	80.5	66.1	66.1	42.8	18.7	18.7	84.5	69.7	66.4	82.0	81.0	81.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.5	66.1	66.1	42.8	18.7	18.7	84.5	69.7	66.4	82.0	81.0	81.0
LOS by Move:	F	E	E	D	B-	B-	F	E	E	F	F	F
HCM2kAvgQ:	5	20	20	33	21	21	13	11	18	1	4	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3: Wolfe Rd/Marion Wy

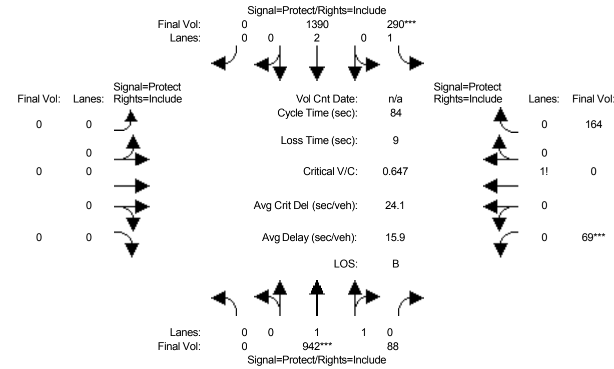


Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1280	72	71	904	0	0	0	0	70	0	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1280	72	71	904	0	0	0	0	70	0	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1280	72	71	904	0	0	0	0	70	0	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1280	72	71	904	0	0	0	0	70	0	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1280	72	71	904	0	0	0	0	70	0	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1280	72	71	904	0	0	0	0	70	0	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	0.37	0.00	0.63
Final Sat.:	0	3503	197	1750	3800	0	0	0	0	655	0	1095
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.37	0.04	0.24	0.00	0.00	0.00	0.00	0.11	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	53.4	53.4	7.0	60.4	0.0	0.0	0.0	0.0	15.6	0.0	15.6
Volume/Cap:	0.00	0.58	0.58	0.49	0.33	0.00	0.00	0.00	0.00	0.58	0.00	0.58
Uniform Del:	0.0	9.3	9.3	37.3	4.7	0.0	0.0	0.0	0.0	31.7	0.0	31.7
IncremntDel:	0.0	0.4	0.4	2.6	0.1	0.0	0.0	0.0	0.0	2.7	0.0	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	34.4	0.0	34.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	34.4	0.0	34.4
LOS by Move:	A	A	A	D	A	A	A	A	A	C-	A	C-
HCM2kAvgQ:	0	10	10	2	4	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3: Wolfe Rd/Marion Wy



Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	942	88	290	1390	0	0	0	0	69	0	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	942	88	290	1390	0	0	0	0	69	0	164
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	942	88	290	1390	0	0	0	0	69	0	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	942	88	290	1390	0	0	0	0	69	0	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	942	88	290	1390	0	0	0	0	69	0	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	942	88	290	1390	0	0	0	0	69	0	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.82	0.18	1.00	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.70
Final Sat.:	0	3384	316	1750	3800	0	0	0	0	518	0	1232
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.28	0.17	0.37	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:		****		****						****		
Green Time:	0.0	36.2	36.2	21.5	57.7	0.0	0.0	0.0	0.0	17.3	0.0	17.3
Volume/Cap:	0.00	0.65	0.65	0.65	0.53	0.00	0.00	0.00	0.00	0.65	0.00	0.65
Uniform Del:	0.0	18.9	18.9	27.8	6.5	0.0	0.0	0.0	0.0	30.6	0.0	30.6
IncremntDel:	0.0	0.9	0.9	3.3	0.2	0.0	0.0	0.0	0.0	4.0	0.0	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.8	19.8	31.1	6.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.8	19.8	31.1	6.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
LOS by Move:	A	B-	B-	C	A	A	A	A	A	C-	A	C-
HCM2kAvgQ:	0	11	11	7	9	0	0	0	0	7	0	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #3: Wolfe Rd/Marion Wy

Signal=Protect/Rights=Include
Final Vol: 0 918 71***
Lanes: 0 0 2 0 1

Final Vol: Lanes: Signal=Protect Rights=Include
0 0
0
0 0
0
0 0

Vol Cnt Date: n/a
Cycle Time (sec): 85
Loss Time (sec): 9
Critical V/C: 0.577
Avg Crit Del (sec/veh): 13.8
Avg Delay (sec/veh): 10.6
LOS: B+

Signal=Protect Rights=Include Lanes: Final Vol:
0 117***
0
1! 0
0
0 70

Lanes: 0 0 1 1 0
Final Vol: 0 1290*** 72
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1280	72	71	904	0	0	0	0	70	0	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1280	72	71	904	0	0	0	0	70	0	117
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1290	72	71	918	0	0	0	0	70	0	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1290	72	71	918	0	0	0	0	70	0	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1290	72	71	918	0	0	0	0	70	0	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1290	72	71	918	0	0	0	0	70	0	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	0.37	0.00	0.63
Final Sat.:	0	3504	196	1750	3800	0	0	0	0	655	0	1095
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.37	0.04	0.24	0.00	0.00	0.00	0.00	0.11	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	53.5	53.5	7.0	60.5	0.0	0.0	0.0	0.0	15.5	0.0	15.5
Volume/Cap:	0.00	0.59	0.59	0.49	0.34	0.00	0.00	0.00	0.00	0.59	0.00	0.59
Uniform Del:	0.0	9.3	9.3	37.3	4.7	0.0	0.0	0.0	0.0	31.8	0.0	31.8
IncremntDel:	0.0	0.4	0.4	2.6	0.1	0.0	0.0	0.0	0.0	2.8	0.0	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
LOS by Move:	A	A	A	D	A	A	A	A	A	C-	A	C-
HCM2kAvgQ:	0	11	11	2	5	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #3: Wolfe Rd/Marion Wy

Signal=Protect/Rights=Include
Final Vol: 0 1399 290***
Lanes: 0 0 2 0 1

Final Vol: Lanes: Signal=Protect Rights=Include
0 0
0
0 0
0
0 0

Vol Cnt Date: n/a
Cycle Time (sec): 84
Loss Time (sec): 9
Critical V/C: 0.650
Avg Crit Del (sec/veh): 24.1
Avg Delay (sec/veh): 15.9
LOS: B

Signal=Protect Rights=Include Lanes: Final Vol:
0 164
0
1! 0
0
0 69***

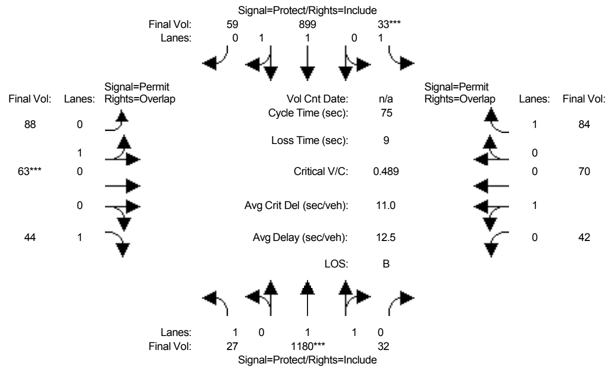
Lanes: 0 0 1 1 0
Final Vol: 0 955*** 88
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	942	88	290	1390	0	0	0	0	69	0	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	942	88	290	1390	0	0	0	0	69	0	164
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	955	88	290	1399	0	0	0	0	69	0	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	955	88	290	1399	0	0	0	0	69	0	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	955	88	290	1399	0	0	0	0	69	0	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	955	88	290	1399	0	0	0	0	69	0	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.83	0.17	1.00	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.70
Final Sat.:	0	3388	312	1750	3800	0	0	0	0	518	0	1232
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.28	0.17	0.37	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:		****		****						****		
Green Time:	0.0	36.4	36.4	21.4	57.8	0.0	0.0	0.0	0.0	17.2	0.0	17.2
Volume/Cap:	0.00	0.65	0.65	0.65	0.53	0.00	0.00	0.00	0.00	0.65	0.00	0.65
Uniform Del:	0.0	18.8	18.8	28.0	6.5	0.0	0.0	0.0	0.0	30.6	0.0	30.6
IncremntDel:	0.0	1.0	1.0	3.4	0.2	0.0	0.0	0.0	0.0	4.2	0.0	4.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.7	19.7	31.3	6.7	0.0	0.0	0.0	0.0	34.8	0.0	34.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.7	19.7	31.3	6.7	0.0	0.0	0.0	0.0	34.8	0.0	34.8
LOS by Move:	A	B-	B-	C	A	A	A	A	A	C-	A	C-
HCM2kAvgQ:	0	11	11	7	9	0	0	0	0	7	0	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #4: Wolfe Rd/Inverness Wy

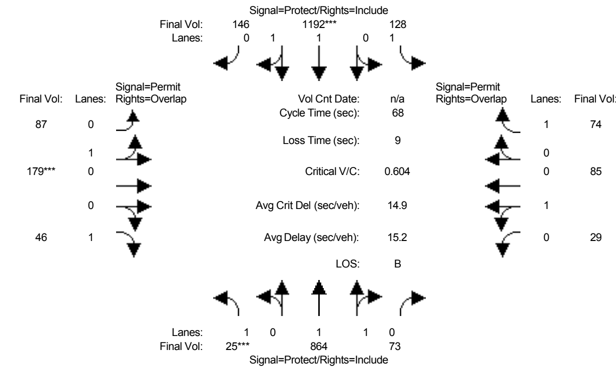


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	27	1180	32	33	899	59	88	63	44	42	70	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1180	32	33	899	59	88	63	44	42	70	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	1180	32	33	899	59	88	63	44	42	70	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	1180	32	33	899	59	88	63	44	42	70	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1180	32	33	899	59	88	63	44	42	70	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1180	32	33	899	59	88	63	44	42	70	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.95	0.05	1.00	1.87	0.13	0.58	0.42	1.00	0.37	0.63	1.00
Final Sat.:	1750	3602	98	1750	3472	228	1049	751	1750	675	1125	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.33	0.33	0.02	0.26	0.26	0.08	0.08	0.03	0.06	0.06	0.05
Crit Moves:		****		****				****				
Green Time:	14.3	47.0	47.0	7.0	39.7	39.7	12.0	12.0	26.3	12.0	12.0	19.0
Volume/Cap:	0.08	0.52	0.52	0.20	0.49	0.49	0.52	0.52	0.07	0.39	0.39	0.19
Uniform Del:	24.9	7.8	7.8	31.4	11.2	11.2	28.9	28.9	16.2	28.2	28.2	21.9
IncremntDel:	0.1	0.2	0.2	0.6	0.2	0.2	1.7	1.7	0.0	0.9	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.1	8.0	8.0	32.0	11.4	11.4	30.6	30.6	16.2	29.1	29.1	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.1	8.0	8.0	32.0	11.4	11.4	30.6	30.6	16.2	29.1	29.1	22.1
LOS by Move:	C	A	A	C-	B+	B+	C	C	B	C	C	C+
HCM2kAvgQ:	1	8	8	1	7	7	4	4	1	3	3	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #4: Wolfe Rd/Inverness Wy

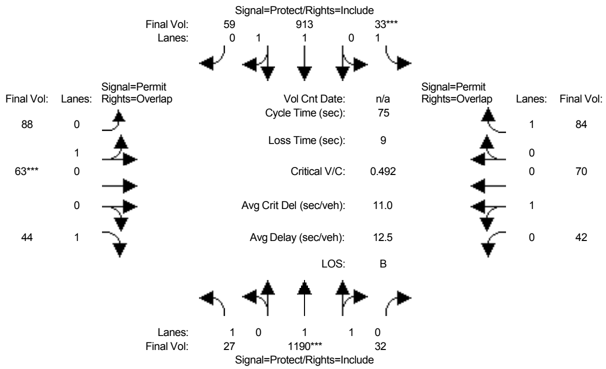


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	25	864	73	128	1192	146	87	179	46	29	85	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	864	73	128	1192	146	87	179	46	29	85	74
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	864	73	128	1192	146	87	179	46	29	85	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	864	73	128	1192	146	87	179	46	29	85	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	864	73	128	1192	146	87	179	46	29	85	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	864	73	128	1192	146	87	179	46	29	85	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.84	0.16	1.00	1.78	0.22	0.33	0.67	1.00	0.25	0.75	1.00
Final Sat.:	1750	3412	288	1750	3296	404	589	1211	1750	458	1342	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.25	0.25	0.07	0.36	0.36	0.15	0.15	0.03	0.06	0.06	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	31.2	31.2	12.7	36.9	36.9	15.1	15.1	22.1	15.1	15.1	27.8
Volume/Cap:	0.14	0.55	0.55	0.39	0.67	0.67	0.67	0.67	0.08	0.29	0.29	0.10
Uniform Del:	27.8	13.3	13.3	24.3	11.1	11.1	24.2	24.2	15.9	22.0	22.0	12.4
IncremntDel:	0.4	0.4	0.4	0.8	0.9	0.9	4.3	4.3	0.1	0.4	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.1	13.7	13.7	25.0	12.0	12.0	28.4	28.4	16.0	22.4	22.4	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.1	13.7	13.7	25.0	12.0	12.0	28.4	28.4	16.0	22.4	22.4	12.5
LOS by Move:	C	B	B	C	B+	B+	C	C	B	C+	C+	B
HCM2kAvgQ:	0	7	7	2	10	10	7	7	1	2	2	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #4: Wolfe Rd/Inverness Wy

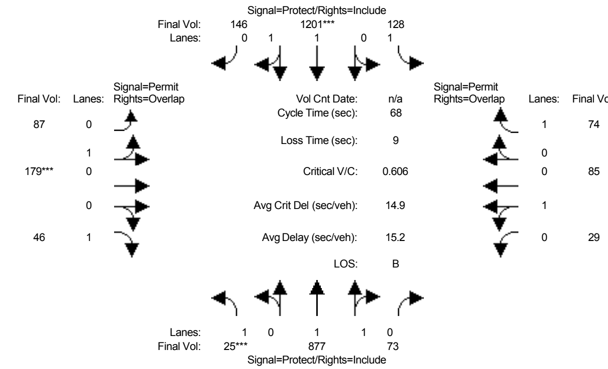


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	27	1180	32	33	899	59	88	63	44	42	70	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1180	32	33	899	59	88	63	44	42	70	84
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	1190	32	33	913	59	88	63	44	42	70	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	1190	32	33	913	59	88	63	44	42	70	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1190	32	33	913	59	88	63	44	42	70	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1190	32	33	913	59	88	63	44	42	70	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.95	0.05	1.00	1.88	0.12	0.58	0.42	1.00	0.37	0.63	1.00
Final Sat.:	1750	3603	97	1750	3475	225	1049	751	1750	675	1125	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.33	0.33	0.02	0.26	0.26	0.08	0.08	0.03	0.06	0.06	0.05
Crit Moves:		****		****				****				
Green Time:	14.2	47.0	47.0	7.0	39.9	39.9	12.0	12.0	26.1	12.0	12.0	19.0
Volume/Cap:	0.08	0.53	0.53	0.20	0.49	0.49	0.53	0.53	0.07	0.39	0.39	0.19
Uniform Del:	25.1	7.8	7.8	31.4	11.2	11.2	28.9	28.9	16.3	28.3	28.3	22.0
IncremntDel:	0.1	0.2	0.2	0.6	0.2	0.2	1.8	1.8	0.1	0.9	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.2	8.0	8.0	32.0	11.3	11.3	30.7	30.7	16.4	29.1	29.1	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.2	8.0	8.0	32.0	11.3	11.3	30.7	30.7	16.4	29.1	29.1	22.2
LOS by Move:	C	A	A	C-	B+	B+	C	C	B	C	C	C+
HCM2kAvgQ:	1	8	8	1	7	7	4	4	1	3	3	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #4: Wolfe Rd/Inverness Wy

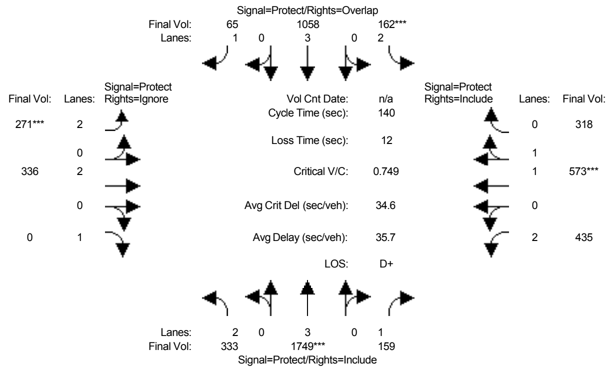


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	25	864	73	128	1192	146	87	179	46	29	85	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	864	73	128	1192	146	87	179	46	29	85	74
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	877	73	128	1201	146	87	179	46	29	85	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	877	73	128	1201	146	87	179	46	29	85	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	877	73	128	1201	146	87	179	46	29	85	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	877	73	128	1201	146	87	179	46	29	85	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.84	0.16	1.00	1.78	0.22	0.33	0.67	1.00	0.25	0.75	1.00
Final Sat.:	1750	3415	284	1750	3299	401	589	1211	1750	458	1342	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.26	0.26	0.07	0.36	0.36	0.15	0.15	0.03	0.06	0.06	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	31.4	31.4	12.6	37.0	37.0	15.0	15.0	22.0	15.0	15.0	27.6
Volume/Cap:	0.14	0.56	0.56	0.40	0.67	0.67	0.67	0.67	0.08	0.29	0.29	0.10
Uniform Del:	27.8	13.3	13.3	24.4	11.1	11.1	24.2	24.2	16.0	22.0	22.0	12.5
IncremntDel:	0.4	0.4	0.4	0.8	0.9	0.9	4.4	4.4	0.1	0.4	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.1	13.7	13.7	25.2	12.0	12.0	28.6	28.6	16.0	22.4	22.4	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.1	13.7	13.7	25.2	12.0	12.0	28.6	28.6	16.0	22.4	22.4	12.6
LOS by Move:	C	B	B	C	B	B	C	C	B	C+	C+	B
HCM2kAvgQ:	0	7	7	2	10	10	7	7	1	2	2	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5: De Anza Blvd/Homestead Rd

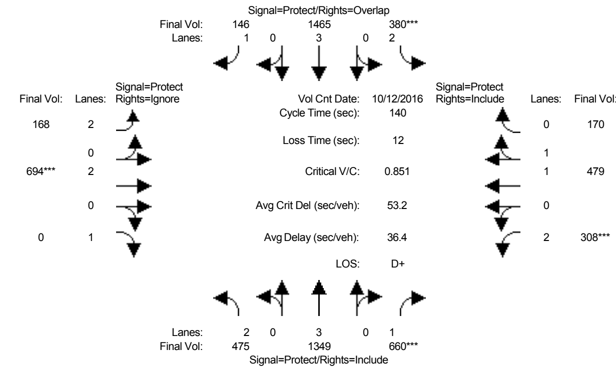


Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	333	1749	159	162	1058	65	271	336	304	435	573	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	333	1749	159	162	1058	65	271	336	304	435	573	318
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	333	1749	159	162	1058	65	271	336	304	435	573	318
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	333	1749	159	162	1058	65	271	336	0	435	573	318
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	1749	159	162	1058	65	271	336	0	435	573	318
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	333	1749	159	162	1058	65	271	336	0	435	573	318
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.27	0.73
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2378	1320
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.09	0.05	0.19	0.04	0.09	0.09	0.00	0.14	0.24	0.24
Crit Moves:		****		****			****				****	
Green Time:	24.3	57.3	57.3	9.6	42.6	58.7	16.1	23.8	0.0	37.2	45.0	45.0
Volume/Cap:	0.61	0.75	0.22	0.75	0.61	0.09	0.75	0.52	0.00	0.52	0.75	0.75
Uniform Del:	53.5	35.2	26.9	64.0	41.6	24.5	60.0	52.9	0.0	43.8	42.5	42.5
IncremntDel:	2.0	1.4	0.2	13.5	0.6	0.1	8.4	0.8	0.0	0.6	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.86	0.54	0.54	0.95	0.71	0.52	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	48.0	20.3	14.6	74.4	30.1	12.8	68.5	53.6	0.0	44.3	45.2	45.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.0	20.3	14.6	74.4	30.1	12.8	68.5	53.6	0.0	44.3	45.2	45.2
LOS by Move:	D	C+	B	E	C	B	E	D-	A	D	D	D
HCM2kAvgQ:	8	17	3	6	11	1	8	7	0	8	15	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5: De Anza Blvd/Homestead Rd

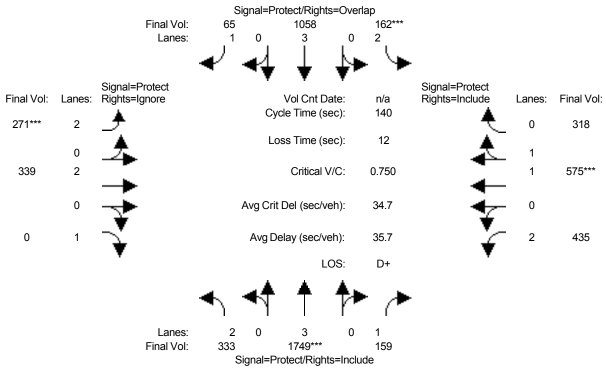


Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 12 Oct 2016 << 5:15 - 6:15 PM												
Base Vol:	475	1349	660	380	1465	146	168	694	345	308	479	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	1349	660	380	1465	146	168	694	345	308	479	170
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	475	1349	660	380	1465	146	168	694	345	308	479	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	475	1349	660	380	1465	146	168	694	0	308	479	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	475	1349	660	380	1465	146	168	694	0	308	479	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	475	1349	660	380	1465	146	168	694	0	308	479	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.46	0.54
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2730	969
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.38	0.12	0.26	0.08	0.05	0.18	0.00	0.10	0.18	0.18
Crit Moves:			****	****				****		****		
Green Time:	30.3	62.0	62.0	19.8	51.6	62.4	10.8	30.0	0.0	16.1	35.4	35.4
Volume/Cap:	0.70	0.53	0.85	0.85	0.70	0.19	0.69	0.85	0.00	0.85	0.69	0.69
Uniform Del:	50.6	28.4	34.9	58.6	37.6	23.5	63.0	52.8	0.0	60.8	47.4	47.4
IncremntDel:	3.2	0.2	8.9	14.4	1.0	0.1	8.5	8.5	0.0	17.2	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.82	0.47	0.47	0.89	0.61	0.46	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	44.5	13.6	25.3	66.6	24.0	11.0	71.5	61.4	0.0	78.0	49.7	49.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	13.6	25.3	66.6	24.0	11.0	71.5	61.4	0.0	78.0	49.7	49.7
LOS by Move:	D	B	C	E	C	B+	E	E	A	E-	D	D
HCM2kAvgQ:	12	9	24	12	15	2	6	16	0	8	12	12

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

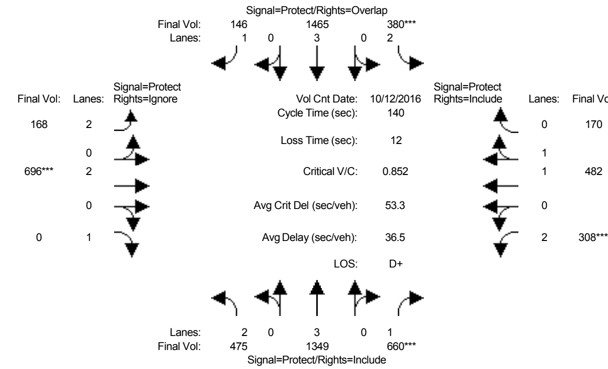
Intersection #5: De Anza Blvd/Homestead Rd




```
Street Name:         De Anza Boulevard                   Homestead Road
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    7   10    10     7   10    10     7   10    10     7   10    10
Y+R:         5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    333 1749   159   162 1058    65   271  336   304   435  573   318
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 333 1749   159   162 1058    65   271  336   304   435  573   318
Added Vol:     0    0     0     0    0     0     0    3     0     0    2     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 333 1749   159   162 1058    65   271  339   304   435  575   318
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:  333 1749   159   162 1058    65   271  339     0   435  575   318
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 333 1749   159   162 1058    65   271  339     0   435  575   318
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
FinalVolume: 333 1749   159   162 1058    65   271  339     0   435  575   318
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment: 0.83 1.00  0.92  0.83 1.00  0.92  0.83 1.00  0.92  0.83 0.99  0.95
Lanes:      2.00 3.00  1.00  2.00 3.00  1.00  2.00 2.00  1.00  2.00 1.27  0.73
Final Sat.: 3150 5700  1750  3150 5700  1750  3150 3800  1750  3150 2381  1317
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.11 0.31  0.09  0.05 0.19  0.04  0.09 0.09  0.00  0.14 0.24  0.24
Crit Moves:      ****        ****             ****                   ****
Green Time: 24.3 57.3  57.3   9.6 42.6  58.7  16.1 24.0   0.0  37.1 45.1  45.1
Volume/Cap: 0.61 0.75  0.22  0.75 0.61  0.09  0.75 0.52  0.00  0.52 0.75  0.75
Uniform Del: 53.5 35.3 26.9  64.0 41.6  24.5  60.0 52.8   0.0  43.8 42.4  42.4
IncremntDel:  2.0  1.4  0.2  13.6  0.6   0.1   8.5  0.8   0.0   0.6  2.7   2.7
InitQueuDel:  0.0  0.0  0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:  0.86 0.54  0.54  0.95 0.71  0.52  1.00 1.00  0.00  1.00 1.00  1.00
Delay/Veh:  48.0 20.4  14.6  74.5 30.1  12.8  68.5 53.5   0.0  44.4 45.1  45.1
User DelAdj: 1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 48.0 20.4  14.6  74.5 30.1  12.8  68.5 53.5   0.0  44.4 45.1  45.1
LOS by Move:   D   C+     B     E    C     B     E   D-     A     D    D     D
HCM2kAvgQ:     8   17     3     6   11     1     8    7     0     8   15    15
Note: Queue reported is the number of cars per lane.
```


Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

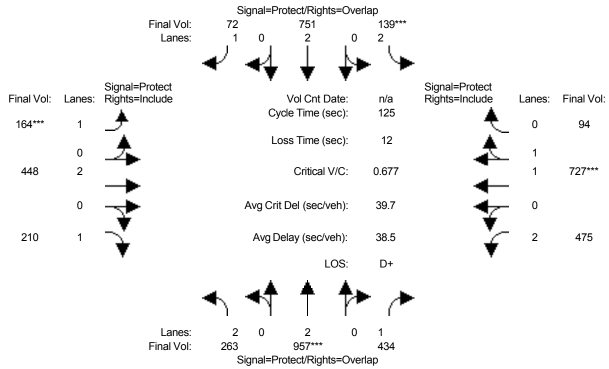
Intersection #5: De Anza Blvd/Homestead Rd




```
Street Name:         De Anza Boulevard                   Homestead Road
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    7   10    10     7   10    10     7   10    10     7   10    10
Y+R:         5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 12 Oct 2016 << 5:15 - 6:15 PM
Base Vol:    475 1349   660   380 1465   146   168  694   345   308  479   170
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 475 1349   660   380 1465   146   168  694   345   308  479   170
Added Vol:     0    0     0     0    0     0     0    2     0     0    3     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 475 1349   660   380 1465   146   168  696   345   308  482   170
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:  475 1349   660   380 1465   146   168  696     0   308  482   170
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 475 1349   660   380 1465   146   168  696     0   308  482   170
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
FinalVolume: 475 1349   660   380 1465   146   168  696     0   308  482   170
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment: 0.83 1.00  0.92  0.83 1.00  0.92  0.83 1.00  0.92  0.83 0.98  0.95
Lanes:      2.00 3.00  1.00  2.00 3.00  1.00  2.00 2.00  1.00  2.00 1.46  0.54
Final Sat.: 3150 5700  1750  3150 5700  1750  3150 3800  1750  3150 2735   964
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.15 0.24  0.38  0.12 0.26  0.08  0.05 0.18  0.00  0.10 0.18  0.18
Crit Moves:            ****  ****                  ****        ****
Green Time: 30.3 62.0  62.0  19.8 51.6  62.3  10.7 30.1   0.0  16.1 35.5  35.5
Volume/Cap: 0.70 0.53  0.85  0.85 0.70  0.19  0.70 0.85  0.00  0.85 0.70  0.70
Uniform Del: 50.7 28.5 34.9  58.7 37.6  23.5  63.0 52.8   0.0  60.8 47.4  47.4
IncremntDel:  3.2  0.2  9.0  14.5  1.1   0.1   8.6  8.6   0.0  17.3  2.3   2.3
InitQueuDel:  0.0  0.0  0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:  0.82 0.47  0.47  0.89 0.61  0.47  1.00 1.00  0.00  1.00 1.00  1.00
Delay/Veh:  44.5 13.6  25.4  66.7 24.0  11.1  71.6 61.4   0.0  78.1 49.7  49.7
User DelAdj: 1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 44.5 13.6  25.4  66.7 24.0  11.1  71.6 61.4   0.0  78.1 49.7  49.7
LOS by Move:   D    B     C     E    C    B+     E    E     A    E-    D     D
HCM2kAvgQ:    12    9    24    12   15     2     6   16     0     8   12    12
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #6: Wolfe Rd/Homestead Rd

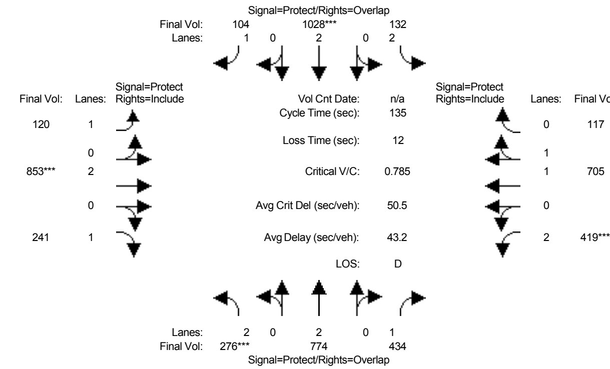


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	957	434	139	751	72	164	448	210	475	727	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	957	434	139	751	72	164	448	210	475	727	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	957	434	139	751	72	164	448	210	475	727	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	957	434	139	751	72	164	448	210	475	727	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	957	434	139	751	72	164	448	210	475	727	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	263	957	434	139	751	72	164	448	210	475	727	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3276	424
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.25	0.04	0.20	0.04	0.09	0.12	0.12	0.15	0.22	0.22
Crit Moves:		****		****			****				****	
Green Time:	16.2	46.5	79.0	8.2	38.4	55.8	17.3	25.8	25.8	32.5	41.0	41.0
Volume/Cap:	0.64	0.68	0.39	0.68	0.64	0.09	0.68	0.57	0.58	0.58	0.68	0.68
Uniform Del:	51.6	32.9	11.3	57.1	37.3	20.0	51.2	44.6	44.7	40.3	36.3	36.3
IncremntDel:	3.5	1.3	0.2	8.7	1.2	0.1	7.4	1.0	2.4	1.1	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.1	34.2	11.5	65.8	38.6	20.1	58.6	45.6	47.1	41.4	37.8	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.1	34.2	11.5	65.8	38.6	20.1	58.6	45.6	47.1	41.4	37.8	37.8
LOS by Move:	E+	C-	B+	E	D+	C+	E+	D	D	D	D+	D+
HCM2kAvgQ:	6	15	9	3	12	2	7	8	8	9	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #6: Wolfe Rd/Homestead Rd

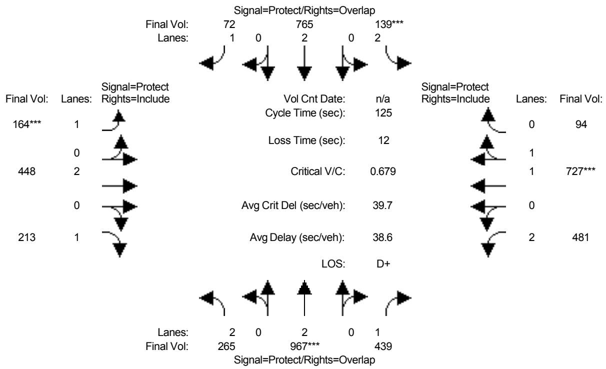


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	276	774	434	132	1028	104	120	853	241	419	705	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	276	774	434	132	1028	104	120	853	241	419	705	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	276	774	434	132	1028	104	120	853	241	419	705	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	276	774	434	132	1028	104	120	853	241	419	705	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	276	774	434	132	1028	104	120	853	241	419	705	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	276	774	434	132	1028	104	120	853	241	419	705	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3173	527
Capacity Analysis Module:												
Vol/Sat:	0.09	0.20	0.25	0.04	0.27	0.06	0.07	0.22	0.14	0.13	0.22	0.22
Crit Moves:	****				****			****		****		
Green Time:	15.1	49.1	71.9	12.5	46.5	61.0	14.5	38.6	38.6	22.9	47.0	47.0
Volume/Cap:	0.79	0.56	0.47	0.45	0.79	0.13	0.64	0.79	0.48	0.79	0.64	0.64
Uniform Del:	58.4	34.3	19.6	58.0	39.8	21.6	57.7	44.4	39.9	53.7	36.9	36.9
IncremntDel:	11.1	0.5	0.4	1.1	3.2	0.1	7.2	3.8	0.7	7.6	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.5	34.9	20.0	59.1	43.0	21.6	64.9	48.2	40.7	61.3	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.5	34.9	20.0	59.1	43.0	21.6	64.9	48.2	40.7	61.3	38.0	38.0
LOS by Move:	E	C-	B-	E+	D	C+	E	D	D	E	D+	D+
HCM2kAvgQ:	7	12	12	3	19	3	5	16	8	10	14	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #6: Wolfe Rd/Homestead Rd

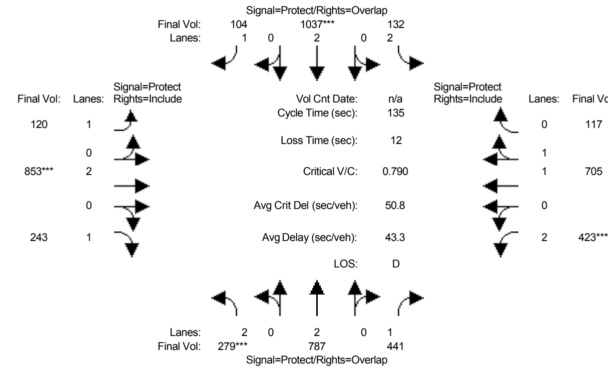


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	957	434	139	751	72	164	448	210	475	727	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	957	434	139	751	72	164	448	210	475	727	94
Added Vol:	2	10	5	0	14	0	0	0	3	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	265	967	439	139	765	72	164	448	213	481	727	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	265	967	439	139	765	72	164	448	213	481	727	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	967	439	139	765	72	164	448	213	481	727	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	265	967	439	139	765	72	164	448	213	481	727	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3276	424
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.25	0.04	0.20	0.04	0.09	0.12	0.12	0.15	0.22	0.22
Crit Moves:		****		****			****				****	
Green Time:	16.2	46.8	79.1	8.1	38.7	56.0	17.2	25.8	25.8	32.3	40.8	40.8
Volume/Cap:	0.65	0.68	0.40	0.68	0.65	0.09	0.68	0.57	0.59	0.59	0.68	0.68
Uniform Del:	51.7	32.8	11.2	57.2	37.3	19.9	51.3	44.7	44.9	40.6	36.4	36.4
IncremntDel:	3.7	1.3	0.2	8.9	1.3	0.1	7.6	1.0	2.6	1.2	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.4	34.1	11.5	66.1	38.6	19.9	58.9	45.7	47.5	41.7	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.4	34.1	11.5	66.1	38.6	19.9	58.9	45.7	47.5	41.7	38.0	38.0
LOS by Move:	E+	C-	B+	E	D+	B-	E+	D	D	D	D+	D+
HCM2kAvgQ:	6	15	9	3	12	2	7	8	8	9	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #6: Wolfe Rd/Homestead Rd

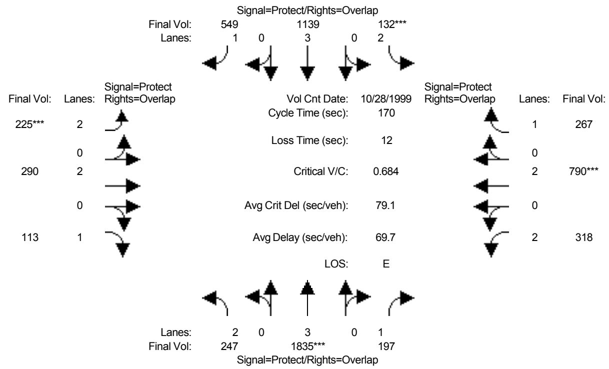


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	276	774	434	132	1028	104	120	853	241	419	705	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	276	774	434	132	1028	104	120	853	241	419	705	117
Added Vol:	3	13	7	0	9	0	0	0	2	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	279	787	441	132	1037	104	120	853	243	423	705	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	279	787	441	132	1037	104	120	853	243	423	705	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	279	787	441	132	1037	104	120	853	243	423	705	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	279	787	441	132	1037	104	120	853	243	423	705	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3173	527
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.25	0.04	0.27	0.06	0.07	0.22	0.14	0.13	0.22	0.22
Crit Moves:	****				****			****		****		
Green Time:	15.1	49.4	72.3	12.4	46.6	61.1	14.4	38.3	38.3	22.9	46.8	46.8
Volume/Cap:	0.79	0.57	0.47	0.46	0.79	0.13	0.64	0.79	0.49	0.79	0.64	0.64
Uniform Del:	58.4	34.3	19.5	58.1	39.8	21.5	57.8	44.6	40.2	53.7	37.0	37.0
IncremntDel:	11.4	0.6	0.4	1.2	3.3	0.1	7.3	4.0	0.8	7.8	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.8	34.8	19.8	59.3	43.1	21.6	65.1	48.6	40.9	61.5	38.1	38.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	34.8	19.8	59.3	43.1	21.6	65.1	48.6	40.9	61.5	38.1	38.1
LOS by Move:	E	C-	B-	E+	D	C+	E	D	D	E	D+	D+
HCM2kAvgQ:	7	13	12	3	19	3	5	16	8	10	14	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #7: Lawrence Expwy/Homestead Rd

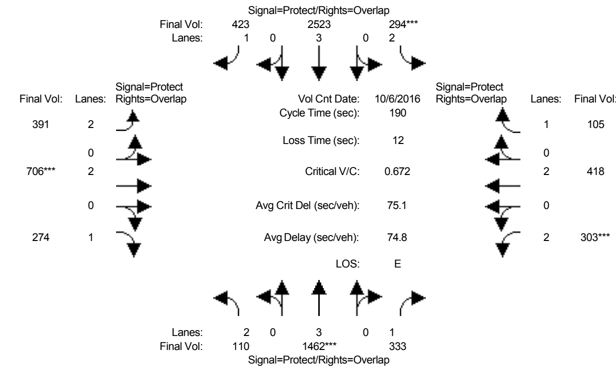


Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 28 Oct 1999 << 7:00-9:00												
Base Vol:	247	2294	197	132	1442	549	225	290	113	318	790	267
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	247	2294	197	132	1442	549	225	290	113	318	790	267
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	247	2294	197	132	1442	549	225	290	113	318	790	267
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	247	1835	197	132	1139	549	225	290	113	318	790	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	247	1835	197	132	1139	549	225	290	113	318	790	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	247	1835	197	132	1139	549	225	290	113	318	790	267
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.32	0.11	0.04	0.20	0.31	0.07	0.08	0.06	0.10	0.21	0.15
Crit Moves:		****		****			****				****	
Green Time:	15.4	72.7	95.6	25.4	82.8	105.6	22.8	38.9	54.3	22.8	38.9	64.3
Volume/Cap:	0.87	0.75	0.20	0.28	0.41	0.51	0.53	0.33	0.20	0.75	0.91	0.40
Uniform Del:	90.2	48.5	21.7	75.9	33.1	21.0	81.1	64.7	49.8	83.8	75.4	45.9
IncremntDel:	23.5	1.4	0.1	0.3	0.1	0.4	1.3	0.2	0.2	7.4	13.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.7	74.1	40.4	85.1	54.1	44.4	82.4	64.9	50.0	91.2	88.7	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.7	74.1	40.4	85.1	54.1	44.4	82.4	64.9	50.0	91.2	88.7	46.3
LOS by Move:	F	E	D	F	D-	D	F	E	D	F	F	D
HCM2kAvgQ:	11	36	10	5	20	30	7	7	5	13	26	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #7: Lawrence Expwy/Homestead Rd



Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Oct 2016 << 5:15 - 6:15 PM												
Base Vol:	110	1828	333	294	3194	423	391	706	274	303	418	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	1828	333	294	3194	423	391	706	274	303	418	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	1828	333	294	3194	423	391	706	274	303	418	105
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	1462	333	294	2523	423	391	706	274	303	418	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	1462	333	294	2523	423	391	706	274	303	418	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	1462	333	294	2523	423	391	706	274	303	418	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.19	0.09	0.44	0.24	0.12	0.19	0.16	0.10	0.11	0.06
Crit Moves:		****		****				****		****		
Green Time:	17.2	81.3	106.8	28.4	92.5	118.0	25.5	43.5	60.6	25.5	43.5	71.8
Volume/Cap:	0.39	0.60	0.34	0.63	0.91	0.39	0.92	0.81	0.49	0.72	0.48	0.16
Uniform Del:	86.2	44.3	23.8	80.2	47.5	19.0	86.0	73.4	55.2	83.3	67.2	41.3
IncremntDel:	0.9	0.4	0.2	2.6	5.0	0.2	25.9	5.8	0.7	5.8	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	92.8	66.7	44.4	92.3	82.5	40.1	111.9	79.2	55.9	89.1	67.6	41.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.8	66.7	44.4	92.3	82.5	40.1	111.9	79.2	55.9	89.1	67.6	41.5
LOS by Move:	F	E	D	F	F	D	F	E-	E+	F	E	D
HCM2kAvgQ:	4	27	18	11	52	23	15	20	14	12	11	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #7: Lawrence Expwy/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 552 1139 132***
Lanes: 1 0 3 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
227***	2		Vol Cnt Date:	10/28/1999		1	267
			Cycle Time (sec):	170			
	0		Loss Time (sec):	12		0	
292	2		Critical V/C:	0.686		2	793***
	0		Avg Crit Del (sec/veh):	79.2		0	
114	1		Avg Delay (sec/veh):	69.7		2	318
			LOS:	E			

Lanes: 2 0 3 0 1
Final Vol: 247 1835*** 197
Signal=Protect/Rights=Overlap

Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 28 Oct 1999 << 7:00-9:00												
Base Vol:	247	2294	197	132	1442	549	225	290	113	318	790	267
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	247	2294	197	132	1442	549	225	290	113	318	790	267
Added Vol:	0	0	0	0	0	3	2	2	1	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	247	2294	197	132	1442	552	227	292	114	318	793	267
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	247	1835	197	132	1139	552	227	292	114	318	793	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	247	1835	197	132	1139	552	227	292	114	318	793	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	247	1835	197	132	1139	552	227	292	114	318	793	267
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.32	0.11	0.04	0.20	0.32	0.07	0.08	0.07	0.10	0.21	0.15
Crit Moves:		****		****			****				****	
Green Time:	15.4	72.7	95.6	25.4	82.8	105.6	22.8	38.9	54.3	22.8	38.9	64.3
Volume/Cap:	0.87	0.75	0.20	0.28	0.41	0.51	0.54	0.34	0.20	0.75	0.91	0.40
Uniform Del:	90.2	48.5	21.7	75.9	33.1	21.1	81.2	64.7	49.8	83.8	75.5	45.9
IncremntDel:	23.5	1.4	0.1	0.3	0.1	0.4	1.4	0.2	0.2	7.4	13.7	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.7	74.1	40.4	85.1	54.1	44.5	82.5	65.0	50.0	91.2	89.2	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.7	74.1	40.4	85.1	54.1	44.5	82.5	65.0	50.0	91.2	89.2	46.3
LOS by Move:	F	E	D	F	D-	D	F	E	D	F	F	D
HCM2kAvgQ:	11	36	10	5	20	31	8	7	5	13	27	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #7: Lawrence Expwy/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 425 2523 294***
Lanes: 1 0 3 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
394	2		Vol Cnt Date:	10/6/2016		1	105
			Cycle Time (sec):	190			
	0		Loss Time (sec):	12		0	
709***	2		Critical V/C:	0.673		2	420
	0		Avg Crit Del (sec/veh):	75.2		0	
276	1		Avg Delay (sec/veh):	74.9		2	303***
			LOS:	E			

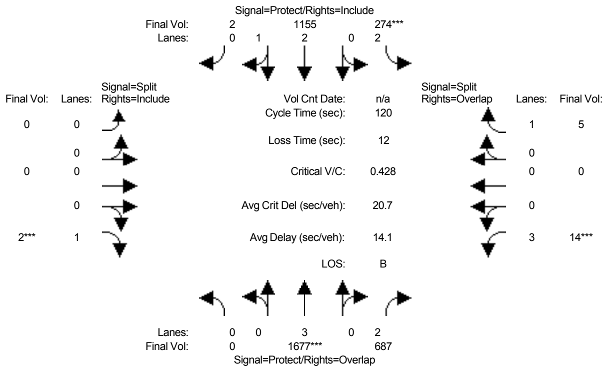
Lanes: 2 0 3 0 1
Final Vol: 110 1462*** 333
Signal=Protect/Rights=Overlap

Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Oct 2016 << 5:15 - 6:15 PM												
Base Vol:	110	1828	333	294	3194	423	391	706	274	303	418	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	1828	333	294	3194	423	391	706	274	303	418	105
Added Vol:	0	0	0	0	0	2	3	3	2	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	1828	333	294	3194	425	394	709	276	303	420	105
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	1462	333	294	2523	425	394	709	276	303	420	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	1462	333	294	2523	425	394	709	276	303	420	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	1462	333	294	2523	425	394	709	276	303	420	105
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.19	0.09	0.44	0.24	0.13	0.19	0.16	0.10	0.11	0.06
Crit Moves:		****		****				****		****		
Green Time:	17.2	81.3	106.8	28.4	92.5	118.0	25.5	43.5	60.6	25.5	43.5	71.8
Volume/Cap:	0.39	0.60	0.34	0.63	0.91	0.39	0.93	0.82	0.49	0.72	0.48	0.16
Uniform Del:	86.2	44.3	23.8	80.2	47.5	19.1	86.1	73.5	55.3	83.3	67.2	41.3
IncremntDel:	0.9	0.4	0.2	2.6	5.0	0.2	27.2	6.0	0.7	5.8	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	92.8	66.7	44.4	92.3	82.5	40.1	113.3	79.5	56.0	89.1	67.6	41.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.8	66.7	44.4	92.3	82.5	40.1	113.3	79.5	56.0	89.1	67.6	41.5
LOS by Move:	F	E	D	F	F	D	F	E-	E+	F	E	D
HCM2kAvgQ:	4	27	18	11	52	23	15	20	14	12	11	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #8: Wolfe Rd/Apple Park Wy

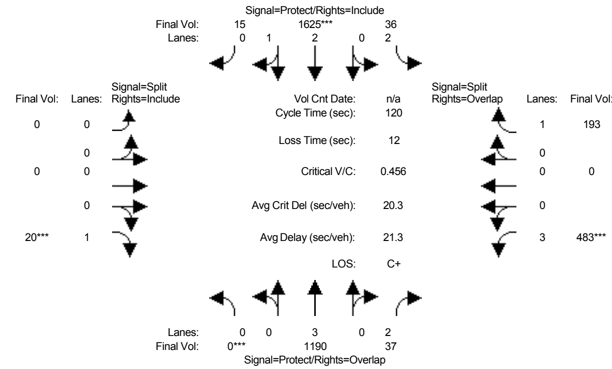


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1677	687	274	1155	2	0	0	2	14	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1677	687	274	1155	2	0	0	2	14	0	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1677	687	274	1155	2	0	0	2	14	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1677	687	274	1155	2	0	0	2	14	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1677	687	274	1155	2	0	0	2	14	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1677	687	274	1155	2	0	0	2	14	0	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.99	0.01	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5590	10	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.22	0.09	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****		****					****	****		
Green Time:	0.0	67.9	77.9	20.1	88.0	88.0	0.0	0.0	10.0	10.0	0.0	30.1
Volume/Cap:	0.00	0.52	0.34	0.52	0.28	0.28	0.00	0.00	0.01	0.04	0.00	0.01
Uniform Del:	0.0	16.0	9.4	45.6	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.8
IncremntDel:	0.0	0.2	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	16.2	9.5	46.5	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.2	9.5	46.5	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.8
LOS by Move:	A	B	A	D	A	A	A	A	D	D	A	C-
HCM2kAvgQ:	0	12	7	5	5	5	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #8: Wolfe Rd/Apple Park Wy

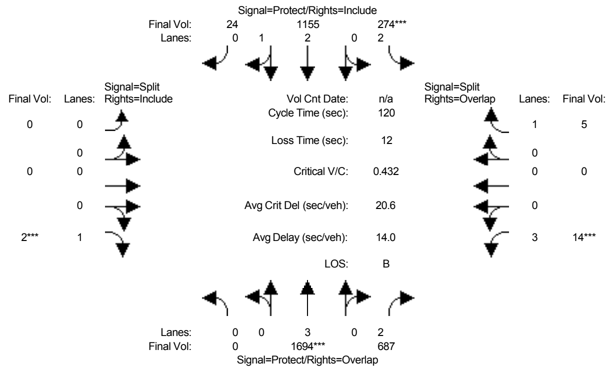


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1190	37	36	1625	15	0	0	20	483	0	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1190	37	36	1625	15	0	0	20	483	0	193
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1190	37	36	1625	15	0	0	20	483	0	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1190	37	36	1625	15	0	0	20	483	0	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1190	37	36	1625	15	0	0	20	483	0	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1190	37	36	1625	15	0	0	20	483	0	193
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.97	0.03	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5549	51	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.01	0.01	0.29	0.29	0.00	0.00	0.01	0.11	0.00	0.11
Crit Moves:	****				****				****	****		
Green Time:	0.0	56.2	82.3	15.7	71.9	71.9	0.0	0.0	10.0	26.1	0.0	41.8
Volume/Cap:	0.00	0.45	0.02	0.09	0.49	0.49	0.00	0.00	0.14	0.49	0.00	0.32
Uniform Del:	0.0	21.4	6.0	45.8	13.6	13.6	0.0	0.0	51.0	41.1	0.0	28.7
IncremntDel:	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.0	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	21.5	6.0	45.9	13.7	13.7	0.0	0.0	51.4	41.5	0.0	29.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.5	6.0	45.9	13.7	13.7	0.0	0.0	51.4	41.5	0.0	29.0
LOS by Move:	A	C+	A	D	B	B	A	A	D-	D	A	C
HCM2kAvgQ:	0	9	0	1	11	11	0	0	1	7	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #8: Wolfe Rd/Apple Park Wy

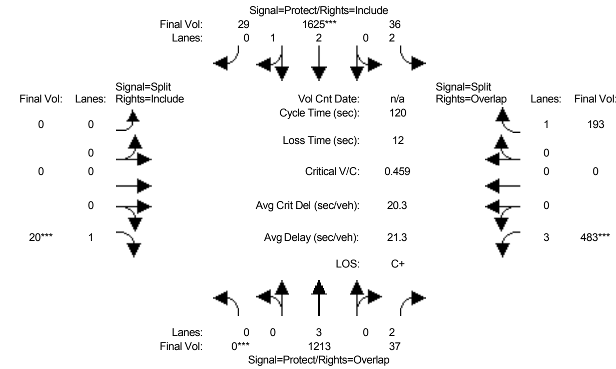


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1677	687	274	1155	2	0	0	2	14	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1677	687	274	1155	2	0	0	2	14	0	5
Added Vol:	0	17	0	0	0	22	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1694	687	274	1155	24	0	0	2	14	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1694	687	274	1155	24	0	0	2	14	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1694	687	274	1155	24	0	0	2	14	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1694	687	274	1155	24	0	0	2	14	0	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.94	0.06	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5486	114	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.22	0.09	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****		****					****	****		
Green Time:	0.0	68.1	78.1	19.9	88.0	88.0	0.0	0.0	10.0	10.0	0.0	29.9
Volume/Cap:	0.00	0.52	0.34	0.52	0.29	0.29	0.00	0.00	0.01	0.04	0.00	0.01
Uniform Del:	0.0	16.0	9.4	45.7	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.9
IncremntDel:	0.0	0.2	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	16.1	9.5	46.7	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.1	9.5	46.7	5.4	5.4	0.0	0.0	50.5	50.6	0.0	33.9
LOS by Move:	A	B	A	D	A	A	A	A	D	D	A	C-
HCM2kAvgQ:	0	12	7	5	5	5	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #8: Wolfe Rd/Apple Park Wy

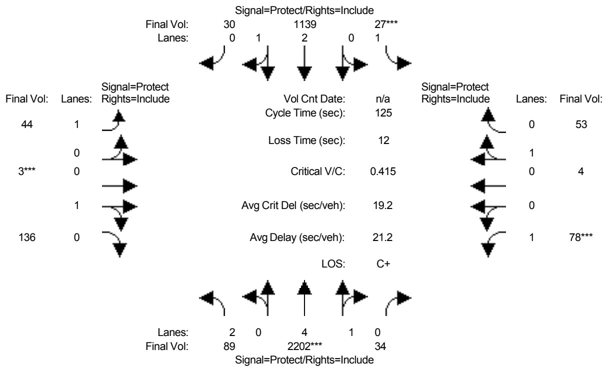


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1190	37	36	1625	15	0	0	20	483	0	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1190	37	36	1625	15	0	0	20	483	0	193
Added Vol:	0	23	0	0	0	14	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1213	37	36	1625	29	0	0	20	483	0	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1213	37	36	1625	29	0	0	20	483	0	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1213	37	36	1625	29	0	0	20	483	0	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1213	37	36	1625	29	0	0	20	483	0	193
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.95	0.05	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5502	98	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.01	0.01	0.30	0.30	0.00	0.00	0.01	0.11	0.00	0.11
Crit Moves:	****				****				****	****		
Green Time:	0.0	56.6	82.5	15.5	72.1	72.1	0.0	0.0	10.0	25.9	0.0	41.4
Volume/Cap:	0.00	0.45	0.02	0.09	0.49	0.49	0.00	0.00	0.14	0.49	0.00	0.32
Uniform Del:	0.0	21.3	5.9	46.0	13.6	13.6	0.0	0.0	51.0	41.3	0.0	28.9
IncremntDel:	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.0	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	21.4	5.9	46.1	13.7	13.7	0.0	0.0	51.4	41.7	0.0	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.4	5.9	46.1	13.7	13.7	0.0	0.0	51.4	41.7	0.0	29.2
LOS by Move:	A	C+	A	D	B	B	A	A	D-	D	A	C
HCM2kAvgQ:	0	10	0	1	11	11	0	0	1	7	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #9: Wolfe Rd/Pruneridge Ave

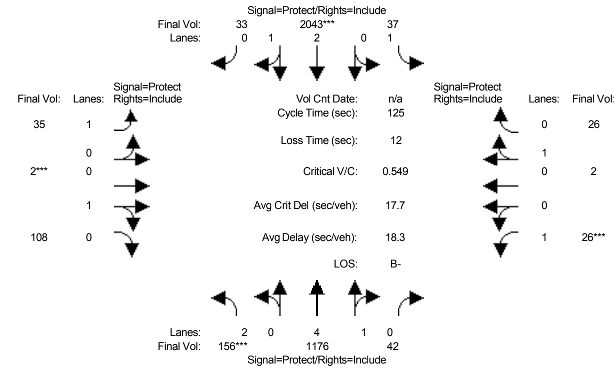


Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	89	2202	34	27	1139	30	44	3	136	78	4	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	2202	34	27	1139	30	44	3	136	78	4	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	2202	34	27	1139	30	44	3	136	78	4	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	2202	34	27	1139	30	44	3	136	78	4	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	2202	34	27	1139	30	44	3	136	78	4	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	2202	34	27	1139	30	44	3	136	78	4	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.92	0.08	1.00	2.92	0.08	1.00	0.02	0.98	1.00	0.07	0.93
Final Sat.:	3150	9257	143	1750	5456	144	1750	39	1761	1750	126	1674
Capacity Analysis Module:												
Vol/Sat:	0.03	0.24	0.24	0.02	0.21	0.21	0.03	0.08	0.08	0.04	0.03	0.03
Crit Moves:		****		****				****		****		
Green Time:	16.3	70.1	70.1	7.0	60.8	60.8	14.8	22.8	22.8	13.1	21.1	21.1
Volume/Cap:	0.22	0.42	0.42	0.28	0.43	0.43	0.21	0.42	0.42	0.42	0.19	0.19
Uniform Del:	48.6	15.8	15.8	56.6	20.8	20.8	49.8	45.3	45.3	52.4	44.6	44.6
IncremntDel:	0.3	0.1	0.1	1.5	0.1	0.1	0.5	0.9	0.9	1.6	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.9	15.9	15.9	58.1	20.9	20.9	50.4	46.2	46.2	54.0	44.9	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	15.9	15.9	58.1	20.9	20.9	50.4	46.2	46.2	54.0	44.9	44.9
LOS by Move:	D	B	B	E+	C+	C+	D	D	D	D-	D	D
HCM2kAvgQ:	2	10	10	1	10	10	2	5	5	3	2	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #9: Wolfe Rd/Pruneridge Ave



Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	156	1176	42	37	2043	33	35	2	108	26	2	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1176	42	37	2043	33	35	2	108	26	2	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	156	1176	42	37	2043	33	35	2	108	26	2	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	1176	42	37	2043	33	35	2	108	26	2	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	1176	42	37	2043	33	35	2	108	26	2	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	1176	42	37	2043	33	35	2	108	26	2	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.82	0.18	1.00	2.95	0.05	1.00	0.02	0.98	1.00	0.07	0.93
Final Sat.:	3150	9075	324	1750	5511	89	1750	33	1767	1750	129	1671
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.02	0.37	0.37	0.02	0.06	0.06	0.01	0.02	0.02
Crit Moves:	****				****			****		****		
Green Time:	10.9	64.6	64.6	27.9	81.6	81.6	8.4	13.5	13.5	7.0	12.0	12.0
Volume/Cap:	0.57	0.25	0.25	0.09	0.57	0.57	0.30	0.57	0.57	0.27	0.16	0.16
Uniform Del:	54.8	16.8	16.8	38.5	12.0	12.0	55.5	53.0	53.0	56.5	51.9	51.9
IncremntDel:	2.8	0.0	0.0	0.1	0.2	0.2	1.4	3.9	3.9	1.5	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.6	16.8	16.8	38.6	12.2	12.2	56.9	56.9	56.9	58.0	52.3	52.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.6	16.8	16.8	38.6	12.2	12.2	56.9	56.9	56.9	58.0	52.3	52.3
LOS by Move:	E+	B	B	D+	B	B	E+	E+	E+	E+	D-	D-
HCM2kAvgQ:	4	5	5	1	15	15	2	5	5	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #9: Wolfe Rd/Pruneridge Ave

Signal=Protect/Rights=Include

Final Vol: 30 1139 27***
Lanes: 0 1 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
61	1		Vol Cnt Date:	n/a			
			Cycle Time (sec):	125		0	53
	0		Loss Time (sec):	12		1	
3***	0		Critical V/C:	0.429		0	4
	1		Avg Crit Del (sec/veh):	20.6		0	
159	0		Avg Delay (sec/veh):	22.8		1	78***
			LOS:	C+			

Lanes: 2 0 4 1 0
Final Vol: 123 2202*** 34
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	89	2202	34	27	1139	30	44	3	136	78	4	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	2202	34	27	1139	30	44	3	136	78	4	53
Added Vol:	34	0	0	0	0	0	17	0	23	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	2202	34	27	1139	30	61	3	159	78	4	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	2202	34	27	1139	30	61	3	159	78	4	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	2202	34	27	1139	30	61	3	159	78	4	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	2202	34	27	1139	30	61	3	159	78	4	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.92	0.08	1.00	2.92	0.08	1.00	0.02	0.98	1.00	0.07	0.93
Final Sat.:	3150	9257	143	1750	5456	144	1750	33	1767	1750	126	1674
Capacity Analysis Module:												
Vol/Sat:	0.04	0.24	0.24	0.02	0.21	0.21	0.03	0.09	0.09	0.04	0.03	0.03
Crit Moves:		****		****				****		****		
Green Time:	15.8	67.7	67.7	7.0	58.9	58.9	15.8	25.6	25.6	12.7	22.5	22.5
Volume/Cap:	0.31	0.44	0.44	0.28	0.44	0.44	0.28	0.44	0.44	0.44	0.18	0.18
Uniform Del:	49.6	17.2	17.2	56.6	22.1	22.1	49.4	43.4	43.4	52.8	43.4	43.4
IncremntDel:	0.4	0.1	0.1	1.5	0.1	0.1	0.7	0.8	0.8	1.7	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.1	17.3	17.3	58.1	22.2	22.2	50.1	44.3	44.3	54.5	43.6	43.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.1	17.3	17.3	58.1	22.2	22.2	50.1	44.3	44.3	54.5	43.6	43.6
LOS by Move:	D	B	B	E+	C+	C+	D	D	D	D-	D	D
HCM2kAvgQ:	3	10	10	1	10	10	2	6	6	4	2	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #9: Wolfe Rd/Pruneridge Ave

Signal=Protect/Rights=Include

Final Vol: 33 2043*** 37
Lanes: 0 1 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
58	1		Vol Cnt Date:	n/a			
			Cycle Time (sec):	125		0	26
	0		Loss Time (sec):	12		1	
2***	0		Critical V/C:	0.575		0	2
	1		Avg Crit Del (sec/veh):	20.4		0	
138	0		Avg Delay (sec/veh):	20.6		1	26***
			LOS:	C+			

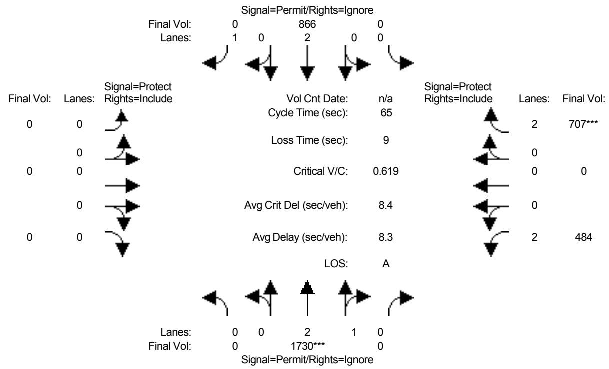
Lanes: 2 0 4 1 0
Final Vol: 178*** 1176 42
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	156	1176	42	37	2043	33	35	2	108	26	2	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1176	42	37	2043	33	35	2	108	26	2	26
Added Vol:	22	0	0	0	0	0	23	0	30	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	1176	42	37	2043	33	58	2	138	26	2	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1176	42	37	2043	33	58	2	138	26	2	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1176	42	37	2043	33	58	2	138	26	2	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1176	42	37	2043	33	58	2	138	26	2	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.82	0.18	1.00	2.95	0.05	1.00	0.01	0.99	1.00	0.07	0.93
Final Sat.:	3150	9075	324	1750	5511	89	1750	26	1774	1750	129	1671
Capacity Analysis Module:												
Vol/Sat:	0.06	0.13	0.13	0.02	0.37	0.37	0.03	0.08	0.08	0.01	0.02	0.02
Crit Moves:	****				****			****		****		
Green Time:	11.9	62.6	62.6	27.1	77.8	77.8	9.6	16.3	16.3	7.0	13.7	13.7
Volume/Cap:	0.60	0.26	0.26	0.10	0.60	0.60	0.43	0.60	0.60	0.27	0.14	0.14
Uniform Del:	54.3	17.9	17.9	39.2	14.2	14.2	55.1	51.2	51.2	56.5	50.3	50.3
IncremntDel:	3.2	0.0	0.0	0.1	0.3	0.3	2.2	4.1	4.1	1.5	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.5	17.9	17.9	39.3	14.4	14.4	57.3	55.3	55.3	58.0	50.6	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.5	17.9	17.9	39.3	14.4	14.4	57.3	55.3	55.3	58.0	50.6	50.6
LOS by Move:	E+	B	B	D	B	B	E+	E+	E+	E+	D	D
HCM2kAvgQ:	5	5	5	1	16	16	3	6	6	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #10: Wolfe Rd/I-280 NB Ramps

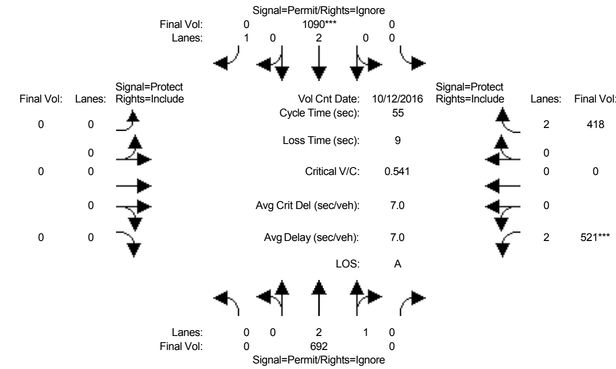


Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1730	412	0	866	490	0	0	0	484	0	707
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1730	412	0	866	490	0	0	0	484	0	707
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1730	412	0	866	490	0	0	0	484	0	707
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1730	0	0	866	0	0	0	0	484	0	707
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1730	0	0	866	0	0	0	0	484	0	707
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1730	0	0	866	0	0	0	0	484	0	707
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.15	0.00	0.22
Crit Moves:		****										****
Green Time:	0.0	32.4	0.0	0.0	32.4	0.0	0.0	0.0	0.0	23.6	0.0	23.6
Volume/Cap:	0.00	0.62	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.42	0.00	0.62
Uniform Del:	0.0	11.8	0.0	0.0	10.6	0.0	0.0	0.0	0.0	15.6	0.0	17.0
IncremntDel:	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.34	0.00	0.00	0.34	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	4.4	0.0	0.0	3.7	0.0	0.0	0.0	0.0	15.9	0.0	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.4	0.0	0.0	3.7	0.0	0.0	0.0	0.0	15.9	0.0	18.1
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	B-
HCM2kAvgQ:	0	5	0	0	3	0	0	0	0	5	0	8

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #10: Wolfe Rd/I-280 NB Ramps

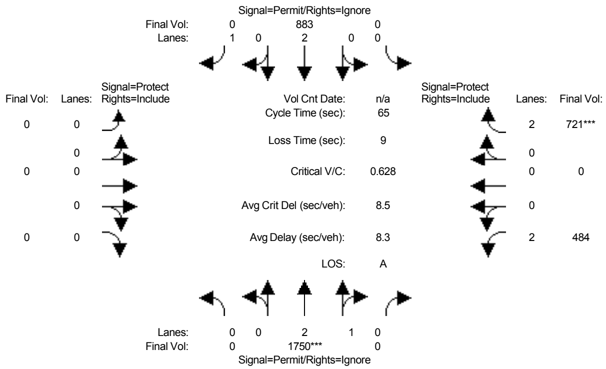


Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 12 Oct 2016 << 5:15 - 6:15 PM												
Base Vol:	0	692	484	0	1090	512	0	0	0	521	0	418
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	692	484	0	1090	512	0	0	0	521	0	418
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	692	484	0	1090	512	0	0	0	521	0	418
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	692	0	0	1090	0	0	0	0	521	0	418
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	692	0	0	1090	0	0	0	0	521	0	418
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	692	0	0	1090	0	0	0	0	521	0	418
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.17	0.00	0.13
Crit Moves:					****					****		
Green Time:	0.0	29.2	0.0	0.0	29.2	0.0	0.0	0.0	0.0	16.8	0.0	16.8
Volume/Cap:	0.00	0.23	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.54	0.00	0.43
Uniform Del:	0.0	6.9	0.0	0.0	8.5	0.0	0.0	0.0	0.0	15.9	0.0	15.3
IncremntDel:	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.6	0.0	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	1.7	0.0	0.0	2.4	0.0	0.0	0.0	0.0	16.5	0.0	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.7	0.0	0.0	2.4	0.0	0.0	0.0	0.0	16.5	0.0	15.6
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	B
HCM2kAvgQ:	0	1	0	0	3	0	0	0	0	5	0	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

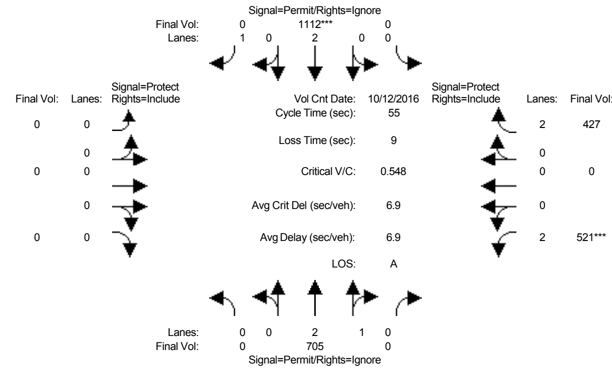
Intersection #10: Wolfe Rd/I-280 NB Ramps




```
Street Name:          Wolfe Road                 I-280 Northbound Ramps
Approach:      North Bound    South Bound    East Bound     West Bound
Movement:     L  -  T  -  R  L  -  T  -  R  L  -  T  -  R  L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    7   10    10    7   10    10    0    0     0   10   10    10
Y+R:         5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0 1730   412    0  866   490    0    0     0  484    0   707
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0 1730   412    0  866   490    0    0     0  484    0   707
Added Vol:     0   20     0    0   17     0    0    0     0    0    0    14
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0 1750   412    0  883   490    0    0     0  484    0   721
User Adj:    1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0 1750     0    0  883     0    0    0     0  484    0   721
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0 1750     0    0  883     0    0    0     0  484    0   721
PCE Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0 1750     0    0  883     0    0    0     0  484    0   721
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.92 0.98  0.92 0.92 1.00  0.92 0.92 1.00  0.92 0.83 1.00  0.83
Lanes:       0.00 3.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 2.00 0.00  2.00
Final Sat.:    0 5600     0    0 3800  1750    0    0     0 3150    0  3150
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.31  0.00 0.00 0.23  0.00 0.00 0.00  0.00 0.15 0.00  0.23
Crit Moves:       ****                                                    ****
Green Time:   0.0 32.3   0.0  0.0 32.3   0.0  0.0  0.0   0.0 23.7  0.0  23.7
Volume/Cap:  0.00 0.63  0.00 0.00 0.47  0.00 0.00 0.00  0.00 0.42 0.00  0.63
Uniform Del:  0.0 11.9   0.0  0.0 10.7   0.0  0.0  0.0   0.0 15.5  0.0  17.0
IncremntDel:  0.0  0.5   0.0  0.0  0.2   0.0  0.0  0.0   0.0  0.3  0.0   1.1
InitQueuDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:   0.00 0.34  0.00 0.00 0.34  0.00 0.00 0.00  0.00 1.00 0.00  1.00
Delay/Veh:    0.0  4.5   0.0  0.0  3.8   0.0  0.0  0.0   0.0 15.8  0.0  18.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  4.5   0.0  0.0  3.8   0.0  0.0  0.0   0.0 15.8  0.0  18.2
LOS by Move:    A    A     A    A    A     A    A    A     A    B    A    B-
HCM2kAvgQ:      0    5     0    0    3     0    0    0     0    5    0     8
Note: Queue reported is the number of cars per lane.
```


Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #10: Wolfe Rd/I-280 NB Ramps




```
Street Name:          Wolfe Road                 I-280 Northbound Ramps
Approach:      North Bound    South Bound    East Bound     West Bound
Movement:     L  -  T  -  R  L  -  T  -  R  L  -  T  -  R  L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    7   10    10    7   10    10    0    0     0   10   10    10
Y+R:         5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 12 Oct 2016 << 5:15 - 6:15 PM
Base Vol:      0  692   484    0 1090   512    0    0     0  521    0   418
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0  692   484    0 1090   512    0    0     0  521    0   418
Added Vol:     0   13     0    0   22     0    0    0     0    0    0     9
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0  705   484    0 1112   512    0    0     0  521    0   427
User Adj:    1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0  705     0    0 1112     0    0    0     0  521    0   427
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0  705     0    0 1112     0    0    0     0  521    0   427
PCE Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0  705     0    0 1112     0    0    0     0  521    0   427
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.92 0.98  0.92 0.92 1.00  0.92 0.92 1.00  0.92 0.83 1.00  0.83
Lanes:       0.00 3.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 2.00 0.00  2.00
Final Sat.:    0 5600     0    0 3800  1750    0    0     0 3150    0  3150
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.13  0.00 0.00 0.29  0.00 0.00 0.00  0.00 0.17 0.00  0.14
Crit Moves:                      ****                          ****
Green Time:   0.0 29.4   0.0  0.0 29.4   0.0  0.0  0.0   0.0 16.6  0.0  16.6
Volume/Cap:  0.00 0.24  0.00 0.00 0.55  0.00 0.00 0.00  0.00 0.55 0.00  0.45
Uniform Del:  0.0  6.8   0.0  0.0  8.4   0.0  0.0  0.0   0.0 16.1  0.0  15.5
IncremntDel:  0.0  0.0   0.0  0.0  0.3   0.0  0.0  0.0   0.0  0.7  0.0   0.3
InitQueuDel:  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0
Delay Adj:   0.00 0.23  0.00 0.00 0.23  0.00 0.00 0.00  0.00 1.00 0.00  1.00
Delay/Veh:    0.0  1.6   0.0  0.0  2.3   0.0  0.0  0.0   0.0 16.7  0.0  15.8
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  1.6   0.0  0.0  2.3   0.0  0.0  0.0   0.0 16.7  0.0  15.8
LOS by Move:    A    A     A    A    A     A    A    A     A    B    A     B
HCM2kAvgQ:      0    1     0    0    3     0    0    0     0    5    0     4
Note: Queue reported is the number of cars per lane.
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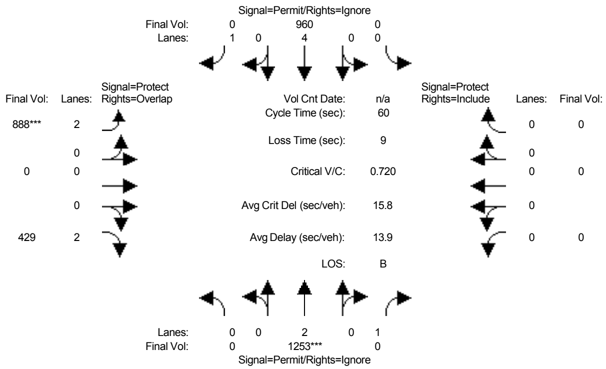
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #11: Wolfe Rd/I-280 SB Ramps

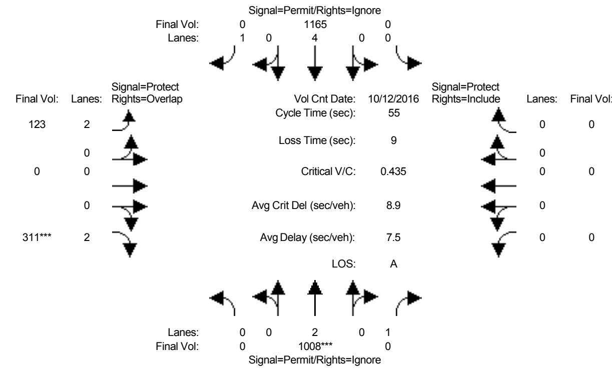


Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1253	432	0	960	391	888	0	429	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1253	432	0	960	391	888	0	429	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1253	432	0	960	391	888	0	429	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1253	0	0	960	0	888	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1253	0	0	960	0	888	0	429	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1253	0	0	960	0	888	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.13	0.00	0.28	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	27.5	0.0	0.0	27.5	0.0	23.5	0.0	23.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.72	0.00	0.00	0.28	0.00	0.72	0.00	0.35	0.00	0.00	0.00
Uniform Del:	0.0	13.1	0.0	0.0	10.1	0.0	15.5	0.0	12.8	0.0	0.0	0.0
IncremntDel:	0.0	1.5	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.6	0.0	0.0	10.1	0.0	17.5	0.0	13.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B+	A	B	A	B	A	A	A
HCM2kAvgQ:	0	7	0	0	2	0	10	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #11: Wolfe Rd/I-280 SB Ramps



Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 12 Oct 2016 << 5:00 PM to 6:00 PM												
Base Vol:	0	1008	606	0	1165	418	123	0	311	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1008	606	0	1165	418	123	0	311	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1008	606	0	1165	418	123	0	311	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1008	0	0	1165	0	123	0	311	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1008	0	0	1165	0	123	0	311	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1008	0	0	1165	0	123	0	311	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.00	0.00	0.15	0.00	0.04	0.00	0.10	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	33.5	0.0	0.0	33.5	0.0	12.5	0.0	12.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.44	0.00	0.00	0.25	0.00	0.17	0.00	0.44	0.00	0.00	0.00
Uniform Del:	0.0	5.7	0.0	0.0	5.0	0.0	17.1	0.0	18.2	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	5.8	0.0	0.0	5.0	0.0	17.2	0.0	18.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	5.8	0.0	0.0	5.0	0.0	17.2	0.0	18.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B	A	B-	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	1	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #11: Wolfe Rd/I-280 SB Ramps

```
                         Signal=Permit/Rights=Ignore
              Final Vol:     0        967        0
                 Lanes:      1    0    4    0    0

Final Vol:  Lanes:  Signal=Protect         Vol Cnt Date:         n/a       Signal=Protect     Lanes:  Final Vol:
                    Rights=Overlap         Cycle Time (sec):     60        Rights=Include
896***        2                                                                              0        0
              0                            Loss Time (sec):      9                           0
0             0                            Critical V/C:         0.726                       0        0
              0                            Avg Crit Del (sec/veh): 16.0                      0
429           2                            Avg Delay (sec/veh):  14.0                        0        0
                                           LOS:                  B

                 Lanes:      0    0    2    0    1
              Final Vol:     0        1264***    0
                         Signal=Permit/Rights=Ignore
```

```
Street Name:            Wolfe Road                      I-280 Southbound Ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||---------------||---------------||---------------|
Min. Green:    7   10    10     7   10    10    10   10    10     0    0     0
Y+R:         5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|-----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0 1253   432     0  960   391   888    0   429     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0 1253   432     0  960   391   888    0   429     0    0     0
Added Vol:     0   11     0     0    7     0     8    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   0 1264   432     0  967   391   896    0   429     0    0     0
User Adj:    1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0 1264     0     0  967     0   896    0   429     0    0     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0 1264     0     0  967     0   896    0   429     0    0     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   0 1264     0     0  967     0   896    0   429     0    0     0
------------|-----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.92  0.92 1.00  0.92  0.83 1.00  0.83  0.92 1.00  0.92
Lanes:       0.00 2.00  1.00  0.00 4.00  1.00  2.00 0.00  2.00  0.00 0.00  0.00
Final Sat.:    0 3800  1750     0 7600  1750  3150    0  3150     0    0     0
------------|-----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.33  0.00  0.00 0.13  0.00  0.28 0.00  0.14  0.00 0.00  0.00
Crit Moves:       ****                         ****
Green Time:   0.0 27.5   0.0   0.0 27.5   0.0  23.5  0.0  23.5   0.0  0.0   0.0
Volume/Cap:  0.00 0.73  0.00  0.00 0.28  0.00  0.73 0.00  0.35  0.00 0.00  0.00
Uniform Del:  0.0 13.2   0.0   0.0 10.1   0.0  15.5  0.0  12.8   0.0  0.0   0.0
IncremntDel:  0.0  1.6   0.0   0.0  0.0   0.0   2.2  0.0   0.2   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  0.00  0.00 1.00  0.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0 14.8   0.0   0.0 10.1   0.0  17.7  0.0  13.0   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 14.8   0.0   0.0 10.1   0.0  17.7  0.0  13.0   0.0  0.0   0.0
LOS by Move:   A    B     A     A   B+     A     B    A     B     A    A     A
HCM2kAvgQ:     0    7     0     0    2     0    10    0     4     0    0     0
Note: Queue reported is the number of cars per lane.
```


Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

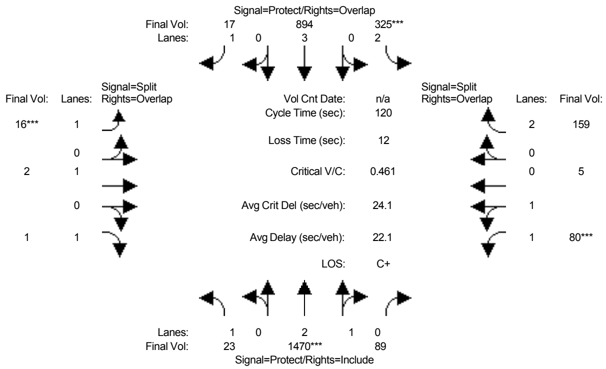
Intersection #11: Wolfe Rd/I-280 SB Ramps

```
                         Signal=Permit/Rights=Ignore
              Final Vol:     0        1174       0
                 Lanes:      1    0    4    0    0

Final Vol:  Lanes:  Signal=Protect         Vol Cnt Date:         10/12/2016 Signal=Protect    Lanes:  Final Vol:
                    Rights=Overlap         Cycle Time (sec):     55         Rights=Include
128           2                                                                              0        0
              0                            Loss Time (sec):      9                           0
0             0                            Critical V/C:         0.437                       0        0
              0                            Avg Crit Del (sec/veh): 8.8                       0
311***        2                            Avg Delay (sec/veh):  7.5                         0        0
                                           LOS:                  A

                 Lanes:      0    0    2    0    1
              Final Vol:     0        1015***    0
                         Signal=Permit/Rights=Ignore
```

```
Street Name:            Wolfe Road                      I-280 Southbound Ramps
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||---------------||---------------||---------------|
Min. Green:    7   10    10     7   10    10    10   10    10     0    0     0
Y+R:         5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|-----------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 12 Oct 2016 << 5:00 PM to 6:00 PM
Base Vol:      0 1008   606     0 1165   418   123    0   311     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0 1008   606     0 1165   418   123    0   311     0    0     0
Added Vol:     0    7     0     0    9     0     5    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   0 1015   606     0 1174   418   128    0   311     0    0     0
User Adj:    1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0 1015     0     0 1174     0   128    0   311     0    0     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0 1015     0     0 1174     0   128    0   311     0    0     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   0 1015     0     0 1174     0   128    0   311     0    0     0
------------|-----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.92  0.92 1.00  0.92  0.83 1.00  0.83  0.92 1.00  0.92
Lanes:       0.00 2.00  1.00  0.00 4.00  1.00  2.00 0.00  2.00  0.00 0.00  0.00
Final Sat.:    0 3800  1750     0 7600  1750  3150    0  3150     0    0     0
------------|-----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.27  0.00  0.00 0.15  0.00  0.04 0.00  0.10  0.00 0.00  0.00
Crit Moves:       ****                                     ****
Green Time:   0.0 33.6   0.0   0.0 33.6   0.0  12.4  0.0  12.4   0.0  0.0   0.0
Volume/Cap:  0.00 0.44  0.00  0.00 0.25  0.00  0.18 0.00  0.44  0.00 0.00  0.00
Uniform Del:  0.0  5.7   0.0   0.0  4.9   0.0  17.2  0.0  18.3   0.0  0.0   0.0
IncremntDel:  0.0  0.1   0.0   0.0  0.0   0.0   0.1  0.0   0.4   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  0.00  0.00 1.00  0.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0  5.8   0.0   0.0  5.0   0.0  17.3  0.0  18.7   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  5.8   0.0   0.0  5.0   0.0  17.3  0.0  18.7   0.0  0.0   0.0
LOS by Move:   A    A     A     A    A     A     B    A    B-     A    A     A
HCM2kAvgQ:     0    0     0     0    0     0     1    0     3     0    0     0
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #12: Wolfe Rd/Vallco Pkwy

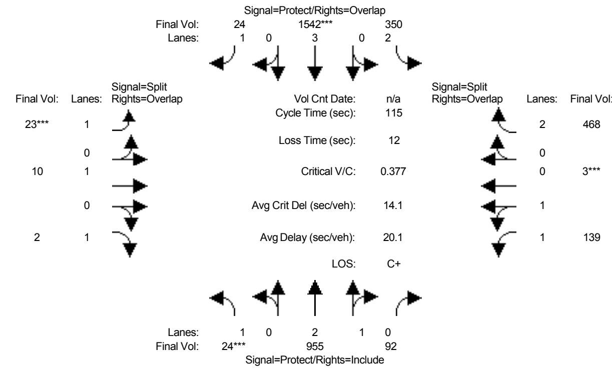


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	1470	89	325	894	17	16	2	1	80	5	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	1470	89	325	894	17	16	2	1	80	5	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	1470	89	325	894	17	16	2	1	80	5	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	1470	89	325	894	17	16	2	1	80	5	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1470	89	325	894	17	16	2	1	80	5	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	1470	89	325	894	17	16	2	1	80	5	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.82	0.18	2.00	3.00	1.00	1.00	1.00	1.00	1.88	0.12	2.00
Final Sat.:	1750	5280	320	3150	5700	1750	1750	1900	1750	3341	209	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.28	0.10	0.16	0.01	0.01	0.00	0.00	0.02	0.02	0.05
Crit Moves:		****		****			****			****		
Green Time:	23.9	64.2	64.2	23.8	64.1	74.1	10.0	10.0	33.9	10.0	10.0	33.8
Volume/Cap:	0.07	0.52	0.52	0.52	0.29	0.02	0.11	0.01	0.00	0.29	0.29	0.18
Uniform Del:	39.0	18.0	18.0	43.0	15.4	8.8	50.9	50.5	30.9	51.7	51.7	32.6
IncremntDel:	0.1	0.2	0.2	0.8	0.1	0.0	0.3	0.0	0.0	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.1	18.1	18.1	43.8	15.5	8.9	51.2	50.5	30.9	52.2	52.2	32.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.1	18.1	18.1	43.8	15.5	8.9	51.2	50.5	30.9	52.2	52.2	32.7
LOS by Move:	D	B-	B-	D	B	A	D-	D	C	D-	D-	C-
HCM2kAvgQ:	1	12	12	6	6	0	1	0	0	2	2	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #12: Wolfe Rd/Vallco Pkwy

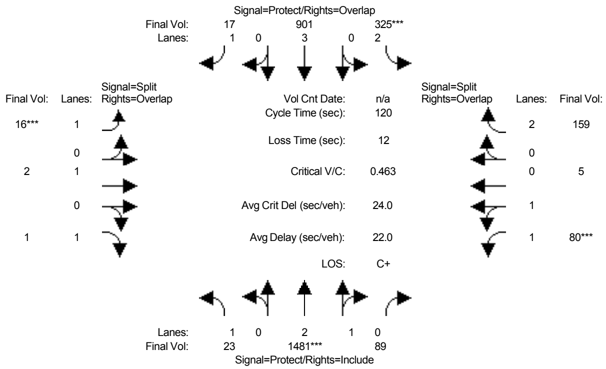


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	955	92	350	1542	24	23	10	2	139	3	468
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	955	92	350	1542	24	23	10	2	139	3	468
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	955	92	350	1542	24	23	10	2	139	3	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	955	92	350	1542	24	23	10	2	139	3	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	955	92	350	1542	24	23	10	2	139	3	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	955	92	350	1542	24	23	10	2	139	3	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.73	0.27	2.00	3.00	1.00	1.00	1.00	1.00	1.96	0.04	2.00
Final Sat.:	1750	5107	492	3150	5700	1750	1750	1900	1750	3475	75	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.19	0.19	0.11	0.27	0.01	0.01	0.01	0.00	0.04	0.04	0.15
Crit Moves:	****				****		****				****	
Green Time:	7.0	51.4	51.4	30.5	74.9	84.9	10.0	10.0	17.0	11.1	11.1	41.6
Volume/Cap:	0.23	0.42	0.42	0.42	0.42	0.02	0.15	0.06	0.01	0.42	0.42	0.41
Uniform Del:	51.4	21.6	21.6	34.9	9.6	4.0	48.6	48.2	41.8	48.9	48.9	27.5
IncremntDel:	1.1	0.1	0.1	0.3	0.1	0.0	0.5	0.2	0.0	0.8	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.5	21.8	21.8	35.2	9.6	4.0	49.0	48.3	41.8	49.7	49.7	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	21.8	21.8	35.2	9.6	4.0	49.0	48.3	41.8	49.7	49.7	27.7
LOS by Move:	D-	C+	C+	D+	A	A	D	D	D	D	D	C
HCM2kAvgQ:	1	8	8	6	8	0	1	0	0	3	3	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #12: Wolfe Rd/Vallco Pkwy

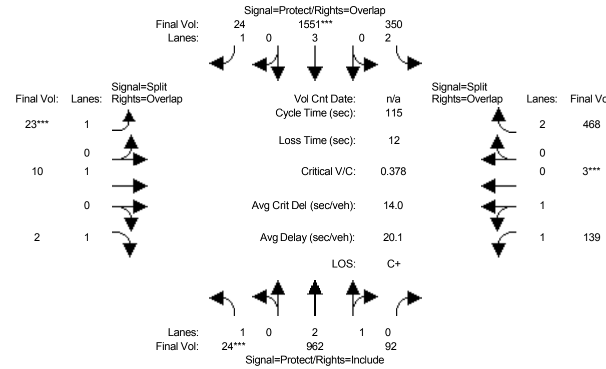


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	1470	89	325	894	17	16	2	1	80	5	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	1470	89	325	894	17	16	2	1	80	5	159
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	1481	89	325	901	17	16	2	1	80	5	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	1481	89	325	901	17	16	2	1	80	5	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1481	89	325	901	17	16	2	1	80	5	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	1481	89	325	901	17	16	2	1	80	5	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.82	0.18	2.00	3.00	1.00	1.00	1.00	1.00	1.88	0.12	2.00
Final Sat.:	1750	5282	317	3150	5700	1750	1750	1900	1750	3341	209	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.28	0.10	0.16	0.01	0.01	0.00	0.00	0.02	0.02	0.05
Crit Moves:		****		****			****			****		
Green Time:	23.7	64.3	64.3	23.7	64.3	74.3	10.0	10.0	33.7	10.0	10.0	33.7
Volume/Cap:	0.07	0.52	0.52	0.52	0.30	0.02	0.11	0.01	0.00	0.29	0.29	0.18
Uniform Del:	39.1	17.9	17.9	43.1	15.4	8.8	50.9	50.5	31.0	51.7	51.7	32.7
IncremntDel:	0.1	0.2	0.2	0.8	0.1	0.0	0.3	0.0	0.0	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.2	18.1	18.1	43.9	15.4	8.8	51.2	50.5	31.0	52.2	52.2	32.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.2	18.1	18.1	43.9	15.4	8.8	51.2	50.5	31.0	52.2	52.2	32.8
LOS by Move:	D	B-	B-	D	B	A	D-	D	C	D-	D-	C-
HCM2kAvgQ:	1	12	12	6	6	0	1	0	0	2	2	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #12: Wolfe Rd/Vallco Pkwy

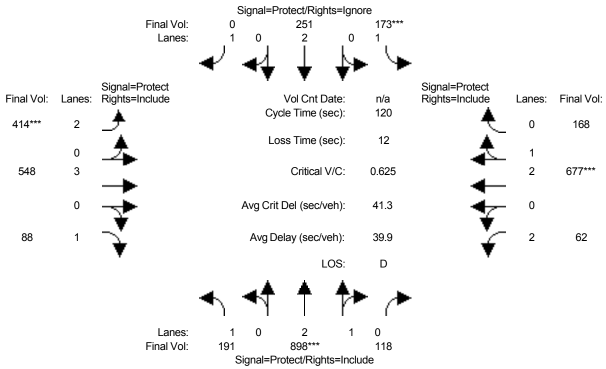


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	955	92	350	1542	24	23	10	2	139	3	468
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	955	92	350	1542	24	23	10	2	139	3	468
Added Vol:	0	7	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	962	92	350	1551	24	23	10	2	139	3	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	962	92	350	1551	24	23	10	2	139	3	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	962	92	350	1551	24	23	10	2	139	3	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	962	92	350	1551	24	23	10	2	139	3	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.73	0.27	2.00	3.00	1.00	1.00	1.00	1.00	1.96	0.04	2.00
Final Sat.:	1750	5111	489	3150	5700	1750	1750	1900	1750	3475	75	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.19	0.19	0.11	0.27	0.01	0.01	0.01	0.00	0.04	0.04	0.15
Crit Moves:	****				****		****				****	
Green Time:	7.0	51.5	51.5	30.4	75.0	85.0	10.0	10.0	17.0	11.0	11.0	41.5
Volume/Cap:	0.23	0.42	0.42	0.42	0.42	0.02	0.15	0.06	0.01	0.42	0.42	0.41
Uniform Del:	51.4	21.6	21.6	35.0	9.6	4.0	48.6	48.2	41.8	49.0	49.0	27.6
IncremntDel:	1.1	0.1	0.1	0.3	0.1	0.0	0.5	0.2	0.0	0.8	0.8	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.5	21.7	21.7	35.3	9.6	4.0	49.0	48.3	41.8	49.8	49.8	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	21.7	21.7	35.3	9.6	4.0	49.0	48.3	41.8	49.8	49.8	27.9
LOS by Move:	D-	C+	C+	D+	A	A	D	D	D	D	D	C
HCM2kAvgQ:	1	8	8	6	9	0	1	0	0	3	3	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

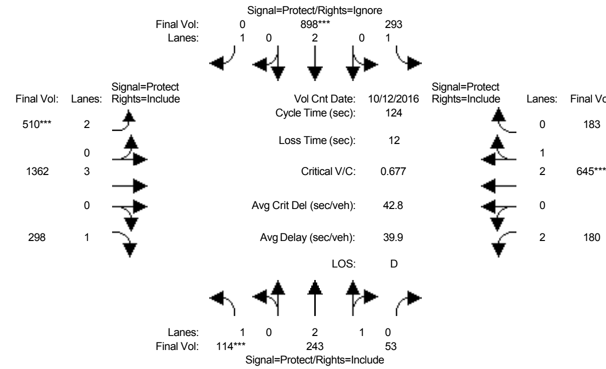


Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	191	898	118	173	251	472	414	548	88	62	677	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	898	118	173	251	472	414	548	88	62	677	168
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	898	118	173	251	472	414	548	88	62	677	168
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	898	118	173	251	0	414	548	88	62	677	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	898	118	173	251	0	414	548	88	62	677	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	898	118	173	251	0	414	548	88	62	677	168
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.64	0.36	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.38	0.62
Final Sat.:	1750	4949	650	1750	3800	1750	3150	5700	1750	3150	4485	1113
Capacity Analysis Module:												
Vol/Sat:	0.11	0.18	0.18	0.10	0.07	0.00	0.13	0.10	0.05	0.02	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	30.5	34.8	34.8	19.0	23.3	0.0	25.2	33.7	33.7	20.5	29.0	29.0
Volume/Cap:	0.43	0.63	0.63	0.63	0.34	0.00	0.63	0.34	0.18	0.12	0.63	0.63
Uniform Del:	37.5	36.9	36.9	47.2	41.7	0.0	43.1	34.3	32.7	42.1	40.7	40.7
IncremntDel:	0.7	0.8	0.8	4.4	0.3	0.0	1.9	0.1	0.2	0.1	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.1	37.7	37.7	51.6	42.0	0.0	45.0	34.4	32.8	42.2	41.6	41.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	37.7	37.7	51.6	42.0	0.0	45.0	34.4	32.8	42.2	41.6	41.6
LOS by Move:	D+	D+	D+	D-	D	A	D	C-	C-	D	D	D
HCM2kAvgQ:	6	11	11	6	4	0	8	4	2	1	9	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #13: Wolfe Rd/Stevens Creek Blvd



Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 12 Oct 2016 << 5:30 - 6:30 PM												
Base Vol:	114	243	53	293	898	427	510	1362	298	180	645	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	243	53	293	898	427	510	1362	298	180	645	183
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	243	53	293	898	427	510	1362	298	180	645	183
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	243	53	293	898	0	510	1362	298	180	645	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	243	53	293	898	0	510	1362	298	180	645	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	243	53	293	898	0	510	1362	298	180	645	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.44	0.56	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.31	0.69
Final Sat.:	1750	4596	1002	1750	3800	1750	3150	5700	1750	3150	4361	1237
Capacity Analysis Module:												
Vol/Sat:	0.07	0.05	0.05	0.17	0.24	0.00	0.16	0.24	0.17	0.06	0.15	0.15
Crit Moves:	****				****		****				****	
Green Time:	11.9	18.0	18.0	37.3	43.3	0.0	29.7	45.8	45.8	11.0	27.1	27.1
Volume/Cap:	0.68	0.37	0.37	0.56	0.68	0.00	0.68	0.65	0.46	0.65	0.68	0.68
Uniform Del:	54.2	47.9	47.9	36.4	34.4	0.0	42.8	32.4	29.7	54.7	44.4	44.4
IncremntDel:	10.5	0.3	0.3	1.3	1.4	0.0	2.5	0.7	0.5	5.2	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.7	48.2	48.2	37.8	35.8	0.0	45.3	33.1	30.2	59.9	46.0	46.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.7	48.2	48.2	37.8	35.8	0.0	45.3	33.1	30.2	59.9	46.0	46.0
LOS by Move:	E	D	D	D+	D+	A	D	C-	C	E+	D	D
HCM2kAvgQ:	6	4	4	9	13	0	11	12	7	5	10	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

Signal=Protect/Rights=Ignore
Final Vol: 0 252 177***
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
417***	2		Cycle Time (sec):	120		0	175
	0		Loss Time (sec):	12		1	
548	3		Critical V/C:	0.630		2	677***
	0		Avg Crit Del (sec/veh):	41.4		0	
88	1		Avg Delay (sec/veh):	40.0		2	62
			LOS:	D			

Lanes: 1 0 2 1 0
Final Vol: 191 899*** 118
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	191	898	118	173	251	472	414	548	88	62	677	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	898	118	173	251	472	414	548	88	62	677	168
Added Vol:	0	1	0	4	1	2	3	0	0	0	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	899	118	177	252	474	417	548	88	62	677	175
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	899	118	177	252	0	417	548	88	62	677	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	899	118	177	252	0	417	548	88	62	677	175
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	899	118	177	252	0	417	548	88	62	677	175
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.64	0.36	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.36	0.64
Final Sat.:	1750	4949	650	1750	3800	1750	3150	5700	1750	3150	4448	1150
Capacity Analysis Module:												
Vol/Sat:	0.11	0.18	0.18	0.10	0.07	0.00	0.13	0.10	0.05	0.02	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	30.5	34.6	34.6	19.3	23.3	0.0	25.2	33.7	33.7	20.5	29.0	29.0
Volume/Cap:	0.43	0.63	0.63	0.63	0.34	0.00	0.63	0.34	0.18	0.12	0.63	0.63
Uniform Del:	37.4	37.2	37.2	47.1	41.7	0.0	43.2	34.3	32.7	42.1	40.7	40.7
IncremntDel:	0.7	0.8	0.8	4.6	0.3	0.0	2.0	0.1	0.2	0.1	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.1	38.0	38.0	51.6	42.0	0.0	45.1	34.4	32.8	42.2	41.7	41.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	38.0	38.0	51.6	42.0	0.0	45.1	34.4	32.8	42.2	41.7	41.7
LOS by Move:	D+	D+	D+	D-	D	A	D	C-	C-	D	D	D
HCM2kAvgQ:	6	11	11	6	4	0	9	4	2	1	9	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

Signal=Protect/Rights=Ignore
Final Vol: 0 899*** 299
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	10/12/2016			
512***	2		Cycle Time (sec):	124		0	188
	0		Loss Time (sec):	12		1	
1362	3		Critical V/C:	0.679		2	645***
	0		Avg Crit Del (sec/veh):	42.9		0	
298	1		Avg Delay (sec/veh):	40.0		2	180
			LOS:	D			

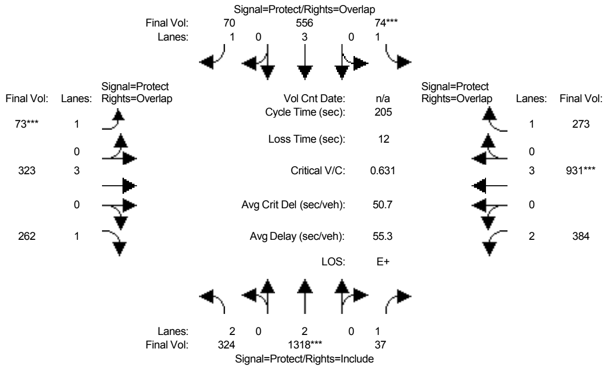
Lanes: 1 0 2 1 0
Final Vol: 114*** 244 53
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 12 Oct 2016 << 5:30 - 6:30 PM												
Base Vol:	114	243	53	293	898	427	510	1362	298	180	645	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	243	53	293	898	427	510	1362	298	180	645	183
Added Vol:	0	1	0	6	1	3	2	0	0	0	0	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	244	53	299	899	430	512	1362	298	180	645	188
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	244	53	299	899	0	512	1362	298	180	645	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	244	53	299	899	0	512	1362	298	180	645	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	244	53	299	899	0	512	1362	298	180	645	188
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.44	0.56	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.30	0.70
Final Sat.:	1750	4599	999	1750	3800	1750	3150	5700	1750	3150	4334	1263
Capacity Analysis Module:												
Vol/Sat:	0.07	0.05	0.05	0.17	0.24	0.00	0.16	0.24	0.17	0.06	0.15	0.15
Crit Moves:	****				****		****				****	
Green Time:	11.9	17.7	17.7	37.4	43.2	0.0	29.7	45.9	45.9	11.0	27.2	27.2
Volume/Cap:	0.68	0.37	0.37	0.57	0.68	0.00	0.68	0.65	0.46	0.65	0.68	0.68
Uniform Del:	54.2	48.1	48.1	36.4	34.5	0.0	42.8	32.3	29.6	54.6	44.4	44.4
IncremntDel:	10.7	0.3	0.3	1.4	1.4	0.0	2.5	0.7	0.5	5.2	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.9	48.4	48.4	37.9	35.9	0.0	45.3	33.0	30.2	59.8	46.0	46.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.9	48.4	48.4	37.9	35.9	0.0	45.3	33.0	30.2	59.8	46.0	46.0
LOS by Move:	E	D	D	D+	D+	A	D	C-	C	E+	D	D
HCM2kAvgQ:	6	4	4	9	13	0	11	12	7	5	10	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

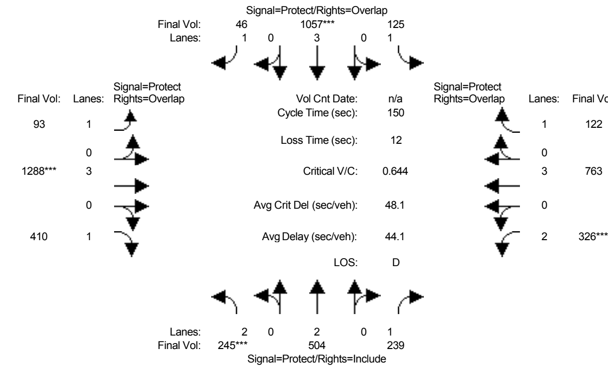


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	324	1318	37	74	556	70	73	323	262	384	931	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	1318	37	74	556	70	73	323	262	384	931	273
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	1318	37	74	556	70	73	323	262	384	931	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	1318	37	74	556	70	73	323	262	384	931	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	1318	37	74	556	70	73	323	262	384	931	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	324	1318	37	74	556	70	73	323	262	384	931	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.35	0.02	0.04	0.10	0.04	0.04	0.06	0.15	0.12	0.16	0.16
Crit Moves:		****		****			****				****	
Green Time:	64.9	113	112.7	13.7	61.5	75.1	13.5	21.1	86.0	45.5	53.1	66.8
Volume/Cap:	0.33	0.63	0.04	0.63	0.33	0.11	0.63	0.55	0.36	0.55	0.63	0.48
Uniform Del:	53.4	31.8	21.2	93.2	55.6	42.9	93.3	87.4	40.6	70.7	67.3	55.2
IncremntDel:	0.2	0.6	0.0	10.6	0.1	0.1	10.7	1.1	0.3	0.9	0.9	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.6	32.5	21.3	103.8	55.7	43.0	104.0	88.5	40.9	71.6	68.2	55.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	32.5	21.3	103.8	55.7	43.0	104.0	88.5	40.9	71.6	68.2	55.8
LOS by Move:	D-	C-	C+	F	E+	D	F	F	D	E	E	E+
HCM2kAvgQ:	9	27	1	6	9	3	6	7	12	13	17	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

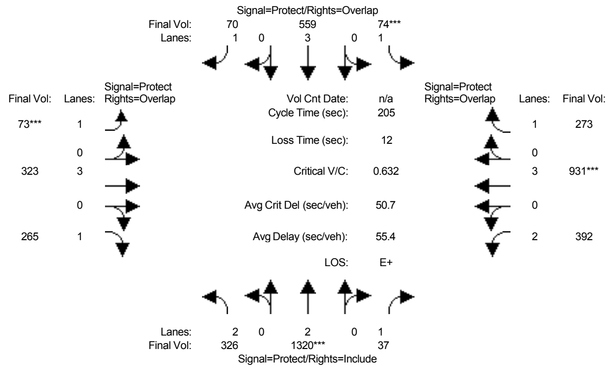


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	245	504	239	125	1057	46	93	1288	410	326	763	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	245	504	239	125	1057	46	93	1288	410	326	763	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	245	504	239	125	1057	46	93	1288	410	326	763	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	245	504	239	125	1057	46	93	1288	410	326	763	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	245	504	239	125	1057	46	93	1288	410	326	763	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	245	504	239	125	1057	46	93	1288	410	326	763	122
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.14	0.07	0.19	0.03	0.05	0.23	0.23	0.10	0.13	0.07
Crit Moves:	****				****			****		****		
Green Time:	18.1	40.2	40.2	21.0	43.2	65.0	21.8	52.6	70.7	24.1	54.9	76.0
Volume/Cap:	0.64	0.49	0.51	0.51	0.64	0.06	0.37	0.64	0.50	0.64	0.37	0.14
Uniform Del:	62.9	46.3	46.5	59.7	46.7	24.7	57.9	40.8	27.4	58.9	34.8	19.6
IncremntDel:	3.8	0.4	0.9	1.8	0.9	0.0	0.9	0.7	0.5	2.9	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.6	46.7	47.4	61.5	47.6	24.8	58.8	41.6	27.8	61.8	34.9	19.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.6	46.7	47.4	61.5	47.6	24.8	58.8	41.6	27.8	61.8	34.9	19.7
LOS by Move:	E	D	D	E	D	C	E+	D	C	E	C-	B-
HCM2kAvgQ:	6	9	9	6	15	1	4	17	14	9	8	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

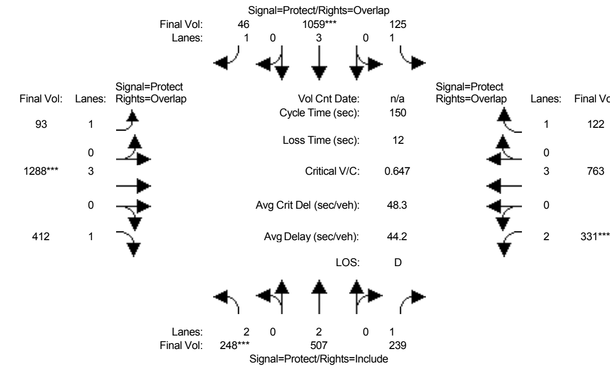


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	324	1318	37	74	556	70	73	323	262	384	931	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	1318	37	74	556	70	73	323	262	384	931	273
Added Vol:	2	2	0	0	3	0	0	0	3	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	326	1320	37	74	559	70	73	323	265	392	931	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	326	1320	37	74	559	70	73	323	265	392	931	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	1320	37	74	559	70	73	323	265	392	931	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	1320	37	74	559	70	73	323	265	392	931	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.35	0.02	0.04	0.10	0.04	0.04	0.06	0.15	0.12	0.16	0.16
Crit Moves:		****		****			****				****	
Green Time:	64.9	113	112.7	13.7	61.5	75.1	13.5	20.8	85.7	45.7	53.0	66.7
Volume/Cap:	0.33	0.63	0.04	0.63	0.33	0.11	0.63	0.56	0.36	0.56	0.63	0.48
Uniform Del:	53.4	31.8	21.2	93.2	55.7	42.9	93.3	87.7	40.9	70.7	67.3	55.2
IncremntDel:	0.2	0.6	0.0	10.7	0.1	0.1	10.8	1.2	0.3	1.0	0.9	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.6	32.4	21.2	103.8	55.8	43.0	104.1	88.9	41.2	71.7	68.2	55.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	32.4	21.2	103.8	55.8	43.0	104.1	88.9	41.2	71.7	68.2	55.9
LOS by Move:	D-	C-	C+	F	E+	D	F	F	D	E	E	E+
HCM2kAvgQ:	9	27	1	6	9	3	6	7	12	13	17	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)



Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	245	504	239	125	1057	46	93	1288	410	326	763	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	245	504	239	125	1057	46	93	1288	410	326	763	122
Added Vol:	3	3	0	0	2	0	0	0	2	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	248	507	239	125	1059	46	93	1288	412	331	763	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	248	507	239	125	1059	46	93	1288	412	331	763	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	507	239	125	1059	46	93	1288	412	331	763	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	248	507	239	125	1059	46	93	1288	412	331	763	122
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.14	0.07	0.19	0.03	0.05	0.23	0.24	0.11	0.13	0.07
Crit Moves:	****				****			****		****		
Green Time:	18.2	40.2	40.2	21.0	43.0	64.8	21.8	52.4	70.6	24.3	54.9	76.0
Volume/Cap:	0.65	0.50	0.51	0.51	0.65	0.06	0.37	0.65	0.50	0.65	0.37	0.14
Uniform Del:	62.8	46.3	46.5	59.7	46.8	24.8	57.9	41.1	27.5	58.8	34.8	19.6
IncremntDel:	3.8	0.4	0.9	1.8	0.9	0.0	0.9	0.8	0.5	2.9	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.6	46.7	47.4	61.5	47.7	24.9	58.8	41.8	28.0	61.7	34.9	19.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.6	46.7	47.4	61.5	47.7	24.9	58.8	41.8	28.0	61.7	34.9	19.7
LOS by Move:	E	D	D	E	D	C	E+	D	C	E	C-	B-
HCM2kAvgQ:	6	9	9	6	15	1	4	17	14	9	8	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #2: Wolfe Rd/Fremont Ave

Signal=Protect/Rights=Include
Final Vol: 419 795 31***
Lanes: 0 1 1 1 0

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
376***	2		Cycle Time (sec):	195		0	139
	0		Loss Time (sec):	12		1	
230	2		Critical V/C:	0.816		0	48***
	0		Avg Crit Del (sec/veh):	69.4		0	
195	1		Avg Delay (sec/veh):	53.2		1	12
			LOS:	D-			

Lanes: 2 0 1 1 0
Final Vol: 110 1155*** 27
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	110	1155	27	31	795	419	376	230	195	12	48	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	1155	27	31	795	419	376	230	195	12	48	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	1155	27	31	795	419	376	230	195	12	48	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	1155	27	31	795	419	376	230	195	12	48	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	1155	27	31	795	419	376	230	195	12	48	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	1155	27	31	795	419	376	230	195	12	48	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.95	0.05	0.08	1.92	1.00	2.00	2.00	1.00	1.00	0.26	0.74
Final Sat.:	3150	3615	85	139	3561	1800	3150	3800	1750	1750	462	1338
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.22	0.22	0.23	0.12	0.06	0.11	0.01	0.10	0.10
Crit Moves:		****		****			****				****	
Green Time:	17.3	76.3	76.3	53.3	112	112.3	28.5	36.3	53.6	17.0	24.8	24.8
Volume/Cap:	0.39	0.82	0.82	0.82	0.39	0.40	0.82	0.33	0.41	0.08	0.82	0.82
Uniform Del:	83.9	53.1	53.1	66.2	22.6	22.8	80.7	68.7	57.7	81.8	82.9	82.9
IncremntDel:	0.9	3.7	3.7	3.5	0.1	0.1	10.8	0.3	0.6	0.2	19.9	19.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.8	56.8	56.8	69.8	22.6	22.9	91.5	69.0	58.2	82.0	103	102.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.8	56.8	56.8	69.8	22.6	22.9	91.5	69.0	58.2	82.0	103	102.7
LOS by Move:	F	E+	E+	E	C+	C+	F	E	E+	F	F	F
HCM2kAvgQ:	4	32	32	24	13	14	15	6	10	1	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #2: Wolfe Rd/Fremont Ave

Signal=Protect/Rights=Include
Final Vol: 584 1503 51***
Lanes: 0 1 1 1 0

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
364	2		Cycle Time (sec):	175		0	31
	0		Loss Time (sec):	12		1	
426	2		Critical V/C:	0.818		0	28
	0		Avg Crit Del (sec/veh):	53.1		0	
362***	1		Avg Delay (sec/veh):	47.5		1	10***
			LOS:	D			

Lanes: 2 0 1 1 0
Final Vol: 195 776*** 46
Signal=Protect/Rights=Include

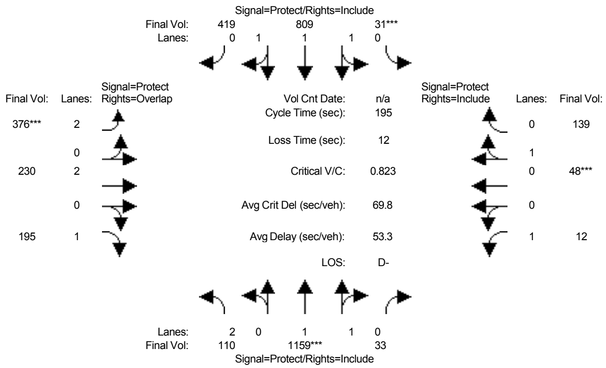
Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	195	776	46	51	1503	584	364	426	362	10	28	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	776	46	51	1503	584	364	426	362	10	28	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	195	776	46	51	1503	584	364	426	362	10	28	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	776	46	51	1503	584	364	426	362	10	28	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	776	46	51	1503	584	364	426	362	10	28	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	776	46	51	1503	584	364	426	362	10	28	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.88	0.12	0.07	2.10	0.83	2.00	2.00	1.00	1.00	0.47	0.53
Final Sat.:	3150	3493	207	131	3866	1502	3150	3800	1750	1750	854	946
Capacity Analysis Module:												
Vol/Sat:	0.06	0.22	0.22	0.39	0.39	0.39	0.12	0.11	0.21	0.01	0.03	0.03
Crit Moves:		****		****					****	****		
Green Time:	17.3	45.9	45.9	80.2	109	108.8	24.7	29.9	47.2	7.0	12.2	12.2
Volume/Cap:	0.63	0.85	0.85	0.85	0.63	0.63	0.82	0.66	0.77	0.14	0.47	0.47
Uniform Del:	75.7	61.3	61.3	42.0	20.5	20.5	73.0	67.7	58.8	81.1	78.3	78.3
IncremntDel:	4.0	7.1	7.1	2.9	0.4	0.4	11.4	2.4	7.4	0.9	2.8	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	79.7	68.4	68.4	44.9	20.9	20.9	84.4	70.2	66.2	82.0	81.0	81.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.7	68.4	68.4	44.9	20.9	20.9	84.4	70.2	66.2	82.0	81.0	81.0
LOS by Move:	E-	E	E	D	C+	C+	F	E	E	F	F	F
HCM2kAvgQ:	6	22	22	35	24	24	13	11	20	1	4	4

Note: Queue reported is the number of cars per lane.

Traffix 8.0.0715 Licensed to Hexagon Trans., San Jose

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #2: Wolfe Rd/Fremont Ave

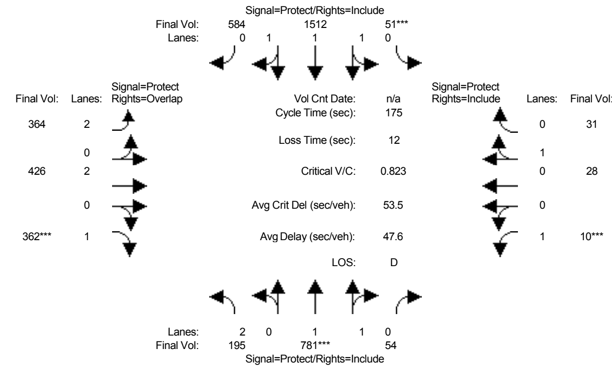


Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	110	1155	27	31	795	419	376	230	195	12	48	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	1155	27	31	795	419	376	230	195	12	48	139
Added Vol:	0	4	6	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	1159	33	31	809	419	376	230	195	12	48	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	1159	33	31	809	419	376	230	195	12	48	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	1159	33	31	809	419	376	230	195	12	48	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	1159	33	31	809	419	376	230	195	12	48	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.94	0.06	0.08	1.92	1.00	2.00	2.00	1.00	1.00	0.26	0.74
Final Sat.:	3150	3597	102	137	3563	1800	3150	3800	1750	1750	462	1338
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.23	0.23	0.23	0.12	0.06	0.11	0.01	0.10	0.10
Crit Moves:		****		****			****				****	
Green Time:	17.4	76.3	76.3	53.8	113	112.7	28.3	36.0	53.4	16.9	24.6	24.6
Volume/Cap:	0.39	0.82	0.82	0.82	0.39	0.40	0.82	0.33	0.41	0.08	0.82	0.82
Uniform Del:	83.8	53.3	53.3	66.1	22.5	22.6	80.9	69.0	57.9	81.9	83.1	83.1
IncremntDel:	0.9	4.0	4.0	3.7	0.1	0.1	11.5	0.3	0.6	0.2	20.9	20.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.7	57.2	57.2	69.9	22.5	22.7	92.4	69.3	58.4	82.1	104	104.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.7	57.2	57.2	69.9	22.5	22.7	92.4	69.3	58.4	82.1	104	104.0
LOS by Move:	F	E+	E+	E	C+	C+	F	E	E+	F	F	F
HCM2kAvgQ:	4	33	33	25	13	14	15	6	10	1	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #2: Wolfe Rd/Fremont Ave

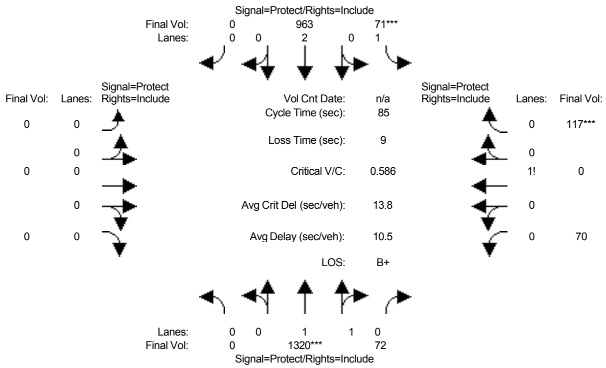


Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	195	776	46	51	1503	584	364	426	362	10	28	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	776	46	51	1503	584	364	426	362	10	28	31
Added Vol:	0	5	8	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	195	781	54	51	1512	584	364	426	362	10	28	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	781	54	51	1512	584	364	426	362	10	28	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	781	54	51	1512	584	364	426	362	10	28	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	781	54	51	1512	584	364	426	362	10	28	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.87	0.13	0.07	2.10	0.83	2.00	2.00	1.00	1.00	0.47	0.53
Final Sat.:	3150	3461	239	131	3873	1496	3150	3800	1750	1750	854	946
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.23	0.39	0.39	0.39	0.12	0.11	0.21	0.01	0.03	0.03
Crit Moves:		****		****					****	****		
Green Time:	17.3	46.3	46.3	80.0	109	109.0	24.6	29.7	47.0	7.0	12.1	12.1
Volume/Cap:	0.63	0.85	0.85	0.85	0.63	0.63	0.82	0.66	0.77	0.14	0.47	0.47
Uniform Del:	75.8	61.2	61.2	42.3	20.4	20.4	73.1	67.9	59.0	81.1	78.3	78.3
IncremntDel:	4.0	7.4	7.4	3.1	0.4	0.4	11.8	2.5	7.6	0.9	2.8	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	79.8	68.6	68.6	45.3	20.8	20.8	84.9	70.5	66.7	82.0	81.1	81.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.8	68.6	68.6	45.3	20.8	20.8	84.9	70.5	66.7	82.0	81.1	81.1
LOS by Move:	E-	E	E	D	C+	C+	F	E	E	F	F	F
HCM2kAvgQ:	6	22	22	35	24	24	13	11	20	1	4	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3: Wolfe Rd/Marion Wy

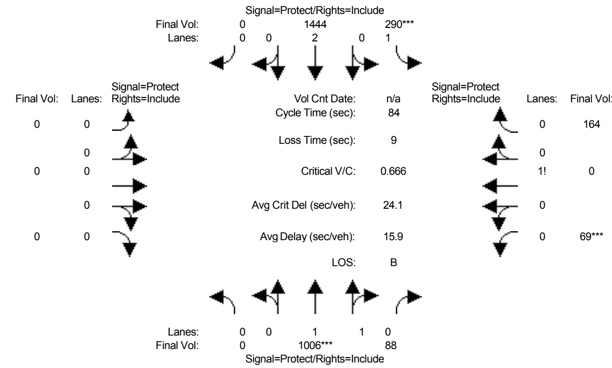


Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1320	72	71	963	0	0	0	0	70	0	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1320	72	71	963	0	0	0	0	70	0	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1320	72	71	963	0	0	0	0	70	0	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1320	72	71	963	0	0	0	0	70	0	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1320	72	71	963	0	0	0	0	70	0	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1320	72	71	963	0	0	0	0	70	0	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	0.37	0.00	0.63
Final Sat.:	0	3508	191	1750	3800	0	0	0	0	655	0	1095
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.38	0.04	0.25	0.00	0.00	0.00	0.00	0.11	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	53.7	53.7	7.0	60.7	0.0	0.0	0.0	0.0	15.3	0.0	15.3
Volume/Cap:	0.00	0.60	0.60	0.49	0.35	0.00	0.00	0.00	0.00	0.60	0.00	0.60
Uniform Del:	0.0	9.2	9.2	37.3	4.6	0.0	0.0	0.0	0.0	32.0	0.0	32.0
IncremntDel:	0.0	0.4	0.4	2.6	0.1	0.0	0.0	0.0	0.0	3.1	0.0	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	35.1	0.0	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	35.1	0.0	35.1
LOS by Move:	A	A	A	D	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	11	11	2	5	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3: Wolfe Rd/Marion Wy



Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1006	88	290	1444	0	0	0	0	69	0	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1006	88	290	1444	0	0	0	0	69	0	164
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1006	88	290	1444	0	0	0	0	69	0	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1006	88	290	1444	0	0	0	0	69	0	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1006	88	290	1444	0	0	0	0	69	0	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1006	88	290	1444	0	0	0	0	69	0	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.83	0.17	1.00	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.70
Final Sat.:	0	3402	298	1750	3800	0	0	0	0	518	0	1232
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.17	0.38	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:		****		****						****		
Green Time:	0.0	37.3	37.3	20.9	58.2	0.0	0.0	0.0	0.0	16.8	0.0	16.8
Volume/Cap:	0.00	0.67	0.67	0.67	0.55	0.00	0.00	0.00	0.00	0.67	0.00	0.67
Uniform Del:	0.0	18.4	18.4	28.4	6.4	0.0	0.0	0.0	0.0	31.0	0.0	31.0
IncremntDel:	0.0	1.1	1.1	3.9	0.2	0.0	0.0	0.0	0.0	4.8	0.0	4.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.5	19.5	32.3	6.6	0.0	0.0	0.0	0.0	35.8	0.0	35.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.5	19.5	32.3	6.6	0.0	0.0	0.0	0.0	35.8	0.0	35.8
LOS by Move:	A	B-	B-	C-	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	11	11	7	9	0	0	0	0	7	0	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #3: Wolfe Rd/Marion Wy

Signal=Protect/Rights=Include
Final Vol: 0 977 71***
Lanes: 0 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a		0	117***
			Cycle Time (sec):	85			
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.589		1!	0
	0		Avg Crit Del (sec/veh):	13.8		0	
0	0		Avg Delay (sec/veh):	10.4		0	70
			LOS:	B+			

Lanes: 0 0 1 1 0
Final Vol: 0 1330*** 72
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1320	72	71	963	0	0	0	0	70	0	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1320	72	71	963	0	0	0	0	70	0	117
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1330	72	71	977	0	0	0	0	70	0	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1330	72	71	977	0	0	0	0	70	0	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1330	72	71	977	0	0	0	0	70	0	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1330	72	71	977	0	0	0	0	70	0	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	0.37	0.00	0.63
Final Sat.:	0	3510	190	1750	3800	0	0	0	0	655	0	1095
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.38	0.04	0.26	0.00	0.00	0.00	0.00	0.11	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	53.8	53.8	7.0	60.8	0.0	0.0	0.0	0.0	15.2	0.0	15.2
Volume/Cap:	0.00	0.60	0.60	0.49	0.36	0.00	0.00	0.00	0.00	0.60	0.00	0.60
Uniform Del:	0.0	9.2	9.2	37.3	4.6	0.0	0.0	0.0	0.0	32.1	0.0	32.1
IncremntDel:	0.0	0.4	0.4	2.6	0.1	0.0	0.0	0.0	0.0	3.2	0.0	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	35.3	0.0	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.6	9.6	39.9	4.7	0.0	0.0	0.0	0.0	35.3	0.0	35.3
LOS by Move:	A	A	A	D	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	11	11	2	5	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #3: Wolfe Rd/Marion Wy

Signal=Protect/Rights=Include
Final Vol: 0 1453 290***
Lanes: 0 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a		0	164
			Cycle Time (sec):	84			
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.670		1!	0
	0		Avg Crit Del (sec/veh):	24.1		0	
0	0		Avg Delay (sec/veh):	15.9		0	69***
			LOS:	B			

Lanes: 0 0 1 1 0
Final Vol: 0 1019*** 88
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1006	88	290	1444	0	0	0	0	69	0	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1006	88	290	1444	0	0	0	0	69	0	164
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1019	88	290	1453	0	0	0	0	69	0	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1019	88	290	1453	0	0	0	0	69	0	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1019	88	290	1453	0	0	0	0	69	0	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1019	88	290	1453	0	0	0	0	69	0	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.84	0.16	1.00	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.70
Final Sat.:	0	3406	294	1750	3800	0	0	0	0	518	0	1232
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.17	0.38	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:		****		****						****		
Green Time:	0.0	37.5	37.5	20.8	58.3	0.0	0.0	0.0	0.0	16.7	0.0	16.7
Volume/Cap:	0.00	0.67	0.67	0.67	0.55	0.00	0.00	0.00	0.00	0.67	0.00	0.67
Uniform Del:	0.0	18.3	18.3	28.5	6.4	0.0	0.0	0.0	0.0	31.1	0.0	31.1
IncremntDel:	0.0	1.1	1.1	4.0	0.3	0.0	0.0	0.0	0.0	5.0	0.0	5.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.4	19.4	32.6	6.6	0.0	0.0	0.0	0.0	36.1	0.0	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.4	19.4	32.6	6.6	0.0	0.0	0.0	0.0	36.1	0.0	36.1
LOS by Move:	A	B-	B-	C-	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	11	11	7	9	0	0	0	0	7	0	7

Note: Queue reported is the number of cars per lane.

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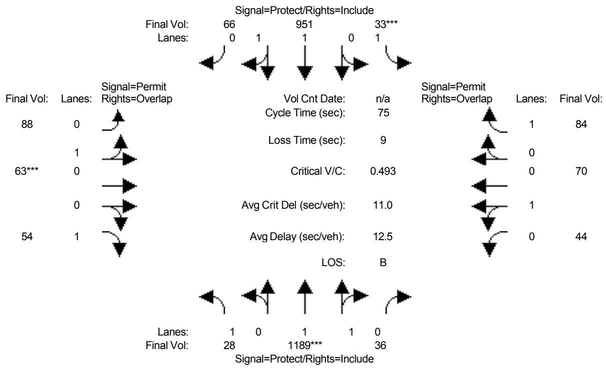
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #4: Wolfe Rd/Inverness Wy

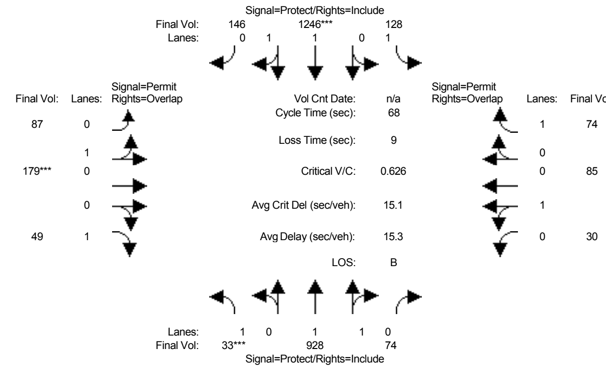


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	1189	36	33	951	66	88	63	54	44	70	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	1189	36	33	951	66	88	63	54	44	70	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	1189	36	33	951	66	88	63	54	44	70	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	1189	36	33	951	66	88	63	54	44	70	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	1189	36	33	951	66	88	63	54	44	70	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	1189	36	33	951	66	88	63	54	44	70	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.94	0.06	1.00	1.87	0.13	0.58	0.42	1.00	0.39	0.61	1.00
Final Sat.:	1750	3591	109	1750	3460	240	1049	751	1750	695	1105	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.33	0.33	0.02	0.27	0.27	0.08	0.08	0.03	0.06	0.06	0.05
Crit Moves:		****		****				****				
Green Time:	13.7	47.1	47.1	7.0	40.4	40.4	11.9	11.9	25.6	11.9	11.9	18.9
Volume/Cap:	0.09	0.53	0.53	0.20	0.51	0.51	0.53	0.53	0.09	0.40	0.40	0.19
Uniform Del:	25.5	7.8	7.8	31.4	11.0	11.0	28.9	28.9	16.8	28.3	28.3	22.0
IncremntDel:	0.1	0.2	0.2	0.6	0.2	0.2	1.8	1.8	0.1	0.9	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.6	8.0	8.0	32.0	11.3	11.3	30.8	30.8	16.8	29.2	29.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.6	8.0	8.0	32.0	11.3	11.3	30.8	30.8	16.8	29.2	29.2	22.2
LOS by Move:	C	A	A	C-	B+	B+	C	C	B	C	C	C+
HCM2kAvgQ:	1	8	8	1	8	8	4	4	1	3	3	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #4: Wolfe Rd/Inverness Wy



Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	928	74	128	1246	146	87	179	49	30	85	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	928	74	128	1246	146	87	179	49	30	85	74
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	928	74	128	1246	146	87	179	49	30	85	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	928	74	128	1246	146	87	179	49	30	85	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	928	74	128	1246	146	87	179	49	30	85	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	928	74	128	1246	146	87	179	49	30	85	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.85	0.15	1.00	1.78	0.22	0.33	0.67	1.00	0.26	0.74	1.00
Final Sat.:	1750	3427	273	1750	3312	388	589	1211	1750	470	1330	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.27	0.07	0.38	0.38	0.15	0.15	0.03	0.06	0.06	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	32.1	32.1	12.2	37.3	37.3	14.7	14.7	21.7	14.7	14.7	26.9
Volume/Cap:	0.18	0.57	0.57	0.41	0.69	0.69	0.69	0.69	0.09	0.30	0.30	0.11
Uniform Del:	27.9	13.0	13.0	24.7	11.1	11.1	24.5	24.5	16.2	22.3	22.3	13.0
IncremntDel:	0.5	0.5	0.5	0.9	1.0	1.0	5.0	5.0	0.1	0.4	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.4	13.4	13.4	25.6	12.1	12.1	29.6	29.6	16.3	22.8	22.8	13.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	13.4	13.4	25.6	12.1	12.1	29.6	29.6	16.3	22.8	22.8	13.1
LOS by Move:	C	B	B	C	B	B	C	C	B	C+	C+	B
HCM2kAvgQ:	1	8	8	2	11	11	7	7	1	2	2	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #4: Wolfe Rd/Inverness Wy

Signal=Protect/Rights=Include
Final Vol: 66 965 33***
Lanes: 0 1 1 0 1

Final Vol: 88, 63***, 54 — Lanes: 0, 1, 0, 0, 1 — Signal=Permit Rights=Overlap

Vol Cnt Date: n/a
Cycle Time (sec): 75
Loss Time (sec): 9
Critical V/C: 0.496
Avg Crit Del (sec/veh): 11.0
Avg Delay (sec/veh): 12.5
LOS: B

Signal=Permit Rights=Overlap — Lanes: 1, 0, 0, 1, 0 — Final Vol: 84, 70, 44

Lanes: 1 0 1 1 0
Final Vol: 28 1199*** 36
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	1189	36	33	951	66	88	63	54	44	70	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	1189	36	33	951	66	88	63	54	44	70	84
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	1199	36	33	965	66	88	63	54	44	70	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	1199	36	33	965	66	88	63	54	44	70	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	1199	36	33	965	66	88	63	54	44	70	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	1199	36	33	965	66	88	63	54	44	70	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.94	0.06	1.00	1.87	0.13	0.58	0.42	1.00	0.39	0.61	1.00
Final Sat.:	1750	3592	108	1750	3463	237	1049	751	1750	695	1105	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.33	0.33	0.02	0.28	0.28	0.08	0.08	0.03	0.06	0.06	0.05
Crit Moves:		****		****				****				
Green Time:	13.6	47.2	47.2	7.0	40.6	40.6	11.8	11.8	25.4	11.8	11.8	18.8
Volume/Cap:	0.09	0.53	0.53	0.20	0.52	0.52	0.53	0.53	0.09	0.40	0.40	0.19
Uniform Del:	25.6	7.8	7.8	31.4	11.0	11.0	29.0	29.0	16.9	28.4	28.4	22.1
IncremntDel:	0.1	0.2	0.2	0.6	0.2	0.2	1.9	1.9	0.1	0.9	0.9	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.7	8.0	8.0	32.0	11.2	11.2	30.9	30.9	17.0	29.3	29.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.7	8.0	8.0	32.0	11.2	11.2	30.9	30.9	17.0	29.3	29.3	22.3
LOS by Move:	C	A	A	C-	B+	B+	C	C	B	C	C	C+
HCM2kAvgQ:	1	8	8	1	8	8	4	4	1	3	3	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #4: Wolfe Rd/Inverness Wy

Signal=Protect/Rights=Include
Final Vol: 146 1255*** 128
Lanes: 0 1 1 0 1

Final Vol: 87, 179***, 49 — Lanes: 0, 1, 0, 0, 1 — Signal=Permit Rights=Overlap

Vol Cnt Date: n/a
Cycle Time (sec): 68
Loss Time (sec): 9
Critical V/C: 0.629
Avg Crit Del (sec/veh): 15.2
Avg Delay (sec/veh): 15.3
LOS: B

Signal=Permit Rights=Overlap — Lanes: 1, 0, 0, 1, 0 — Final Vol: 74, 85, 30

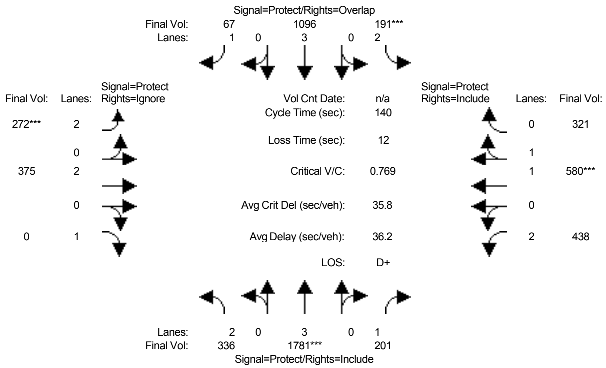
Lanes: 1 0 1 1 0
Final Vol: 33*** 941 74
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	928	74	128	1246	146	87	179	49	30	85	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	928	74	128	1246	146	87	179	49	30	85	74
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	941	74	128	1255	146	87	179	49	30	85	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	941	74	128	1255	146	87	179	49	30	85	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	941	74	128	1255	146	87	179	49	30	85	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	941	74	128	1255	146	87	179	49	30	85	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.85	0.15	1.00	1.79	0.21	0.33	0.67	1.00	0.26	0.74	1.00
Final Sat.:	1750	3430	270	1750	3314	386	589	1211	1750	470	1330	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.27	0.07	0.38	0.38	0.15	0.15	0.03	0.06	0.06	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	32.3	32.3	12.1	37.4	37.4	14.6	14.6	21.6	14.6	14.6	26.7
Volume/Cap:	0.18	0.58	0.58	0.41	0.69	0.69	0.69	0.69	0.09	0.30	0.30	0.11
Uniform Del:	27.9	12.9	12.9	24.8	11.1	11.1	24.6	24.6	16.3	22.4	22.4	13.1
IncremntDel:	0.5	0.5	0.5	0.9	1.0	1.0	5.2	5.2	0.1	0.4	0.4	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.4	13.4	13.4	25.7	12.1	12.1	29.8	29.8	16.4	22.8	22.8	13.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	13.4	13.4	25.7	12.1	12.1	29.8	29.8	16.4	22.8	22.8	13.2
LOS by Move:	C	B	B	C	B	B	C	C	B	C+	C+	B
HCM2kAvgQ:	1	8	8	2	11	11	7	7	1	2	2	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #5: De Anza Blvd/Homestead Rd

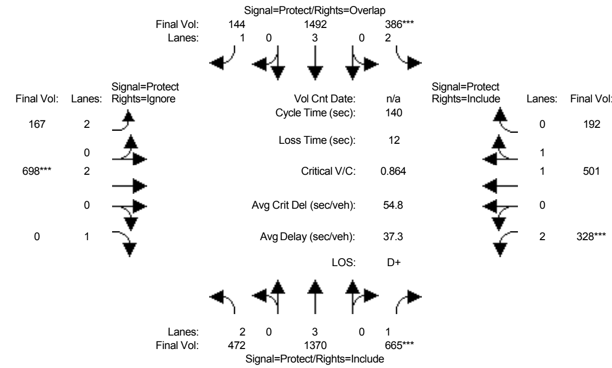


Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	336	1781	201	191	1096	67	272	375	308	438	580	321
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	336	1781	201	191	1096	67	272	375	308	438	580	321
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	336	1781	201	191	1096	67	272	375	308	438	580	321
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	336	1781	201	191	1096	67	272	375	0	438	580	321
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	336	1781	201	191	1096	67	272	375	0	438	580	321
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	336	1781	201	191	1096	67	272	375	0	438	580	321
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.27	0.73
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2381	1318
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.11	0.06	0.19	0.04	0.09	0.10	0.00	0.14	0.24	0.24
Crit Moves:		****		****			****				****	
Green Time:	24.2	56.9	56.9	11.0	43.7	59.4	15.7	24.9	0.0	35.1	44.4	44.4
Volume/Cap:	0.62	0.77	0.28	0.77	0.62	0.09	0.77	0.55	0.00	0.55	0.77	0.77
Uniform Del:	53.6	35.9	27.9	63.2	41.0	24.1	60.4	52.5	0.0	45.6	43.2	43.2
IncremntDel:	2.1	1.6	0.2	13.6	0.7	0.1	9.8	1.0	0.0	0.9	3.2	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.86	0.54	0.54	0.94	0.70	0.51	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	48.2	21.1	15.4	73.2	29.3	12.3	70.2	53.5	0.0	46.5	46.4	46.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.2	21.1	15.4	73.2	29.3	12.3	70.2	53.5	0.0	46.5	46.4	46.4
LOS by Move:	D	C+	B	E	C	B	E	D-	A	D	D	D
HCM2kAvgQ:	8	18	4	7	12	1	8	7	0	8	16	16

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #5: De Anza Blvd/Homestead Rd

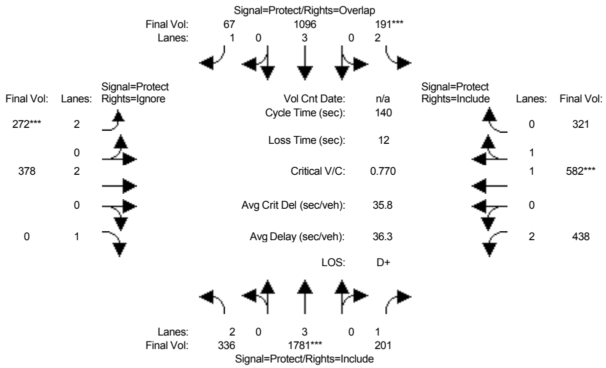


Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	472	1370	665	386	1492	144	167	698	343	328	501	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	472	1370	665	386	1492	144	167	698	343	328	501	192
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	472	1370	665	386	1492	144	167	698	343	328	501	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	472	1370	665	386	1492	144	167	698	0	328	501	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	472	1370	665	386	1492	144	167	698	0	328	501	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	472	1370	665	386	1492	144	167	698	0	328	501	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.43	0.57
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2674	1025
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.38	0.12	0.26	0.08	0.05	0.18	0.00	0.10	0.19	0.19
Crit Moves:			****	****				****		****		
Green Time:	29.6	61.5	61.5	19.8	51.8	62.0	10.3	29.7	0.0	16.9	36.3	36.3
Volume/Cap:	0.71	0.55	0.86	0.86	0.71	0.19	0.72	0.86	0.00	0.86	0.72	0.72
Uniform Del:	51.2	28.9	35.5	58.8	37.7	23.7	63.5	53.2	0.0	60.4	47.2	47.2
IncremntDel:	3.5	0.3	10.0	16.0	1.1	0.1	10.6	9.6	0.0	18.2	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.82	0.48	0.48	0.89	0.61	0.47	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	45.5	14.1	27.0	68.2	24.1	11.2	74.1	62.8	0.0	78.7	50.0	50.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.5	14.1	27.0	68.2	24.1	11.2	74.1	62.8	0.0	78.7	50.0	50.0
LOS by Move:	D	B	C	E	C	B+	E	E	A	E-	D	D
HCM2kAvgQ:	12	9	25	12	15	2	6	17	0	9	12	12

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #5: De Anza Blvd/Homestead Rd

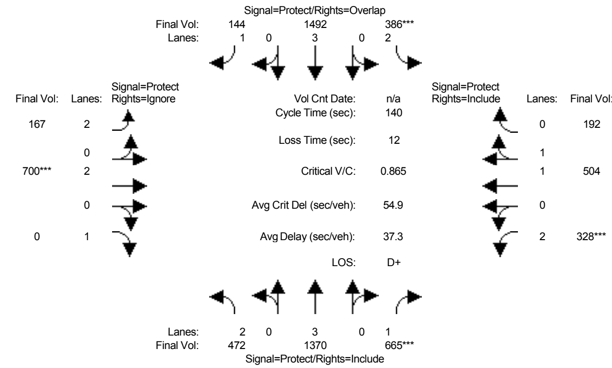


Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	336	1781	201	191	1096	67	272	375	308	438	580	321
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	336	1781	201	191	1096	67	272	375	308	438	580	321
Added Vol:	0	0	0	0	0	0	0	3	0	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	336	1781	201	191	1096	67	272	378	308	438	582	321
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	336	1781	201	191	1096	67	272	378	0	438	582	321
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	336	1781	201	191	1096	67	272	378	0	438	582	321
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	336	1781	201	191	1096	67	272	378	0	438	582	321
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.27	0.73
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2384	1315
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.11	0.06	0.19	0.04	0.09	0.10	0.00	0.14	0.24	0.24
Crit Moves:		****		****			****				****	
Green Time:	24.2	56.8	56.8	11.0	43.7	59.4	15.7	25.1	0.0	35.1	44.4	44.4
Volume/Cap:	0.62	0.77	0.28	0.77	0.62	0.09	0.77	0.56	0.00	0.56	0.77	0.77
Uniform Del:	53.6	35.9	27.9	63.2	41.0	24.1	60.4	52.4	0.0	45.7	43.2	43.2
IncremntDel:	2.1	1.6	0.2	13.6	0.7	0.1	9.9	1.0	0.0	0.9	3.2	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.86	0.54	0.54	0.94	0.70	0.51	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	48.3	21.2	15.4	73.3	29.3	12.3	70.3	53.4	0.0	46.6	46.3	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.3	21.2	15.4	73.3	29.3	12.3	70.3	53.4	0.0	46.6	46.3	46.3
LOS by Move:	D	C+	B	E	C	B	E	D-	A	D	D	D
HCM2kAvgQ:	8	19	4	7	12	1	8	7	0	8	16	16

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #5: De Anza Blvd/Homestead Rd



Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	472	1370	665	386	1492	144	167	698	343	328	501	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	472	1370	665	386	1492	144	167	698	343	328	501	192
Added Vol:	0	0	0	0	0	0	0	2	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	472	1370	665	386	1492	144	167	700	343	328	504	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	472	1370	665	386	1492	144	167	700	0	328	504	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	472	1370	665	386	1492	144	167	700	0	328	504	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	472	1370	665	386	1492	144	167	700	0	328	504	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.43	0.57
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2679	1020
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.38	0.12	0.26	0.08	0.05	0.18	0.00	0.10	0.19	0.19
Crit Moves:			****	****				****		****		
Green Time:	29.6	61.5	61.5	19.8	51.7	62.0	10.3	29.8	0.0	16.9	36.4	36.4
Volume/Cap:	0.71	0.55	0.87	0.87	0.71	0.19	0.72	0.87	0.00	0.87	0.72	0.72
Uniform Del:	51.2	29.0	35.5	58.8	37.7	23.7	63.5	53.2	0.0	60.5	47.2	47.2
IncremntDel:	3.5	0.3	10.1	16.0	1.1	0.1	10.8	9.6	0.0	18.3	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.82	0.48	0.48	0.89	0.61	0.47	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	45.6	14.1	27.0	68.3	24.1	11.3	74.2	62.8	0.0	78.8	50.0	50.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	14.1	27.0	68.3	24.1	11.3	74.2	62.8	0.0	78.8	50.0	50.0
LOS by Move:	D	B	C	E	C	B+	E	E	A	E-	D	D
HCM2kAvgQ:	12	9	25	12	15	2	6	17	0	9	12	12

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #6: Wolfe Rd/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 72 807 161***
Lanes: 1 0 2 0 2

Final Vol: Lanes: Signal=Protect Rights=Include
164 1
0
500 2
0
292*** 1

Vol Cnt Date: n/a
Cycle Time (sec): 125
Loss Time (sec): 12
Critical V/C: 0.730
Avg Crit Del (sec/veh): 44.3
Avg Delay (sec/veh): 40.7
LOS: D

Signal=Protect Rights=Include Lanes: Final Vol:
0 97
1
1 731
0
2 564***

Lanes: 2 0 2 0 1
Final Vol: 296 1000*** 477
Signal=Protect/Rights=Overlap

Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	296	1000	477	161	807	72	164	500	292	564	731	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	1000	477	161	807	72	164	500	292	564	731	97
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	296	1000	477	161	807	72	164	500	292	564	731	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	296	1000	477	161	807	72	164	500	292	564	731	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	296	1000	477	161	807	72	164	500	292	564	731	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	296	1000	477	161	807	72	164	500	292	564	731	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3266	433
Capacity Analysis Module:												
Vol/Sat:	0.09	0.26	0.27	0.05	0.21	0.04	0.09	0.13	0.17	0.18	0.22	0.22
Crit Moves:		****		****					****	****		
Green Time:	16.5	45.0	75.7	8.7	37.3	54.8	17.5	28.6	28.6	30.6	41.7	41.7
Volume/Cap:	0.71	0.73	0.45	0.73	0.71	0.09	0.67	0.58	0.73	0.73	0.67	0.67
Uniform Del:	52.0	34.7	13.4	57.0	39.1	20.6	51.0	42.8	44.7	43.4	35.7	35.7
IncremntDel:	5.7	2.0	0.3	11.7	2.1	0.1	7.0	1.0	6.7	3.6	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.7	36.7	13.7	68.7	41.2	20.6	58.1	43.8	51.4	46.9	37.2	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.7	36.7	13.7	68.7	41.2	20.6	58.1	43.8	51.4	46.9	37.2	37.2
LOS by Move:	E+	D+	B	E	D	C+	E+	D	D-	D	D+	D+
HCM2kAvgQ:	7	16	10	4	14	2	6	8	11	11	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #6: Wolfe Rd/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 104 1086*** 138
Lanes: 1 0 2 0 2

Final Vol: Lanes: Signal=Protect Rights=Include
120 1
0
862*** 2
0
285 1

Vol Cnt Date: n/a
Cycle Time (sec): 135
Loss Time (sec): 12
Critical V/C: 0.854
Avg Crit Del (sec/veh): 56.1
Avg Delay (sec/veh): 46.2
LOS: D

Signal=Protect Rights=Include Lanes: Final Vol:
0 134
1
1 731
0
2 480***

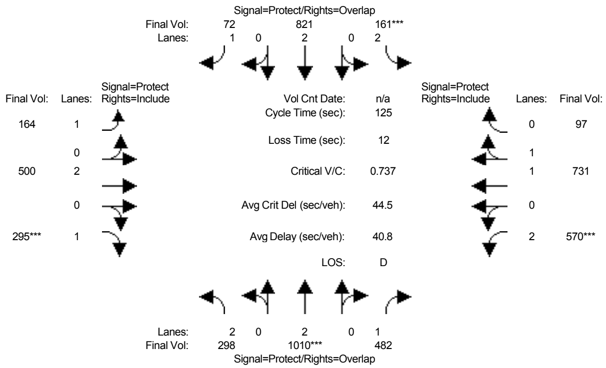
Lanes: 2 0 2 0 1
Final Vol: 356*** 840 505
Signal=Protect/Rights=Overlap

Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	356	840	505	138	1086	104	120	862	285	480	731	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	356	840	505	138	1086	104	120	862	285	480	731	134
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	840	505	138	1086	104	120	862	285	480	731	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	356	840	505	138	1086	104	120	862	285	480	731	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	356	840	505	138	1086	104	120	862	285	480	731	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	356	840	505	138	1086	104	120	862	285	480	731	134
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.68	0.32
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3126	573
Capacity Analysis Module:												
Vol/Sat:	0.11	0.22	0.29	0.04	0.29	0.06	0.07	0.23	0.16	0.15	0.23	0.23
Crit Moves:	****				****			****		****		
Green Time:	17.9	51.1	75.2	12.0	45.2	58.8	13.6	35.9	35.9	24.1	46.4	46.4
Volume/Cap:	0.85	0.58	0.52	0.49	0.85	0.14	0.68	0.85	0.61	0.85	0.68	0.68
Uniform Del:	57.3	33.5	18.6	58.6	41.8	22.9	58.6	47.1	43.5	53.7	38.0	38.0
IncremntDel:	15.6	0.6	0.5	1.4	5.8	0.1	10.4	7.2	2.4	12.1	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	72.9	34.1	19.1	60.0	47.7	23.0	69.0	54.3	45.9	65.9	39.5	39.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.9	34.1	19.1	60.0	47.7	23.0	69.0	54.3	45.9	65.9	39.5	39.5
LOS by Move:	E	C-	B-	E+	D	C+	E	D-	D	E	D	D
HCM2kAvgQ:	9	13	14	3	21	3	5	17	11	12	15	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #6: Wolfe Rd/Homestead Rd

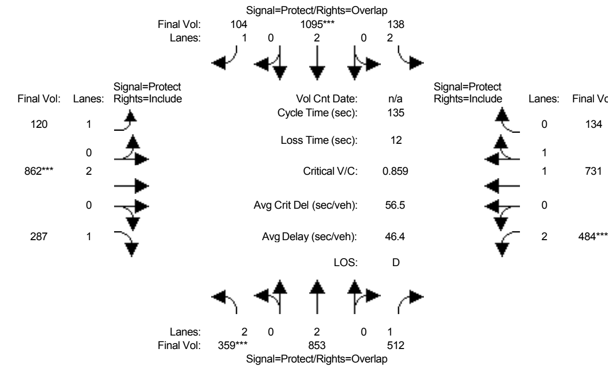


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	296	1000	477	161	807	72	164	500	292	564	731	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	1000	477	161	807	72	164	500	292	564	731	97
Added Vol:	2	10	5	0	14	0	0	0	3	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	298	1010	482	161	821	72	164	500	295	570	731	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	1010	482	161	821	72	164	500	295	570	731	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	1010	482	161	821	72	164	500	295	570	731	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	298	1010	482	161	821	72	164	500	295	570	731	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3266	433
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.28	0.05	0.22	0.04	0.09	0.13	0.17	0.18	0.22	0.22
Crit Moves:		****		****					****	****		
Green Time:	16.4	45.1	75.8	8.7	37.4	54.9	17.5	28.6	28.6	30.7	41.8	41.8
Volume/Cap:	0.72	0.74	0.45	0.74	0.72	0.09	0.67	0.58	0.74	0.74	0.67	0.67
Uniform Del:	52.1	34.8	13.4	57.0	39.2	20.5	51.0	42.8	44.7	43.4	35.7	35.7
IncremntDel:	6.2	2.1	0.3	12.4	2.3	0.1	7.0	1.0	7.1	3.7	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.3	37.0	13.7	69.4	41.5	20.6	58.0	43.8	51.8	47.2	37.1	37.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.3	37.0	13.7	69.4	41.5	20.6	58.0	43.8	51.8	47.2	37.1	37.1
LOS by Move:	E+	D+	B	E	D	C+	E+	D	D-	D	D+	D+
HCM2kAvgQ:	7	17	10	4	14	2	6	8	11	11	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #6: Wolfe Rd/Homestead Rd

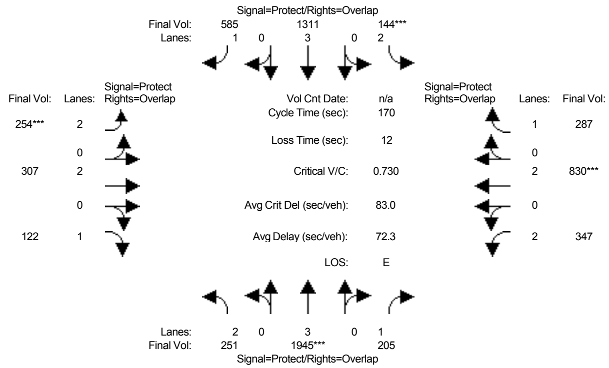


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	356	840	505	138	1086	104	120	862	285	480	731	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	356	840	505	138	1086	104	120	862	285	480	731	134
Added Vol:	3	13	7	0	9	0	0	0	2	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	359	853	512	138	1095	104	120	862	287	484	731	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	359	853	512	138	1095	104	120	862	287	484	731	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	853	512	138	1095	104	120	862	287	484	731	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	359	853	512	138	1095	104	120	862	287	484	731	134
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.68	0.32
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3126	573
Capacity Analysis Module:												
Vol/Sat:	0.11	0.22	0.29	0.04	0.29	0.06	0.07	0.23	0.16	0.15	0.23	0.23
Crit Moves:	****				****			****		****		
Green Time:	17.9	51.3	75.5	11.9	45.3	58.8	13.6	35.7	35.7	24.1	46.2	46.2
Volume/Cap:	0.86	0.59	0.52	0.50	0.86	0.14	0.68	0.86	0.62	0.86	0.68	0.68
Uniform Del:	57.3	33.4	18.5	58.7	41.9	22.8	58.6	47.3	43.7	53.8	38.1	38.1
IncremntDel:	16.2	0.7	0.5	1.4	6.1	0.1	10.5	7.6	2.6	12.6	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	73.5	34.1	19.1	60.1	48.0	22.9	69.2	54.8	46.3	66.3	39.6	39.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.5	34.1	19.1	60.1	48.0	22.9	69.2	54.8	46.3	66.3	39.6	39.6
LOS by Move:	E	C-	B-	E	D	C+	E	D-	D	E	D	D
HCM2kAvgQ:	9	14	14	3	21	3	5	17	11	12	15	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #7: Lawrence Expwy/Homestead Rd

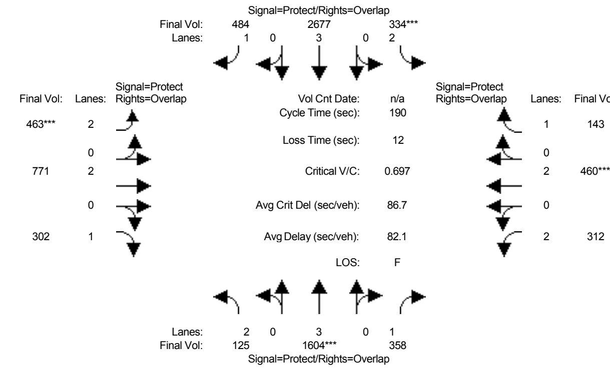


Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	251	2431	205	144	1660	585	254	307	122	347	830	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	2431	205	144	1660	585	254	307	122	347	830	287
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	2431	205	144	1660	585	254	307	122	347	830	287
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1945	205	144	1311	585	254	307	122	347	830	287
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1945	205	144	1311	585	254	307	122	347	830	287
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	1945	205	144	1311	585	254	307	122	347	830	287
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.34	0.12	0.05	0.23	0.33	0.08	0.08	0.07	0.11	0.22	0.16
Crit Moves:		****		****			****				****	
Green Time:	15.4	72.7	95.6	25.4	82.8	105.6	22.8	38.9	54.3	22.8	38.9	64.3
Volume/Cap:	0.88	0.80	0.21	0.31	0.47	0.54	0.60	0.35	0.22	0.82	0.95	0.43
Uniform Del:	90.4	49.9	21.8	76.2	34.4	21.7	81.9	65.0	50.1	84.6	76.5	46.5
IncremntDel:	25.8	1.9	0.1	0.4	0.1	0.5	2.4	0.2	0.2	12.0	20.2	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	122.2	76.8	40.6	85.5	56.2	45.9	84.3	65.3	50.3	96.7	96.7	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	122.2	76.8	40.6	85.5	56.2	45.9	84.3	65.3	50.3	96.7	96.7	47.0
LOS by Move:	F	E-	D	F	E+	D	F	E	D	F	F	D
HCM2kAvgQ:	12	38	11	5	23	33	9	7	6	14	29	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #7: Lawrence Expwy/Homestead Rd



Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	125	2005	358	334	3389	484	463	771	302	312	460	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	2005	358	334	3389	484	463	771	302	312	460	143
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	2005	358	334	3389	484	463	771	302	312	460	143
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	1604	358	334	2677	484	463	771	302	312	460	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	1604	358	334	2677	484	463	771	302	312	460	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	1604	358	334	2677	484	463	771	302	312	460	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.20	0.11	0.47	0.28	0.15	0.20	0.17	0.10	0.12	0.08
Crit Moves:		****		****			****				****	
Green Time:	17.2	81.3	106.8	28.4	92.5	118.0	25.5	43.5	60.6	25.5	43.5	71.8
Volume/Cap:	0.44	0.66	0.36	0.71	0.96	0.45	1.09	0.89	0.54	0.74	0.53	0.22
Uniform Del:	86.6	45.8	24.2	81.4	49.9	19.9	87.0	75.0	56.3	83.6	68.0	42.3
IncremntDel:	1.1	0.7	0.2	5.0	10.2	0.3	71.6	10.9	1.1	6.7	0.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.4	69.3	45.2	95.9	91.7	42.0	158.6	85.9	57.4	90.3	68.6	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.4	69.3	45.2	95.9	91.7	42.0	158.6	85.9	57.4	90.3	68.6	42.5
LOS by Move:	F	E	D	F	F	D	F	F	E+	F	E	D
HCM2kAvgQ:	5	30	19	13	58	26	20	23	15	12	12	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #7: Lawrence Expwy/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 588 1311 144***
Lanes: 1 0 3 0 2

Final Vol: Lanes: Signal=Protect Rights=Overlap
256*** 2
0
309 2
0
123 1

Vol Cnt Date: n/a
Cycle Time (sec): 170
Loss Time (sec): 12
Critical V/C: 0.731
Avg Crit Del (sec/veh): 83.2
Avg Delay (sec/veh): 72.4
LOS: E

Signal=Protect Rights=Overlap Lanes: Final Vol:
1 287
0
2 833***
0
2 347

Lanes: 2 0 3 0 1
Final Vol: 251 1945*** 205
Signal=Protect/Rights=Overlap

Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	251	2431	205	144	1660	585	254	307	122	347	830	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	2431	205	144	1660	585	254	307	122	347	830	287
Added Vol:	0	0	0	0	0	3	2	2	1	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	2431	205	144	1660	588	256	309	123	347	833	287
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1945	205	144	1311	588	256	309	123	347	833	287
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1945	205	144	1311	588	256	309	123	347	833	287
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	1945	205	144	1311	588	256	309	123	347	833	287
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.34	0.12	0.05	0.23	0.34	0.08	0.08	0.07	0.11	0.22	0.16
Crit Moves:		****		****			****				****	
Green Time:	15.4	72.7	95.6	25.4	82.8	105.6	22.8	38.9	54.3	22.8	38.9	64.3
Volume/Cap:	0.88	0.80	0.21	0.31	0.47	0.54	0.61	0.36	0.22	0.82	0.96	0.43
Uniform Del:	90.4	49.9	21.8	76.2	34.4	21.7	82.0	65.1	50.1	84.6	76.5	46.5
IncremntDel:	25.8	1.9	0.1	0.4	0.1	0.6	2.5	0.3	0.2	12.0	20.9	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	122.2	76.8	40.6	85.5	56.2	46.0	84.5	65.3	50.3	96.7	97.4	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	122.2	76.8	40.6	85.5	56.2	46.0	84.5	65.3	50.3	96.7	97.4	47.0
LOS by Move:	F	E-	D	F	E+	D	F	E	D	F	F	D
HCM2kAvgQ:	12	38	11	5	23	33	9	8	6	14	29	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #7: Lawrence Expwy/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 486 2677 334***
Lanes: 1 0 3 0 2

Final Vol: Lanes: Signal=Protect Rights=Overlap
466*** 2
0
774 2
0
304 1

Vol Cnt Date: n/a
Cycle Time (sec): 190
Loss Time (sec): 12
Critical V/C: 0.699
Avg Crit Del (sec/veh): 87.2
Avg Delay (sec/veh): 82.3
LOS: F

Signal=Protect Rights=Overlap Lanes: Final Vol:
1 143
0
2 462***
0
2 312

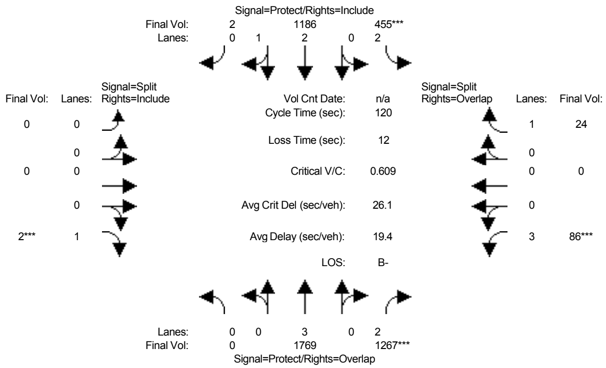
Lanes: 2 0 3 0 1
Final Vol: 125 1604*** 358
Signal=Protect/Rights=Overlap

Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	125	2005	358	334	3389	484	463	771	302	312	460	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	2005	358	334	3389	484	463	771	302	312	460	143
Added Vol:	0	0	0	0	0	2	3	3	2	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	2005	358	334	3389	486	466	774	304	312	462	143
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	1604	358	334	2677	486	466	774	304	312	462	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	1604	358	334	2677	486	466	774	304	312	462	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	1604	358	334	2677	486	466	774	304	312	462	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.20	0.11	0.47	0.28	0.15	0.20	0.17	0.10	0.12	0.08
Crit Moves:		****		****			****				****	
Green Time:	17.2	81.3	106.8	28.4	92.5	118.0	25.5	43.5	60.6	25.5	43.5	71.8
Volume/Cap:	0.44	0.66	0.36	0.71	0.96	0.45	1.10	0.89	0.54	0.74	0.53	0.22
Uniform Del:	86.6	45.8	24.2	81.4	49.9	20.0	87.0	75.1	56.4	83.6	68.0	42.3
IncremntDel:	1.1	0.7	0.2	5.0	10.2	0.3	74.1	11.2	1.1	6.7	0.6	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.4	69.3	45.2	95.9	91.7	42.1	161.1	86.3	57.5	90.3	68.7	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.4	69.3	45.2	95.9	91.7	42.1	161.1	86.3	57.5	90.3	68.7	42.5
LOS by Move:	F	E	D	F	F	D	F	F	E+	F	E	D
HCM2kAvgQ:	5	30	19	13	58	27	20	23	16	12	12	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #8: Wolfe Rd/Apple Park Wy

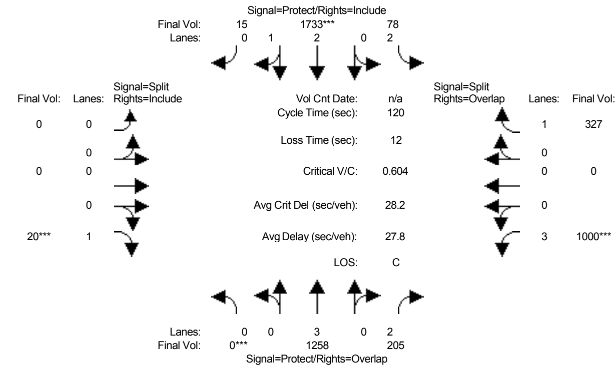


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1769	1267	455	1186	2	0	0	2	86	0	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1769	1267	455	1186	2	0	0	2	86	0	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.99	0.01	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5591	9	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.40	0.14	0.21	0.21	0.00	0.00	0.00	0.02	0.00	0.01
Crit Moves:			****	****					****	****		
Green Time:	0.0	60.6	70.6	27.4	88.0	88.0	0.0	0.0	10.0	10.0	0.0	37.4
Volume/Cap:	0.00	0.61	0.68	0.63	0.29	0.29	0.00	0.00	0.01	0.23	0.00	0.04
Uniform Del:	0.0	21.3	17.0	41.7	5.4	5.4	0.0	0.0	50.5	51.4	0.0	28.8
IncremntDel:	0.0	0.4	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	21.7	18.1	43.6	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.7	18.1	43.6	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.8
LOS by Move:	A	C+	B-	D	A	A	A	A	D	D-	A	C
HCM2kAvgQ:	0	15	19	9	5	5	0	0	0	1	0	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #8: Wolfe Rd/Apple Park Wy

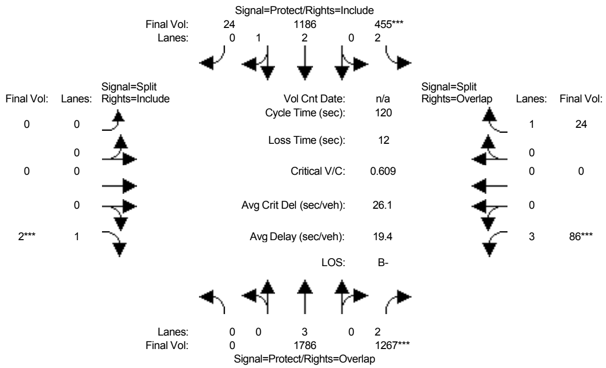


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1258	205	78	1733	15	0	0	20	1000	0	327
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1258	205	78	1733	15	0	0	20	1000	0	327
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.97	0.03	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5552	48	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.07	0.02	0.31	0.31	0.00	0.00	0.01	0.22	0.00	0.19
Crit Moves:	****				****				****	****		
Green Time:	0.0	45.5	86.0	12.0	57.5	57.5	0.0	0.0	10.0	40.5	0.0	52.5
Volume/Cap:	0.00	0.58	0.09	0.25	0.65	0.65	0.00	0.00	0.14	0.65	0.00	0.43
Uniform Del:	0.0	29.7	5.2	49.8	23.7	23.7	0.0	0.0	51.0	33.8	0.0	23.3
IncremntDel:	0.0	0.4	0.0	0.4	0.6	0.6	0.0	0.0	0.4	1.0	0.0	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	30.1	5.2	50.2	24.2	24.2	0.0	0.0	51.4	34.8	0.0	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.1	5.2	50.2	24.2	24.2	0.0	0.0	51.4	34.8	0.0	23.7
LOS by Move:	A	C	A	D	C	C	A	A	D-	C-	A	C
HCM2kAvgQ:	0	12	1	1	16	16	0	0	1	14	0	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #8: Wolfe Rd/Apple Park Wy

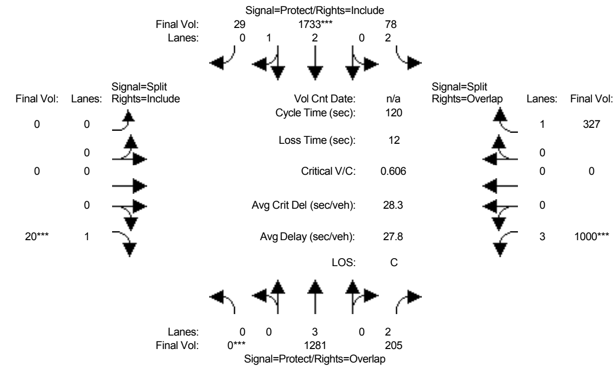


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1769	1267	455	1186	2	0	0	2	86	0	24
Added Vol:	0	17	0	0	0	22	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1786	1267	455	1186	24	0	0	2	86	0	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1786	1267	455	1186	24	0	0	2	86	0	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1786	1267	455	1186	24	0	0	2	86	0	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1786	1267	455	1186	24	0	0	2	86	0	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.94	0.06	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5489	111	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.40	0.14	0.22	0.22	0.00	0.00	0.00	0.02	0.00	0.01
Crit Moves:			****	****					****	****		
Green Time:	0.0	60.6	70.6	27.4	88.0	88.0	0.0	0.0	10.0	10.0	0.0	37.4
Volume/Cap:	0.00	0.62	0.68	0.63	0.29	0.29	0.00	0.00	0.01	0.23	0.00	0.04
Uniform Del:	0.0	21.4	17.0	41.7	5.4	5.4	0.0	0.0	50.5	51.4	0.0	28.8
IncremntDel:	0.0	0.4	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	21.9	18.1	43.6	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.9	18.1	43.6	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.8
LOS by Move:	A	C+	B-	D	A	A	A	A	D	D-	A	C
HCM2kAvgQ:	0	15	19	9	5	5	0	0	0	1	0	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #8: Wolfe Rd/Apple Park Wy



Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1258	205	78	1733	15	0	0	20	1000	0	327
Added Vol:	0	23	0	0	0	14	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1281	205	78	1733	29	0	0	20	1000	0	327
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1281	205	78	1733	29	0	0	20	1000	0	327
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1281	205	78	1733	29	0	0	20	1000	0	327
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1281	205	78	1733	29	0	0	20	1000	0	327
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.95	0.05	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5508	92	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.07	0.02	0.31	0.31	0.00	0.00	0.01	0.22	0.00	0.19
Crit Moves:	****				****				****	****		
Green Time:	0.0	45.8	86.1	11.9	57.7	57.7	0.0	0.0	10.0	40.3	0.0	52.2
Volume/Cap:	0.00	0.59	0.09	0.25	0.65	0.65	0.00	0.00	0.14	0.65	0.00	0.43
Uniform Del:	0.0	29.6	5.1	49.9	23.6	23.6	0.0	0.0	51.0	33.9	0.0	23.6
IncremntDel:	0.0	0.4	0.0	0.4	0.6	0.6	0.0	0.0	0.4	1.0	0.0	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	30.0	5.1	50.4	24.2	24.2	0.0	0.0	51.4	35.0	0.0	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.0	5.1	50.4	24.2	24.2	0.0	0.0	51.4	35.0	0.0	24.0
LOS by Move:	A	C	A	D	C	C	A	A	D-	C-	A	C
HCM2kAvgQ:	0	12	1	1	16	16	0	0	1	14	0	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #9: Wolfe Rd/Pruneridge Ave

Signal=Protect/Rights=Include
Final Vol: 30 1224 44***
Lanes: 0 1 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
			Cycle Time (sec):	125			
44	1					0	131
			Loss Time (sec):	12			
	0					1	
3***	0		Critical V/C:	0.591		0	4
	1		Avg Crit Del (sec/veh):	25.8		0	
136	0		Avg Delay (sec/veh):	26.6		1	224***
			LOS:	C			

Lanes: 2 0 4 1 0
Final Vol: 89 2795*** 65
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	89	2795	65	44	1224	30	44	3	136	224	4	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	2795	65	44	1224	30	44	3	136	224	4	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	2795	65	44	1224	30	44	3	136	224	4	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	2795	65	44	1224	30	44	3	136	224	4	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	2795	65	44	1224	30	44	3	136	224	4	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	2795	65	44	1224	30	44	3	136	224	4	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.88	0.12	1.00	2.93	0.07	1.00	0.02	0.98	1.00	0.03	0.97
Final Sat.:	3150	9186	214	1750	5466	134	1750	39	1761	1750	53	1747
Capacity Analysis Module:												
Vol/Sat:	0.03	0.30	0.30	0.03	0.22	0.22	0.03	0.08	0.08	0.13	0.08	0.08
Crit Moves:		****		****				****		****		
Green Time:	14.1	63.3	63.3	7.0	56.2	56.2	17.6	16.1	16.1	26.6	25.1	25.1
Volume/Cap:	0.25	0.60	0.60	0.45	0.50	0.50	0.18	0.60	0.60	0.60	0.37	0.37
Uniform Del:	50.7	21.9	21.9	57.1	24.4	24.4	47.3	51.4	51.4	44.4	43.1	43.1
IncremntDel:	0.4	0.2	0.2	3.2	0.2	0.2	0.3	4.4	4.4	2.7	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.0	22.1	22.1	60.4	24.5	24.5	47.7	55.8	55.8	47.1	43.8	43.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	22.1	22.1	60.4	24.5	24.5	47.7	55.8	55.8	47.1	43.8	43.8
LOS by Move:	D-	C+	C+	E	C	C	D	E+	E+	D	D	D
HCM2kAvgQ:	2	16	16	2	11	11	2	6	6	9	5	5

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #9: Wolfe Rd/Pruneridge Ave

Signal=Protect/Rights=Include
Final Vol: 33 2574*** 131
Lanes: 0 1 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
			Cycle Time (sec):	125			
35	1					0	80
			Loss Time (sec):	12			
	0					1	
2***	0		Critical V/C:	0.716		0	2
	1		Avg Crit Del (sec/veh):	22.0		0	
108	0		Avg Delay (sec/veh):	22.4		1	125***
			LOS:	C+			

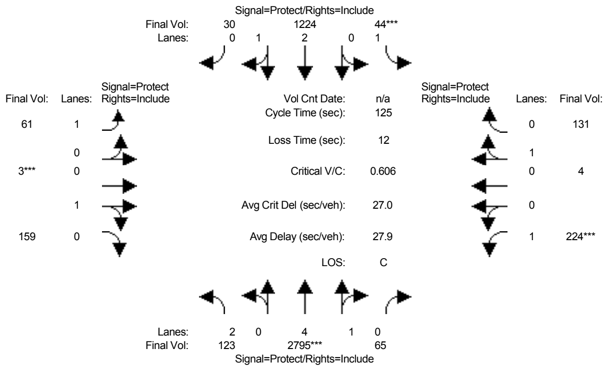
Lanes: 2 0 4 1 0
Final Vol: 156*** 1358 216
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	156	1358	216	131	2574	33	35	2	108	125	2	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1358	216	131	2574	33	35	2	108	125	2	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	156	1358	216	131	2574	33	35	2	108	125	2	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	1358	216	131	2574	33	35	2	108	125	2	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	1358	216	131	2574	33	35	2	108	125	2	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	1358	216	131	2574	33	35	2	108	125	2	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.28	0.72	1.00	2.96	0.04	1.00	0.02	0.98	1.00	0.02	0.98
Final Sat.:	3150	8108	1290	1750	5529	71	1750	33	1767	1750	44	1756
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.07	0.47	0.47	0.02	0.06	0.06	0.07	0.05	0.05
Crit Moves:	****				****			****		****		
Green Time:	8.6	62.1	62.1	27.8	81.2	81.2	9.5	10.7	10.7	12.5	13.6	13.6
Volume/Cap:	0.72	0.34	0.34	0.34	0.72	0.72	0.26	0.72	0.72	0.72	0.42	0.42
Uniform Del:	57.0	19.0	19.0	40.9	14.3	14.3	54.4	55.7	55.7	54.6	52.0	52.0
IncremntDel:	10.8	0.0	0.0	0.5	0.7	0.7	1.1	14.9	14.9	13.3	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.8	19.0	19.0	41.4	15.0	15.0	55.5	70.6	70.6	67.8	53.5	53.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.8	19.0	19.0	41.4	15.0	15.0	55.5	70.6	70.6	67.8	53.5	53.5
LOS by Move:	E	B-	B-	D	B	B	E+	E	E	E	D-	D-
HCM2kAvgQ:	5	7	7	4	22	22	2	6	6	7	3	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #9: Wolfe Rd/Pruneridge Ave

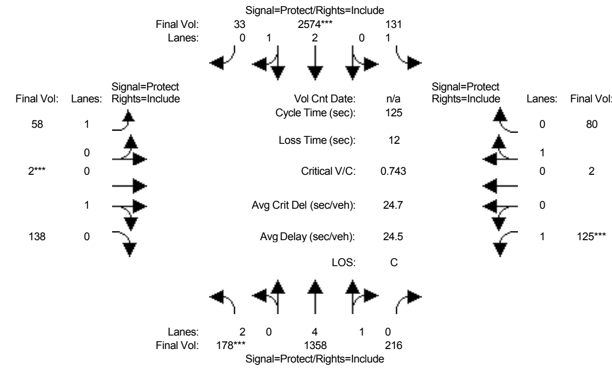


Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	89	2795	65	44	1224	30	44	3	136	224	4	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	2795	65	44	1224	30	44	3	136	224	4	131
Added Vol:	34	0	0	0	0	0	17	0	23	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	2795	65	44	1224	30	61	3	159	224	4	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	2795	65	44	1224	30	61	3	159	224	4	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	2795	65	44	1224	30	61	3	159	224	4	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	2795	65	44	1224	30	61	3	159	224	4	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.88	0.12	1.00	2.93	0.07	1.00	0.02	0.98	1.00	0.03	0.97
Final Sat.:	3150	9186	214	1750	5466	134	1750	33	1767	1750	53	1747
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.30	0.03	0.22	0.22	0.03	0.09	0.09	0.13	0.08	0.08
Crit Moves:		****		****				****		****		
Green Time:	13.8	61.8	61.8	7.0	55.0	55.0	18.2	18.3	18.3	26.0	26.0	26.0
Volume/Cap:	0.35	0.62	0.62	0.45	0.51	0.51	0.24	0.62	0.62	0.62	0.36	0.36
Uniform Del:	51.5	23.0	23.0	57.1	25.3	25.3	47.3	50.1	50.1	45.0	42.4	42.4
IncremntDel:	0.6	0.3	0.3	3.2	0.2	0.2	0.5	4.3	4.3	3.2	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.1	23.2	23.2	60.4	25.4	25.4	47.7	54.4	54.4	48.1	43.0	43.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	23.2	23.2	60.4	25.4	25.4	47.7	54.4	54.4	48.1	43.0	43.0
LOS by Move:	D-	C	C	E	C	C	D	D-	D-	D	D	D
HCM2kAvgQ:	3	16	16	2	11	11	2	7	7	9	5	5

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #9: Wolfe Rd/Pruneridge Ave

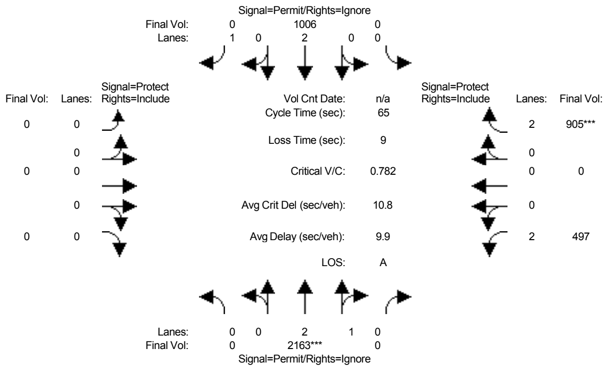


Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	156	1358	216	131	2574	33	35	2	108	125	2	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1358	216	131	2574	33	35	2	108	125	2	80
Added Vol:	22	0	0	0	0	0	23	0	30	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	1358	216	131	2574	33	58	2	138	125	2	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1358	216	131	2574	33	58	2	138	125	2	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1358	216	131	2574	33	58	2	138	125	2	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1358	216	131	2574	33	58	2	138	125	2	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.28	0.72	1.00	2.96	0.04	1.00	0.01	0.99	1.00	0.02	0.98
Final Sat.:	3150	8108	1290	1750	5529	71	1750	26	1774	1750	44	1756
Capacity Analysis Module:												
Vol/Sat:	0.06	0.17	0.17	0.07	0.47	0.47	0.03	0.08	0.08	0.07	0.05	0.05
Crit Moves:	****				****			****		****		
Green Time:	9.5	60.7	60.7	27.1	78.4	78.4	10.3	13.1	13.1	12.0	14.8	14.8
Volume/Cap:	0.74	0.34	0.34	0.34	0.74	0.74	0.40	0.74	0.74	0.74	0.39	0.39
Uniform Del:	56.5	19.8	19.8	41.4	16.3	16.3	54.4	54.3	54.3	55.0	50.9	50.9
IncremntDel:	11.8	0.0	0.0	0.5	0.9	0.9	1.8	14.7	14.7	16.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.3	19.9	19.9	41.9	17.2	17.2	56.2	69.0	69.0	71.2	52.1	52.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	19.9	19.9	41.9	17.2	17.2	56.2	69.0	69.0	71.2	52.1	52.1
LOS by Move:	E	B-	B-	D	B	B	E+	E	E	E	D-	D-
HCM2kAvgQ:	6	7	7	4	23	23	3	7	7	7	3	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #10: Wolfe Rd/I-280 NB Ramps



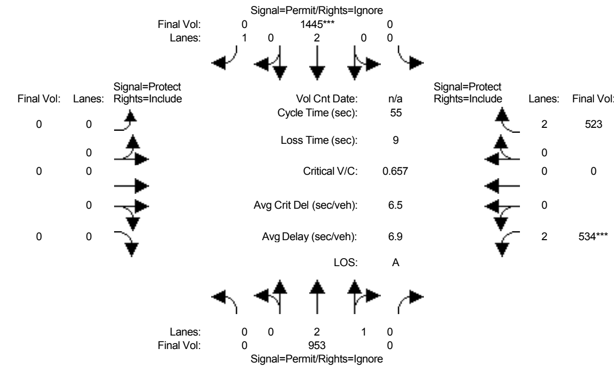
Street Name: Wolfe Road / I-280 Northbound Ramps

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	2163	0	0	1006	0	0	0	0	497	0	905
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2163	0	0	1006	0	0	0	0	497	0	905
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2163	0	0	1006	0	0	0	0	497	0	905
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2163	0	0	1006	0	0	0	0	497	0	905
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2163	0	0	1006	0	0	0	0	497	0	905
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2163	0	0	1006	0	0	0	0	497	0	905
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.16	0.00	0.29
Crit Moves:		****										****
Green Time:	0.0	32.1	0.0	0.0	32.1	0.0	0.0	0.0	0.0	23.9	0.0	23.9
Volume/Cap:	0.00	0.78	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.43	0.00	0.78
Uniform Del:	0.0	13.6	0.0	0.0	11.3	0.0	0.0	0.0	0.0	15.4	0.0	18.2
IncremntDel:	0.0	1.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	3.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.35	0.00	0.00	0.35	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.2	0.0	0.0	4.3	0.0	0.0	0.0	0.0	15.7	0.0	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.2	0.0	0.0	4.3	0.0	0.0	0.0	0.0	15.7	0.0	21.8
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	C+
HCM2kAvgQ:	0	10	0	0	4	0	0	0	0	5	0	12

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #10: Wolfe Rd/I-280 NB Ramps



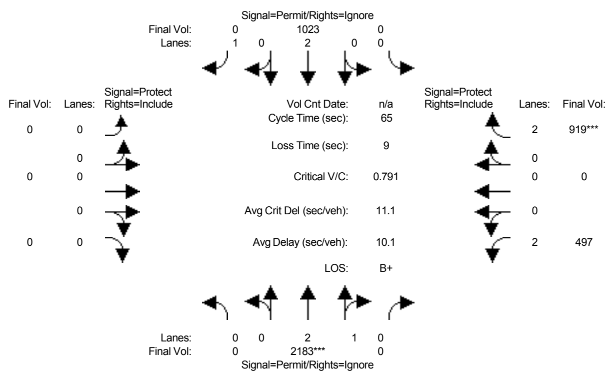
Street Name: Wolfe Road / I-280 Northbound Ramps

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	953	0	0	1445	0	0	0	0	534	0	523
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	953	0	0	1445	0	0	0	0	534	0	523
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	953	0	0	1445	0	0	0	0	534	0	523
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	953	0	0	1445	0	0	0	0	534	0	523
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	953	0	0	1445	0	0	0	0	534	0	523
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	953	0	0	1445	0	0	0	0	534	0	523
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.17	0.00	0.17
Crit Moves:					****					****		
Green Time:	0.0	31.8	0.0	0.0	31.8	0.0	0.0	0.0	0.0	14.2	0.0	14.2
Volume/Cap:	0.00	0.29	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.66	0.00	0.64
Uniform Del:	0.0	5.9	0.0	0.0	7.9	0.0	0.0	0.0	0.0	18.2	0.0	18.2
IncremntDel:	0.0	0.1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	2.0	0.0	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.09	0.00	0.00	0.09	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	0.6	0.0	0.0	1.4	0.0	0.0	0.0	0.0	20.2	0.0	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.6	0.0	0.0	1.4	0.0	0.0	0.0	0.0	20.2	0.0	19.9
LOS by Move:	A	A	A	A	A	A	A	A	A	C+	A	B-
HCM2kAvgQ:	0	1	0	0	3	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #10: Wolfe Rd/I-280 NB Ramps

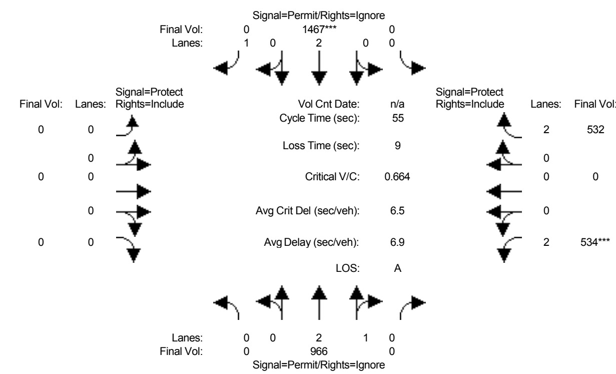


Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	2163	0	0	1006	0	0	0	0	497	0	905
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2163	0	0	1006	0	0	0	0	497	0	905
Added Vol:	0	20	0	0	17	0	0	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2183	0	0	1023	0	0	0	0	497	0	919
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2183	0	0	1023	0	0	0	0	497	0	919
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2183	0	0	1023	0	0	0	0	497	0	919
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2183	0	0	1023	0	0	0	0	497	0	919
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.16	0.00	0.29
Crit Moves:		****										****
Green Time:	0.0	32.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	24.0	0.0	24.0
Volume/Cap:	0.00	0.79	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.43	0.00	0.79
Uniform Del:	0.0	13.7	0.0	0.0	11.4	0.0	0.0	0.0	0.0	15.4	0.0	18.3
IncremntDel:	0.0	1.6	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.35	0.00	0.00	0.35	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.5	0.0	0.0	4.4	0.0	0.0	0.0	0.0	15.6	0.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.5	0.0	0.0	4.4	0.0	0.0	0.0	0.0	15.6	0.0	22.0
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	C+
HCM2kAvgQ:	0	10	0	0	4	0	0	0	0	5	0	12

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #10: Wolfe Rd/I-280 NB Ramps



Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	953	0	0	1445	0	0	0	0	534	0	523
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	953	0	0	1445	0	0	0	0	534	0	523
Added Vol:	0	13	0	0	22	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	966	0	0	1467	0	0	0	0	534	0	532
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	966	0	0	1467	0	0	0	0	534	0	532
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	966	0	0	1467	0	0	0	0	534	0	532
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	966	0	0	1467	0	0	0	0	534	0	532
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.17	0.00	0.17
Crit Moves:					****					****		
Green Time:	0.0	32.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	14.0	0.0	14.0
Volume/Cap:	0.00	0.30	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.66	0.00	0.66
Uniform Del:	0.0	5.8	0.0	0.0	7.9	0.0	0.0	0.0	0.0	18.4	0.0	18.4
IncremntDel:	0.0	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	2.1	0.0	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.07	0.00	0.00	0.07	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	0.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	20.5	0.0	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	20.5	0.0	20.4
LOS by Move:	A	A	A	A	A	A	A	A	A	C+	A	C+
HCM2kAvgQ:	0	1	0	0	3	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #11: Wolfe Rd/I-280 SB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1038 0
Lanes: 1 0 4 0 0

Signal=Protect Rights=Overlap | Signal=Protect Rights=Include

Final Vol:	Lanes:				Lanes:	Final Vol:
1192***	2	Vol Cnt Date:	n/a		0	0
		Cycle Time (sec):	60			
	0	Loss Time (sec):	9		0	
0	0	Critical V/C:	0.883		0	0
	0	Avg Crit Del (sec/veh):	22.5		0	
573	2	Avg Delay (sec/veh):	18.4		0	0
		LOS:	B-			

Lanes: 0 0 2 0 1
Final Vol: 0 1413*** 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1413	0	0	1038	0	1192	0	573	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1413	0	0	1038	0	1192	0	573	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.00	0.00	0.14	0.00	0.38	0.00	0.18	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	25.3	0.0	0.0	25.3	0.0	25.7	0.0	25.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.88	0.00	0.00	0.32	0.00	0.88	0.00	0.42	0.00	0.00	0.00
Uniform Del:	0.0	16.0	0.0	0.0	11.6	0.0	15.8	0.0	12.0	0.0	0.0	0.0
IncremntDel:	0.0	6.2	0.0	0.0	0.1	0.0	7.2	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	22.1	0.0	0.0	11.7	0.0	22.9	0.0	12.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.1	0.0	0.0	11.7	0.0	22.9	0.0	12.2	0.0	0.0	0.0
LOS by Move:	A	C+	A	A	B+	A	C+	A	B	A	A	A
HCM2kAvgQ:	0	11	0	0	2	0	16	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #11: Wolfe Rd/I-280 SB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1300 0
Lanes: 1 0 4 0 0

Signal=Protect Rights=Overlap | Signal=Protect Rights=Include

Final Vol:	Lanes:				Lanes:	Final Vol:
283	2	Vol Cnt Date:	n/a		0	0
		Cycle Time (sec):	55			
	0	Loss Time (sec):	9		0	
0	0	Critical V/C:	0.524		0	0
	0	Avg Crit Del (sec/veh):	9.3		0	
363***	2	Avg Delay (sec/veh):	8.3		0	0
		LOS:	A			

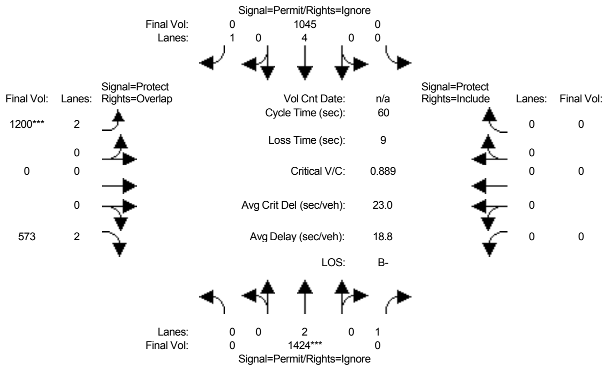
Lanes: 0 0 2 0 1
Final Vol: 0 1227*** 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1227	0	0	1300	0	283	0	363	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1227	0	0	1300	0	283	0	363	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1227	0	0	1300	0	283	0	363	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1227	0	0	1300	0	283	0	363	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1227	0	0	1300	0	283	0	363	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1227	0	0	1300	0	283	0	363	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.00	0.00	0.17	0.00	0.09	0.00	0.12	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	33.9	0.0	0.0	33.9	0.0	12.1	0.0	12.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.52	0.00	0.00	0.28	0.00	0.41	0.00	0.52	0.00	0.00	0.00
Uniform Del:	0.0	6.0	0.0	0.0	4.9	0.0	18.4	0.0	18.9	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.2	0.0	0.0	4.9	0.0	18.8	0.0	19.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.2	0.0	0.0	4.9	0.0	18.8	0.0	19.6	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B-	A	B-	A	A	A
HCM2kAvgQ:	0	1	0	0	0	0	3	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #11: Wolfe Rd/I-280 SB Ramps

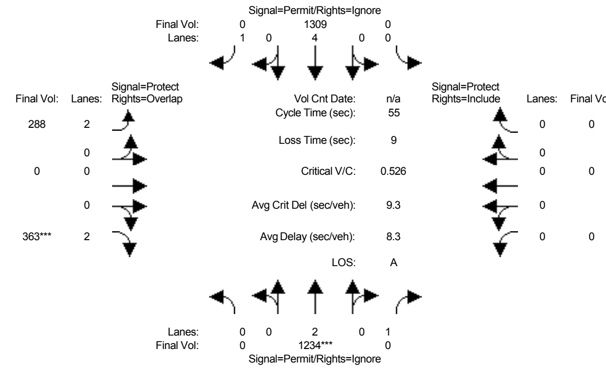


Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1413	0	0	1038	0	1192	0	573	0	0	0
Added Vol:	0	11	0	0	7	0	8	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1424	0	0	1045	0	1200	0	573	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1424	0	0	1045	0	1200	0	573	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1424	0	0	1045	0	1200	0	573	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1424	0	0	1045	0	1200	0	573	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.00	0.00	0.14	0.00	0.38	0.00	0.18	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	25.3	0.0	0.0	25.3	0.0	25.7	0.0	25.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.89	0.00	0.00	0.33	0.00	0.89	0.00	0.42	0.00	0.00	0.00
Uniform Del:	0.0	16.1	0.0	0.0	11.6	0.0	15.8	0.0	12.0	0.0	0.0	0.0
IncremntDel:	0.0	6.5	0.0	0.0	0.1	0.0	7.6	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	22.6	0.0	0.0	11.7	0.0	23.5	0.0	12.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.6	0.0	0.0	11.7	0.0	23.5	0.0	12.2	0.0	0.0	0.0
LOS by Move:	A	C+	A	A	B+	A	C	A	B	A	A	A
HCM2kAvgQ:	0	12	0	0	2	0	17	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #11: Wolfe Rd/I-280 SB Ramps

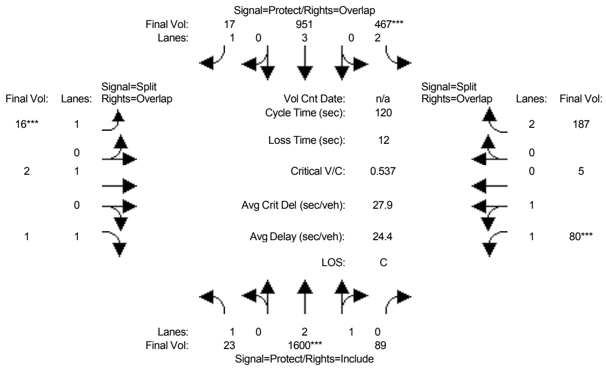


Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1227	0	0	1300	0	283	0	363	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1227	0	0	1300	0	283	0	363	0	0	0
Added Vol:	0	7	0	0	9	0	5	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1234	0	0	1309	0	288	0	363	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1234	0	0	1309	0	288	0	363	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1234	0	0	1309	0	288	0	363	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1234	0	0	1309	0	288	0	363	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.00	0.00	0.17	0.00	0.09	0.00	0.12	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	34.0	0.0	0.0	34.0	0.0	12.0	0.0	12.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.53	0.00	0.00	0.28	0.00	0.42	0.00	0.53	0.00	0.00	0.00
Uniform Del:	0.0	6.0	0.0	0.0	4.9	0.0	18.5	0.0	19.0	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.2	0.0	0.0	4.9	0.0	18.9	0.0	19.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.2	0.0	0.0	4.9	0.0	18.9	0.0	19.7	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B-	A	B-	A	A	A
HCM2kAvgQ:	0	1	0	0	0	0	3	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #12: Wolfe Rd/Vallco Pkwy

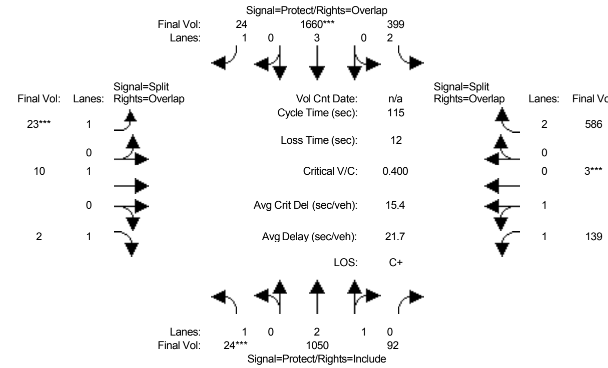


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	1600	89	467	951	17	16	2	1	80	5	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	1600	89	467	951	17	16	2	1	80	5	187
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	1600	89	467	951	17	16	2	1	80	5	187
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	1600	89	467	951	17	16	2	1	80	5	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1600	89	467	951	17	16	2	1	80	5	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	1600	89	467	951	17	16	2	1	80	5	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.84	0.16	2.00	3.00	1.00	1.00	1.00	1.00	1.88	0.12	2.00
Final Sat.:	1750	5305	295	3150	5700	1750	1750	1900	1750	3341	209	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.30	0.30	0.15	0.17	0.01	0.01	0.00	0.00	0.02	0.02	0.06
Crit Moves:		****		****			****			****		
Green Time:	22.8	59.0	59.0	29.0	65.2	75.2	10.0	10.0	32.8	10.0	10.0	39.0
Volume/Cap:	0.07	0.61	0.61	0.61	0.31	0.02	0.11	0.01	0.00	0.29	0.29	0.18
Uniform Del:	39.9	22.2	22.2	40.5	15.0	8.4	50.9	50.5	31.7	51.7	51.7	29.1
IncremntDel:	0.1	0.4	0.4	1.5	0.1	0.0	0.3	0.0	0.0	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.0	22.6	22.6	42.0	15.1	8.4	51.2	50.5	31.7	52.2	52.2	29.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.0	22.6	22.6	42.0	15.1	8.4	51.2	50.5	31.7	52.2	52.2	29.1
LOS by Move:	D	C+	C+	D	B	A	D-	D	C	D-	D-	C
HCM2kAvgQ:	1	15	15	9	6	0	1	0	0	2	2	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #12: Wolfe Rd/Vallco Pkwy

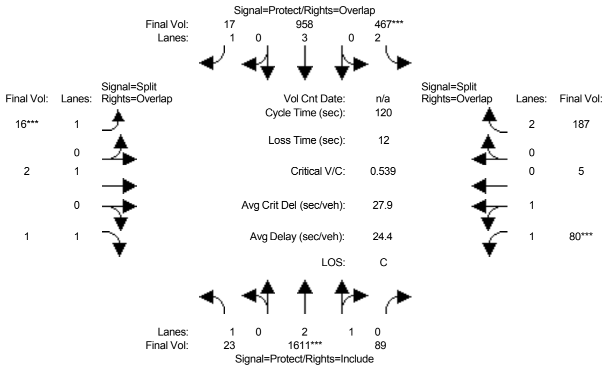


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	1050	92	399	1660	24	23	10	2	139	3	586
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	1050	92	399	1660	24	23	10	2	139	3	586
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	1050	92	399	1660	24	23	10	2	139	3	586
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	1050	92	399	1660	24	23	10	2	139	3	586
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	1050	92	399	1660	24	23	10	2	139	3	586
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	1050	92	399	1660	24	23	10	2	139	3	586
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.75	0.25	2.00	3.00	1.00	1.00	1.00	1.00	1.96	0.04	2.00
Final Sat.:	1750	5148	451	3150	5700	1750	1750	1900	1750	3475	75	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.13	0.29	0.01	0.01	0.01	0.00	0.04	0.04	0.19
Crit Moves:	****				****		****				****	
Green Time:	7.0	48.4	48.4	30.1	71.4	81.4	10.0	10.0	17.0	14.6	14.6	44.6
Volume/Cap:	0.23	0.48	0.48	0.48	0.47	0.02	0.15	0.06	0.01	0.32	0.32	0.48
Uniform Del:	51.4	24.2	24.2	35.9	11.6	5.0	48.6	48.2	41.8	45.7	45.7	26.5
IncremntDel:	1.1	0.2	0.2	0.5	0.1	0.0	0.5	0.2	0.0	0.4	0.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.5	24.4	24.4	36.4	11.7	5.0	49.0	48.3	41.8	46.1	46.1	26.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	24.4	24.4	36.4	11.7	5.0	49.0	48.3	41.8	46.1	46.1	26.8
LOS by Move:	D-	C	C	D+	B+	A	D	D	D	D	D	C
HCM2kAvgQ:	1	10	10	7	10	0	1	0	0	3	3	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #12: Wolfe Rd/Vallco Pkwy

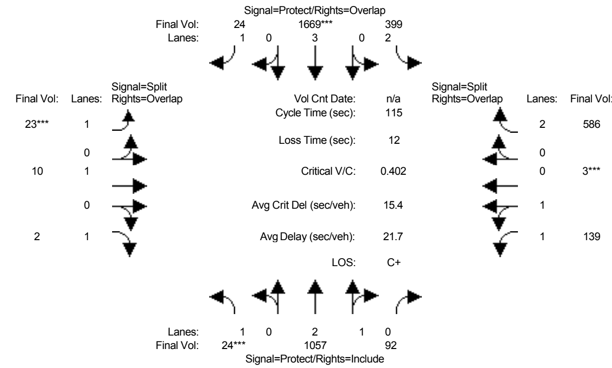


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	1600	89	467	951	17	16	2	1	80	5	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	1600	89	467	951	17	16	2	1	80	5	187
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	1611	89	467	958	17	16	2	1	80	5	187
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	1611	89	467	958	17	16	2	1	80	5	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	1611	89	467	958	17	16	2	1	80	5	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	1611	89	467	958	17	16	2	1	80	5	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.84	0.16	2.00	3.00	1.00	1.00	1.00	1.00	1.88	0.12	2.00
Final Sat.:	1750	5306	293	3150	5700	1750	1750	1900	1750	3341	209	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.30	0.30	0.15	0.17	0.01	0.01	0.00	0.00	0.02	0.02	0.06
Crit Moves:		****		****			****			****		
Green Time:	22.7	59.1	59.1	28.9	65.3	75.3	10.0	10.0	32.7	10.0	10.0	38.9
Volume/Cap:	0.07	0.62	0.62	0.62	0.31	0.02	0.11	0.01	0.00	0.29	0.29	0.18
Uniform Del:	40.0	22.2	22.2	40.6	15.0	8.4	50.9	50.5	31.8	51.7	51.7	29.2
IncremntDel:	0.1	0.4	0.4	1.5	0.1	0.0	0.3	0.0	0.0	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.1	22.6	22.6	42.2	15.0	8.4	51.2	50.5	31.8	52.2	52.2	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.1	22.6	22.6	42.2	15.0	8.4	51.2	50.5	31.8	52.2	52.2	29.2
LOS by Move:	D	C+	C+	D	B	A	D-	D	C	D-	D-	C
HCM2kAvgQ:	1	15	15	9	6	0	1	0	0	2	2	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

Intersection #12: Wolfe Rd/Vallco Pkwy



Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	1050	92	399	1660	24	23	10	2	139	3	586
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	1050	92	399	1660	24	23	10	2	139	3	586
Added Vol:	0	7	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	1057	92	399	1669	24	23	10	2	139	3	586
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	1057	92	399	1669	24	23	10	2	139	3	586
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	1057	92	399	1669	24	23	10	2	139	3	586
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	1057	92	399	1669	24	23	10	2	139	3	586
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.75	0.25	2.00	3.00	1.00	1.00	1.00	1.00	1.96	0.04	2.00
Final Sat.:	1750	5151	448	3150	5700	1750	1750	1900	1750	3475	75	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.21	0.21	0.13	0.29	0.01	0.01	0.01	0.00	0.04	0.04	0.19
Crit Moves:	****				****		****				****	
Green Time:	7.0	48.5	48.5	30.0	71.5	81.5	10.0	10.0	17.0	14.5	14.5	44.5
Volume/Cap:	0.23	0.49	0.49	0.49	0.47	0.02	0.15	0.06	0.01	0.32	0.32	0.48
Uniform Del:	51.4	24.2	24.2	36.0	11.6	4.9	48.6	48.2	41.8	45.7	45.7	26.6
IncremntDel:	1.1	0.2	0.2	0.5	0.1	0.0	0.5	0.2	0.0	0.4	0.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.5	24.3	24.3	36.5	11.7	5.0	49.0	48.3	41.8	46.2	46.2	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	24.3	24.3	36.5	11.7	5.0	49.0	48.3	41.8	46.2	46.2	26.9
LOS by Move:	D-	C	C	D+	B+	A	D	D	D	D	D	C
HCM2kAvgQ:	1	10	10	7	10	0	1	0	0	3	3	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

Signal=Protect/Rights=Ignore
Final Vol: 0 265 193***
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
453***	2		Vol Cnt Date:	n/a			
			Cycle Time (sec):	120		0	243
	0		Loss Time (sec):	12		1	
609	3		Critical V/C:	0.675		2	691***
	0		Avg Crit Del (sec/veh):	42.7		0	
88	1		Avg Delay (sec/veh):	40.8		2	64
			LOS:	D			

Lanes: 1 0 2 1 0
Final Vol: 191 916*** 130
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	191	916	130	193	265	505	453	609	88	64	691	243
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	916	130	193	265	505	453	609	88	64	691	243
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	916	130	193	265	505	453	609	88	64	691	243
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	916	130	193	265	0	453	609	88	64	691	243
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	916	130	193	265	0	453	609	88	64	691	243
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	916	130	193	265	0	453	609	88	64	691	243
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.61	0.39	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.19	0.81
Final Sat.:	1750	4903	696	1750	3800	1750	3150	5700	1750	3150	4141	1456
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.19	0.11	0.07	0.00	0.14	0.11	0.05	0.02	0.17	0.17
Crit Moves:		****		****			****				****	
Green Time:	29.9	33.2	33.2	19.6	22.9	0.0	25.6	35.7	35.7	19.5	29.7	29.7
Volume/Cap:	0.44	0.68	0.68	0.68	0.37	0.00	0.68	0.36	0.17	0.13	0.68	0.68
Uniform Del:	37.9	38.6	38.6	47.2	42.3	0.0	43.4	33.1	31.2	43.0	40.8	40.8
IncremntDel:	0.7	1.2	1.2	6.3	0.3	0.0	2.7	0.1	0.2	0.1	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.6	39.8	39.8	53.5	42.6	0.0	46.2	33.3	31.3	43.1	42.2	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.6	39.8	39.8	53.5	42.6	0.0	46.2	33.3	31.3	43.1	42.2	42.2
LOS by Move:	D+	D	D	D-	D	A	D	C-	C	D	D	D
HCM2kAvgQ:	6	12	12	7	4	0	10	5	2	1	11	11

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

Signal=Protect/Rights=Ignore
Final Vol: 0 919*** 331
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
557***	2		Vol Cnt Date:	n/a			
			Cycle Time (sec):	124		0	222
	0		Loss Time (sec):	12		1	
1378	3		Critical V/C:	0.714		2	681***
	0		Avg Crit Del (sec/veh):	44.0		0	
298	1		Avg Delay (sec/veh):	40.7		2	195
			LOS:	D			

Lanes: 1 0 2 1 0
Final Vol: 114*** 261 55
Signal=Protect/Rights=Include

Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	114	261	55	331	919	487	557	1378	298	195	681	222
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	261	55	331	919	487	557	1378	298	195	681	222
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	261	55	331	919	487	557	1378	298	195	681	222
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	261	55	331	919	0	557	1378	298	195	681	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	261	55	331	919	0	557	1378	298	195	681	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	261	55	331	919	0	557	1378	298	195	681	222
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.46	0.54	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.24	0.76
Final Sat.:	1750	4624	974	1750	3800	1750	3150	5700	1750	3150	4221	1376
Capacity Analysis Module:												
Vol/Sat:	0.07	0.06	0.06	0.19	0.24	0.00	0.18	0.24	0.17	0.06	0.16	0.16
Crit Moves:	****				****		****				****	
Green Time:	11.3	15.9	15.9	37.4	42.0	0.0	30.7	46.7	46.7	12.0	28.0	28.0
Volume/Cap:	0.71	0.44	0.44	0.63	0.71	0.00	0.71	0.64	0.45	0.64	0.71	0.71
Uniform Del:	54.8	49.9	49.9	37.3	35.8	0.0	42.6	31.7	29.0	53.9	44.3	44.3
IncremntDel:	14.2	0.4	0.4	2.4	1.9	0.0	3.2	0.7	0.5	4.6	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	69.0	50.3	50.3	39.7	37.7	0.0	45.8	32.4	29.5	58.5	46.3	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.0	50.3	50.3	39.7	37.7	0.0	45.8	32.4	29.5	58.5	46.3	46.3
LOS by Move:	E	D	D	D	D+	A	D	C-	C	E+	D	D
HCM2kAvgQ:	6	4	4	11	14	0	12	12	7	5	11	11

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project AM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

```
                       Signal=Protect/Rights=Ignore
          Final Vol:     0       266        197***
              Lanes:     1    0    2    0    1

                 Signal=Protect                               Signal=Protect
Final Vol: Lanes: Rights=Include     Vol Cnt Date:      n/a   Rights=Include   Lanes:  Final Vol:
                                  Cycle Time (sec):     120
 456***     2                                                                    0       250
                                   Loss Time (sec):      12
            0                                                                    1
 609        3                        Critical V/C:    0.680                      2       691***

            0                 Avg Crit Del (sec/veh):  42.9                      0

 88         1                      Avg Delay (sec/veh): 40.9                     2       64
                                               LOS:      D

              Lanes:     1    0    2    1    0
          Final Vol:   191       917***     130
                       Signal=Protect/Rights=Include
```

```
Street Name:                 Wolfe Road                  Stevens Creek Boulevard
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     7   10    10     7   10    10
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     191  916   130   193  265   505   453  609    88    64  691   243
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  191  916   130   193  265   505   453  609    88    64  691   243
Added Vol:      0    1     0     4    1     2     3    0     0     0    0     7
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  191  917   130   197  266   507   456  609    88    64  691   250
User Adj:    1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   191  917   130   197  266     0   456  609    88    64  691   250
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  191  917   130   197  266     0   456  609    88    64  691   250
PCE Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  191  917   130   197  266     0   456  609    88    64  691   250
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.99  0.95  0.92 1.00  0.92  0.83 1.00  0.92  0.83 1.00  0.95
Lanes:       1.00 2.61  0.39  1.00 2.00  1.00  2.00 3.00  1.00  2.00 2.17  0.83
Final Sat.:  1750 4904   695  1750 3800  1750  3150 5700  1750  3150 4110  1487
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.19  0.19  0.11 0.07  0.00  0.14 0.11  0.05  0.02 0.17  0.17
Crit Moves:       ****        ****             ****                  ****
Green Time:  30.0 33.0  33.0  19.9 22.9   0.0  25.5 35.7  35.7  19.5 29.6  29.6
Volume/Cap:  0.44 0.68  0.68  0.68 0.37  0.00  0.68 0.36  0.17  0.13 0.68  0.68
Uniform Del: 37.9 38.8  38.8  47.1 42.3   0.0  43.5 33.2  31.2  43.0 40.9  40.9
IncremntDel:  0.7  1.3   1.3   6.4  0.3   0.0   2.9  0.1   0.2   0.1  1.4   1.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   38.6 40.1  40.1  53.5 42.6   0.0  46.3 33.3  31.3  43.1 42.3  42.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  38.6 40.1  40.1  53.5 42.6   0.0  46.3 33.3  31.3  43.1 42.3  42.3
LOS by Move:   D+    D     D    D-    D     A     D   C-     C     D    D     D
HCM2kAvgQ:      6   12    12     7    4     0    10    5     2     1   11    11
Note: Queue reported is the number of cars per lane.
```


Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background Plus Project PM

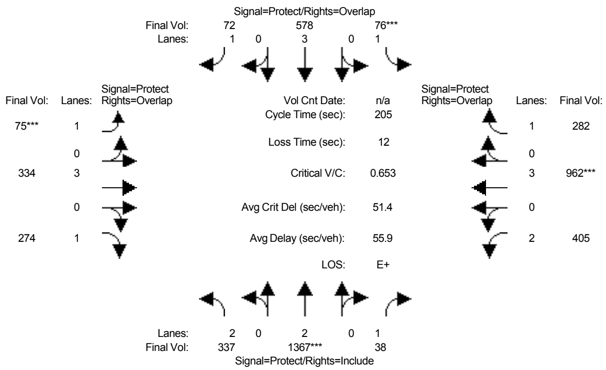
Intersection #13: Wolfe Rd/Stevens Creek Blvd

```
                       Signal=Protect/Rights=Ignore
          Final Vol:     0       920***     337
              Lanes:     1    0    2    0    1

                 Signal=Protect                               Signal=Protect
Final Vol: Lanes: Rights=Include     Vol Cnt Date:      n/a   Rights=Include   Lanes:  Final Vol:
                                  Cycle Time (sec):     124
 559***     2                                                                    0       227
                                   Loss Time (sec):      12
            0                                                                    1
 1378       3                        Critical V/C:    0.716                      2       681***

            0                 Avg Crit Del (sec/veh):  44.1                      0

 298        1                      Avg Delay (sec/veh): 40.7                     2       195
                                               LOS:      D

              Lanes:     1    0    2    1    0
          Final Vol:   114***    262        55
                       Signal=Protect/Rights=Include
```

```
Street Name:                 Wolfe Road                  Stevens Creek Boulevard
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     7   10    10     7   10    10
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     114  261    55   331  919   487   557 1378   298   195  681   222
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  114  261    55   331  919   487   557 1378   298   195  681   222
Added Vol:      0    1     0     6    1     3     2    0     0     0    0     5
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  114  262    55   337  920   490   559 1378   298   195  681   227
User Adj:    1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   114  262    55   337  920     0   559 1378   298   195  681   227
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  114  262    55   337  920     0   559 1378   298   195  681   227
PCE Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  114  262    55   337  920     0   559 1378   298   195  681   227
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.99  0.95  0.92 1.00  0.92  0.83 1.00  0.92  0.83 0.99  0.95
Lanes:       1.00 2.46  0.54  1.00 2.00  1.00  2.00 3.00  1.00  2.00 2.22  0.78
Final Sat.:  1750 4627   971  1750 3800  1750  3150 5700  1750  3150 4198  1399
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.06  0.06  0.19 0.24  0.00  0.18 0.24  0.17  0.06 0.16  0.16
Crit Moves:  ****                  ****        ****                  ****
Green Time:  11.3 15.7  15.7  37.5 41.9   0.0  30.7 46.8  46.8  12.0 28.1  28.1
Volume/Cap:  0.72 0.45  0.45  0.64 0.72  0.00  0.72 0.64  0.45  0.64 0.72  0.72
Uniform Del: 54.8 50.1  50.1  37.4 35.8   0.0  42.7 31.7  28.9  53.9 44.3  44.3
IncremntDel: 14.4  0.5   0.5   2.6  2.0   0.0   3.2  0.7   0.5   4.5  2.0   2.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   69.2 50.6  50.6  40.0 37.8   0.0  45.8 32.3  29.4  58.5 46.3  46.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  69.2 50.6  50.6  40.0 37.8   0.0  45.8 32.3  29.4  58.5 46.3  46.3
LOS by Move:    E    D     D     D   D+     A     D   C-     C    E+    D     D
HCM2kAvgQ:      6    4     4    11   14     0    12   12     7     5   11    11
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

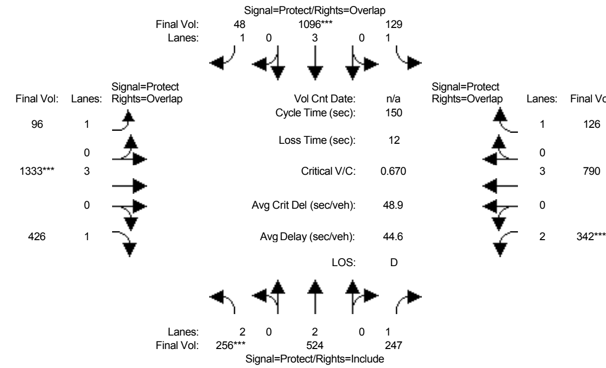


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	335	1365	38	76	575	72	75	334	271	397	962	282
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	1365	38	76	575	72	75	334	271	397	962	282
Added Vol:	2	2	0	0	3	0	0	0	3	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	337	1367	38	76	578	72	75	334	274	405	962	282
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	337	1367	38	76	578	72	75	334	274	405	962	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	337	1367	38	76	578	72	75	334	274	405	962	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	337	1367	38	76	578	72	75	334	274	405	962	282
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.36	0.02	0.04	0.10	0.04	0.04	0.06	0.16	0.13	0.17	0.16
Crit Moves:		****		****			****				****	
Green Time:	65.0	113	112.9	13.6	61.6	75.0	13.5	20.8	85.8	45.6	53.0	66.6
Volume/Cap:	0.34	0.65	0.04	0.65	0.34	0.11	0.65	0.58	0.37	0.58	0.65	0.50
Uniform Del:	53.5	32.3	21.1	93.4	55.8	43.0	93.5	87.9	41.1	71.1	67.8	55.7
IncremntDel:	0.2	0.7	0.0	12.5	0.1	0.1	12.7	1.5	0.3	1.2	1.1	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.8	33.0	21.2	105.9	55.9	43.0	106.2	89.4	41.4	72.3	68.9	56.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.8	33.0	21.2	105.9	55.9	43.0	106.2	89.4	41.4	72.3	68.9	56.4
LOS by Move:	D-	C-	C+	F	E+	D	F	F	D	E	E	E+
HCM2kAvgQ:	9	28	1	6	9	3	6	7	12	14	18	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #1: Wolfe Rd/El Camino Real (SR 82)

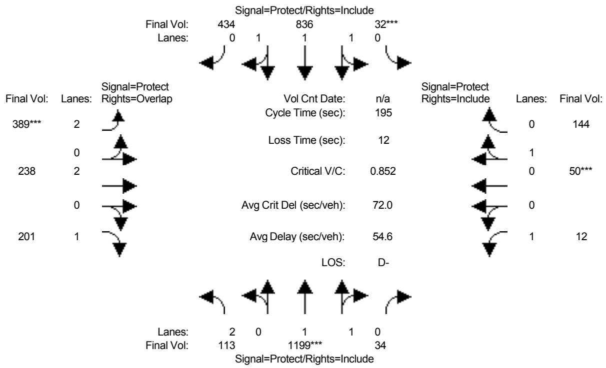


Street Name:	Wolfe Road						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	253	521	247	129	1094	48	96	1333	424	337	790	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	253	521	247	129	1094	48	96	1333	424	337	790	126
Added Vol:	3	3	0	0	2	0	0	0	2	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	256	524	247	129	1096	48	96	1333	426	342	790	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	256	524	247	129	1096	48	96	1333	426	342	790	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	524	247	129	1096	48	96	1333	426	342	790	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	256	524	247	129	1096	48	96	1333	426	342	790	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	1750	5700	1750	1750	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.14	0.07	0.19	0.03	0.05	0.23	0.24	0.11	0.14	0.07
Crit Moves:	****				****			****		****		
Green Time:	18.2	40.3	40.3	21.0	43.1	64.8	21.8	52.4	70.6	24.3	55.0	76.0
Volume/Cap:	0.67	0.51	0.53	0.53	0.67	0.06	0.38	0.67	0.52	0.67	0.38	0.14
Uniform Del:	63.0	46.6	46.7	59.9	47.2	24.9	58.0	41.5	27.8	59.1	35.0	19.7
IncremntDel:	4.5	0.5	1.1	2.1	1.1	0.0	0.9	0.9	0.6	3.4	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.6	47.0	47.8	62.0	48.3	24.9	59.0	42.3	28.4	62.5	35.1	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	47.0	47.8	62.0	48.3	24.9	59.0	42.3	28.4	62.5	35.1	19.8
LOS by Move:	E	D	D	E	D	C	E+	D	C	E	D+	B-
HCM2kAvgQ:	6	9	10	6	15	1	5	18	15	10	9	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #2: Wolfe Rd/Fremont Ave

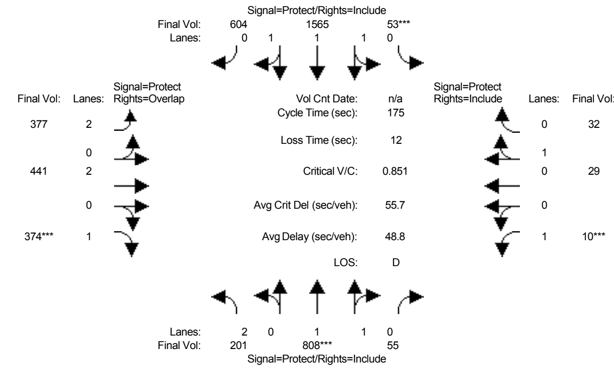


Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	113	1195	28	32	822	434	389	238	201	12	50	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	113	1195	28	32	822	434	389	238	201	12	50	144
Added Vol:	0	4	6	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	113	1199	34	32	836	434	389	238	201	12	50	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	113	1199	34	32	836	434	389	238	201	12	50	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	113	1199	34	32	836	434	389	238	201	12	50	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	113	1199	34	32	836	434	389	238	201	12	50	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.94	0.06	0.08	1.92	1.00	2.00	2.00	1.00	1.00	0.26	0.74
Final Sat.:	3150	3598	102	136	3563	1800	3150	3800	1750	1750	464	1336
Capacity Analysis Module:												
Vol/Sat:	0.04	0.33	0.33	0.23	0.23	0.24	0.12	0.06	0.11	0.01	0.11	0.11
Crit Moves:		****		****			****				****	
Green Time:	16.9	76.3	76.3	53.7	113	113.2	28.3	36.4	53.3	16.5	24.7	24.7
Volume/Cap:	0.42	0.85	0.85	0.85	0.40	0.42	0.85	0.34	0.42	0.08	0.85	0.85
Uniform Del:	84.4	54.2	54.2	66.9	22.4	22.6	81.3	68.8	58.2	82.2	83.4	83.4
IncremntDel:	1.0	5.1	5.1	4.8	0.1	0.1	14.2	0.3	0.6	0.2	25.1	25.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	85.4	59.2	59.2	71.7	22.5	22.7	95.5	69.1	58.8	82.5	108	108.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.4	59.2	59.2	71.7	22.5	22.7	95.5	69.1	58.8	82.5	108	108.5
LOS by Move:	F	E+	E+	E	C+	C+	F	E	E+	F	F	F
HCM2kAvgQ:	4	35	35	26	14	14	16	6	10	1	14	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #2: Wolfe Rd/Fremont Ave

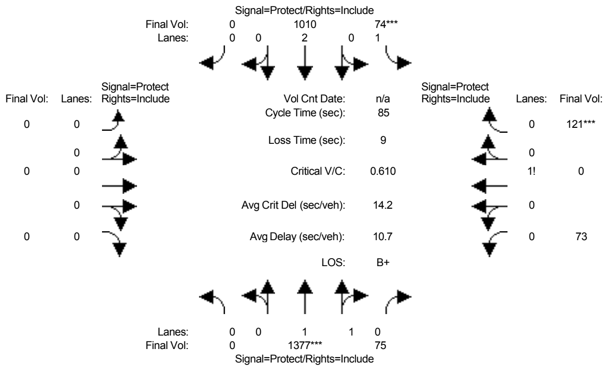


Street Name:	Wolfe Road						Fremont Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	201	803	47	53	1556	604	377	441	374	10	29	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	803	47	53	1556	604	377	441	374	10	29	32
Added Vol:	0	5	8	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	808	55	53	1565	604	377	441	374	10	29	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	808	55	53	1565	604	377	441	374	10	29	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	808	55	53	1565	604	377	441	374	10	29	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	808	55	53	1565	604	377	441	374	10	29	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.95	0.97	0.95	0.83	1.00	0.92	0.92	0.95	0.95
Lanes:	2.00	1.87	0.13	0.07	2.10	0.83	2.00	2.00	1.00	1.00	0.48	0.52
Final Sat.:	3150	3464	236	131	3873	1495	3150	3800	1750	1750	856	944
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.23	0.40	0.40	0.40	0.12	0.12	0.21	0.01	0.03	0.03
Crit Moves:		****		****					****	****		
Green Time:	17.2	46.2	46.2	80.1	109	109.1	24.8	29.7	46.9	7.0	11.9	11.9
Volume/Cap:	0.65	0.88	0.88	0.88	0.65	0.65	0.84	0.68	0.80	0.14	0.50	0.50
Uniform Del:	76.0	61.8	61.8	43.2	20.8	20.8	73.2	68.2	59.6	81.1	78.7	78.7
IncremntDel:	4.8	9.6	9.6	4.1	0.4	0.4	13.6	3.0	9.2	0.9	3.2	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	80.7	71.4	71.4	47.3	21.3	21.3	86.8	71.3	68.8	82.0	81.9	81.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.7	71.4	71.4	47.3	21.3	21.3	86.8	71.3	68.8	82.0	81.9	81.9
LOS by Move:	F	E	E	D	C+	C+	F	E	E	F	F	F
HCM2kAvgQ:	6	23	23	38	25	25	14	12	22	1	4	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #3: Wolfe Rd/Marion Wy

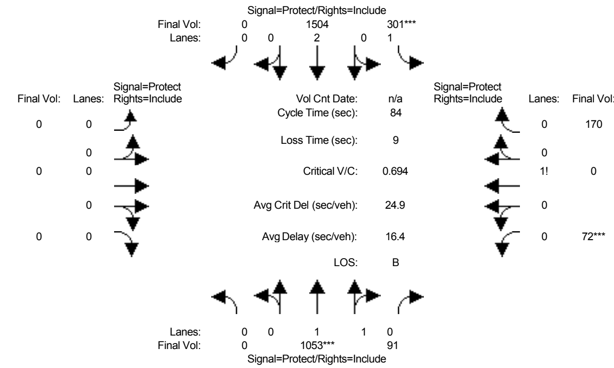


Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1367	75	74	996	0	0	0	0	73	0	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1367	75	74	996	0	0	0	0	73	0	121
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1377	75	74	1010	0	0	0	0	73	0	121
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1377	75	74	1010	0	0	0	0	73	0	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1377	75	74	1010	0	0	0	0	73	0	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1377	75	74	1010	0	0	0	0	73	0	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	0.38	0.00	0.62
Final Sat.:	0	3509	191	1750	3800	0	0	0	0	659	0	1091
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.04	0.27	0.00	0.00	0.00	0.00	0.11	0.00	0.11
Crit Moves:		****		****								****
Green Time:	0.0	53.8	53.8	7.0	60.8	0.0	0.0	0.0	0.0	15.2	0.0	15.2
Volume/Cap:	0.00	0.62	0.62	0.51	0.37	0.00	0.00	0.00	0.00	0.62	0.00	0.62
Uniform Del:	0.0	9.4	9.4	37.4	4.7	0.0	0.0	0.0	0.0	32.2	0.0	32.2
IncremntDel:	0.0	0.5	0.5	3.1	0.1	0.0	0.0	0.0	0.0	3.8	0.0	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	9.9	9.9	40.5	4.8	0.0	0.0	0.0	0.0	36.0	0.0	36.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.9	9.9	40.5	4.8	0.0	0.0	0.0	0.0	36.0	0.0	36.0
LOS by Move:	A	A	A	D	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	12	12	2	5	0	0	0	0	6	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #3: Wolfe Rd/Marion Wy

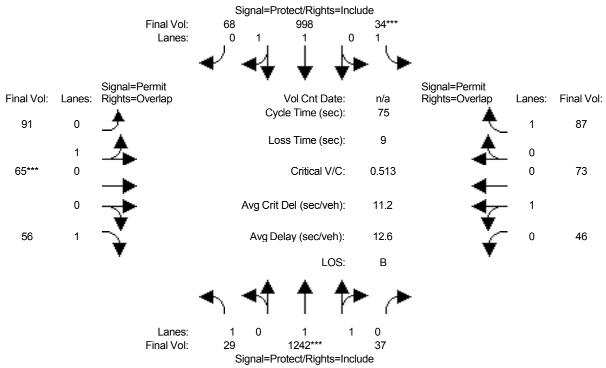


Street Name:	Wolfe Road						Marion Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1040	91	301	1495	0	0	0	0	72	0	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1040	91	301	1495	0	0	0	0	72	0	170
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1053	91	301	1504	0	0	0	0	72	0	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1053	91	301	1504	0	0	0	0	72	0	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1053	91	301	1504	0	0	0	0	72	0	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1053	91	301	1504	0	0	0	0	72	0	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	0.00	1.84	0.16	1.00	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.70
Final Sat.:	0	3405	294	1750	3800	0	0	0	0	521	0	1229
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.17	0.40	0.00	0.00	0.00	0.00	0.14	0.00	0.14
Crit Moves:		****		****						****		
Green Time:	0.0	37.4	37.4	20.8	58.3	0.0	0.0	0.0	0.0	16.7	0.0	16.7
Volume/Cap:	0.00	0.69	0.69	0.69	0.57	0.00	0.00	0.00	0.00	0.69	0.00	0.69
Uniform Del:	0.0	18.7	18.7	28.7	6.5	0.0	0.0	0.0	0.0	31.2	0.0	31.2
IncremntDel:	0.0	1.3	1.3	4.8	0.3	0.0	0.0	0.0	0.0	5.9	0.0	5.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	20.0	20.0	33.5	6.8	0.0	0.0	0.0	0.0	37.2	0.0	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.0	20.0	33.5	6.8	0.0	0.0	0.0	0.0	37.2	0.0	37.2
LOS by Move:	A	B-	B-	C-	A	A	A	A	A	D+	A	D+
HCM2kAvgQ:	0	12	12	8	10	0	0	0	0	8	0	8

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #4: Wolfe Rd/Inverness Wy

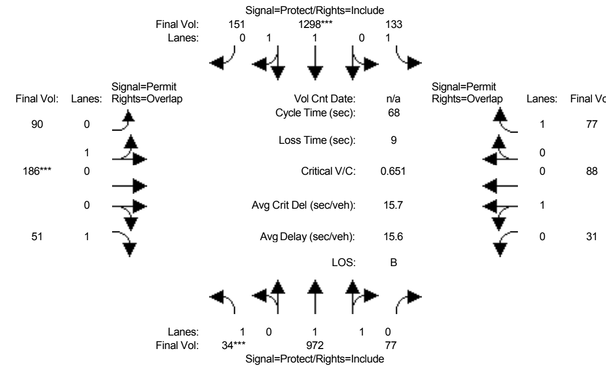


Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	29	1232	37	34	984	68	91	65	56	46	73	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	1232	37	34	984	68	91	65	56	46	73	87
Added Vol:	0	10	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	1242	37	34	998	68	91	65	56	46	73	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	29	1242	37	34	998	68	91	65	56	46	73	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	1242	37	34	998	68	91	65	56	46	73	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	29	1242	37	34	998	68	91	65	56	46	73	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.94	0.06	1.00	1.87	0.13	0.58	0.42	1.00	0.39	0.61	1.00
Final Sat.:	1750	3593	107	1750	3464	236	1050	750	1750	696	1104	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.35	0.35	0.02	0.29	0.29	0.09	0.09	0.03	0.07	0.07	0.05
Crit Moves:		****		****				****				
Green Time:	13.3	47.2	47.2	7.0	40.9	40.9	11.8	11.8	25.1	11.8	11.8	18.8
Volume/Cap:	0.09	0.55	0.55	0.21	0.53	0.53	0.55	0.55	0.10	0.42	0.42	0.20
Uniform Del:	25.8	7.9	7.9	31.4	10.9	10.9	29.1	29.1	17.2	28.5	28.5	22.1
IncremntDel:	0.1	0.3	0.3	0.6	0.3	0.3	2.3	2.3	0.1	1.0	1.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.0	8.2	8.2	32.1	11.1	11.1	31.4	31.4	17.2	29.5	29.5	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.0	8.2	8.2	32.1	11.1	11.1	31.4	31.4	17.2	29.5	29.5	22.4
LOS by Move:	C	A	A	C-	B+	B+	C	C	B	C	C	C+
HCM2kAvgQ:	1	8	8	1	8	8	4	4	1	3	3	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #4: Wolfe Rd/Inverness Wy



Street Name:	Wolfe Road						Inverness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	959	77	133	1289	151	90	186	51	31	88	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	959	77	133	1289	151	90	186	51	31	88	77
Added Vol:	0	13	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	972	77	133	1298	151	90	186	51	31	88	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	972	77	133	1298	151	90	186	51	31	88	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	972	77	133	1298	151	90	186	51	31	88	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	972	77	133	1298	151	90	186	51	31	88	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.85	0.15	1.00	1.79	0.21	0.33	0.67	1.00	0.26	0.74	1.00
Final Sat.:	1750	3428	272	1750	3314	386	587	1213	1750	469	1331	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.28	0.28	0.08	0.39	0.39	0.15	0.15	0.03	0.07	0.07	0.04
Crit Moves:	****				****			****				
Green Time:	7.0	32.6	32.6	11.8	37.4	37.4	14.6	14.6	21.6	14.6	14.6	26.4
Volume/Cap:	0.19	0.59	0.59	0.44	0.71	0.71	0.71	0.71	0.09	0.31	0.31	0.11
Uniform Del:	27.9	12.9	12.9	25.1	11.3	11.3	24.7	24.7	16.3	22.4	22.4	13.3
IncremntDel:	0.5	0.5	0.5	1.0	1.2	1.2	6.1	6.1	0.1	0.5	0.5	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.4	13.4	13.4	26.1	12.6	12.6	30.9	30.9	16.4	22.9	22.9	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	13.4	13.4	26.1	12.6	12.6	30.9	30.9	16.4	22.9	22.9	13.4
LOS by Move:	C	B	B	C	B	B	C	C	B	C+	C+	B
HCM2kAvgQ:	1	8	8	3	12	12	7	7	1	2	2	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #5: De Anza Blvd/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 69 1135 197***
Lanes: 1 0 3 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Ignore			Signal=Protect Rights=Include	Lanes:	Final Vol:
282***	2		Vol Cnt Date:	n/a			
			Cycle Time (sec):	140		0	333
	0		Loss Time (sec):	12		1	
390	2		Critical V/C:	0.797		1	603***
	0		Avg Crit Del (sec/veh):	36.9		0	
0	1		Avg Delay (sec/veh):	37.1		2	454
			LOS:	D+			

Lanes: 2 0 3 0 1
Final Vol: 348 1845*** 207
Signal=Protect/Rights=Include

Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	348	1845	207	197	1135	69	282	387	319	454	601	333
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	348	1845	207	197	1135	69	282	387	319	454	601	333
Added Vol:	0	0	0	0	0	0	0	3	0	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	348	1845	207	197	1135	69	282	390	319	454	603	333
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	348	1845	207	197	1135	69	282	390	0	454	603	333
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	348	1845	207	197	1135	69	282	390	0	454	603	333
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	348	1845	207	197	1135	69	282	390	0	454	603	333
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.27	0.73
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2383	1316
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.12	0.06	0.20	0.04	0.09	0.10	0.00	0.14	0.25	0.25
Crit Moves:		****		****			****				****	
Green Time:	24.2	56.8	56.8	11.0	43.6	59.3	15.7	25.0	0.0	35.1	44.4	44.4
Volume/Cap:	0.64	0.80	0.29	0.80	0.64	0.09	0.80	0.57	0.00	0.57	0.80	0.80
Uniform Del:	53.8	36.5	28.0	63.4	41.4	24.2	60.6	52.6	0.0	45.9	43.7	43.7
IncremntDel:	2.5	2.0	0.2	16.4	0.8	0.1	12.0	1.2	0.0	1.0	3.9	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.86	0.54	0.54	0.94	0.70	0.51	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	48.9	21.9	15.5	76.2	29.7	12.4	72.5	53.8	0.0	46.9	47.6	47.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	21.9	15.5	76.2	29.7	12.4	72.5	53.8	0.0	46.9	47.6	47.6
LOS by Move:	D	C+	B	E-	C	B	E	D-	A	D	D	D
HCM2kAvgQ:	9	20	4	7	12	1	9	8	0	9	17	17

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #5: De Anza Blvd/Homestead Rd

Signal=Protect/Rights=Overlap
Final Vol: 149 1545 400***
Lanes: 1 0 3 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Ignore			Signal=Protect Rights=Include	Lanes:	Final Vol:
173	2		Vol Cnt Date:	n/a			
			Cycle Time (sec):	140		0	198
	0		Loss Time (sec):	12		1	
725***	2		Critical V/C:	0.896		1	521
	0		Avg Crit Del (sec/veh):	58.7		0	
0	1		Avg Delay (sec/veh):	39.0		2	339***
			LOS:	D+			

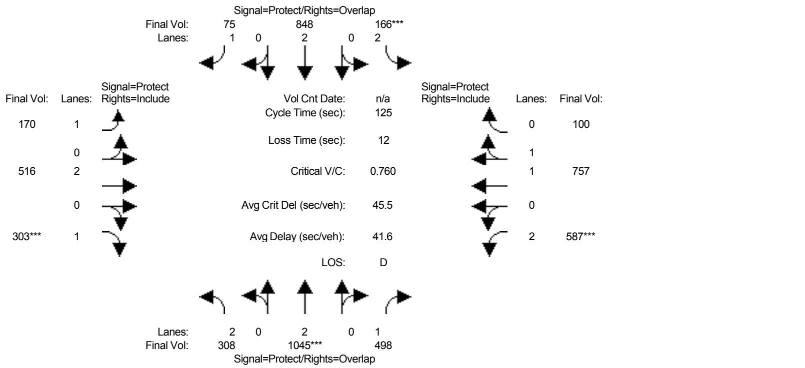
Lanes: 2 0 3 0 1
Final Vol: 489 1419 689***
Signal=Protect/Rights=Include

Street Name:	De Anza Boulevard						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	489	1419	689	400	1545	149	173	723	356	339	518	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	489	1419	689	400	1545	149	173	723	356	339	518	198
Added Vol:	0	0	0	0	0	0	0	2	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	489	1419	689	400	1545	149	173	725	356	339	521	198
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	489	1419	689	400	1545	149	173	725	0	339	521	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	489	1419	689	400	1545	149	173	725	0	339	521	198
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	489	1419	689	400	1545	149	173	725	0	339	521	198
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.43	0.57
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	2680	1019
Capacity Analysis Module:												
Vol/Sat:	0.16	0.25	0.39	0.13	0.27	0.09	0.05	0.19	0.00	0.11	0.19	0.19
Crit Moves:			****	****				****		****		
Green Time:	29.6	61.5	61.5	19.8	51.7	62.0	10.3	29.8	0.0	16.8	36.4	36.4
Volume/Cap:	0.73	0.57	0.90	0.90	0.73	0.19	0.75	0.90	0.00	0.90	0.75	0.75
Uniform Del:	51.5	29.3	36.3	59.1	38.2	23.7	63.6	53.6	0.0	60.7	47.6	47.6
IncremntDel:	4.2	0.3	13.1	20.2	1.4	0.1	12.7	12.6	0.0	22.9	3.3	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.82	0.48	0.48	0.89	0.61	0.47	1.00	1.00	0.00	1.00	1.00	1.00
Delay/Veh:	46.5	14.3	30.4	72.8	24.6	11.3	76.3	66.2	0.0	83.6	50.9	50.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.5	14.3	30.4	72.8	24.6	11.3	76.3	66.2	0.0	83.6	50.9	50.9
LOS by Move:	D	B	C	E	C	B+	E-	E	A	F	D	D
HCM2kAvgQ:	12	10	28	13	17	2	6	18	0	9	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #6: Wolfe Rd/Homestead Rd

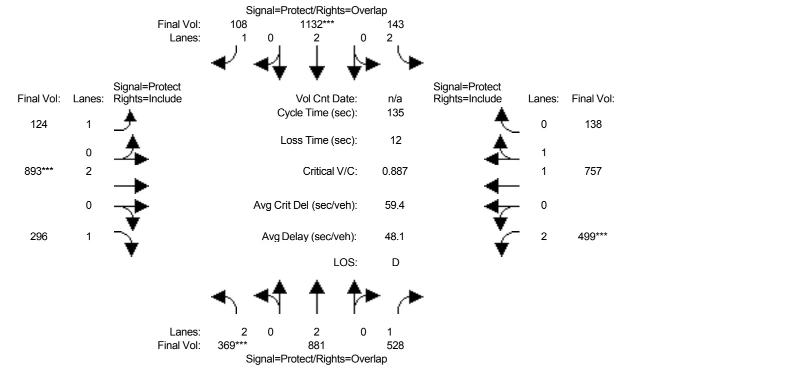


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	306	1035	493	166	834	75	170	516	300	581	757	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	306	1035	493	166	834	75	170	516	300	581	757	100
Added Vol:	2	10	5	0	14	0	0	0	3	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	308	1045	498	166	848	75	170	516	303	587	757	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	308	1045	498	166	848	75	170	516	303	587	757	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	308	1045	498	166	848	75	170	516	303	587	757	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	308	1045	498	166	848	75	170	516	303	587	757	100
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3268	432
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.05	0.22	0.04	0.10	0.14	0.17	0.19	0.23	0.23
Crit Moves:		****		****					****	****		
Green Time:	16.4	45.2	75.9	8.7	37.5	54.9	17.5	28.5	28.5	30.6	41.6	41.6
Volume/Cap:	0.74	0.76	0.47	0.76	0.74	0.10	0.70	0.60	0.76	0.76	0.70	0.70
Uniform Del:	52.3	35.1	13.5	57.1	39.5	20.5	51.2	43.1	45.1	43.8	36.2	36.2
IncremntDel:	7.2	2.5	0.3	14.4	2.7	0.1	8.4	1.1	8.3	4.4	1.8	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	59.5	37.6	13.8	71.5	42.2	20.6	59.7	44.3	53.4	48.2	37.9	37.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.5	37.6	13.8	71.5	42.2	20.6	59.7	44.3	53.4	48.2	37.9	37.9
LOS by Move:	E+	D+	B	E	D	C+	E+	D	D-	D	D+	D+
HCM2kAvgQ:	7	17	11	4	15	2	7	9	12	12	13	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #6: Wolfe Rd/Homestead Rd

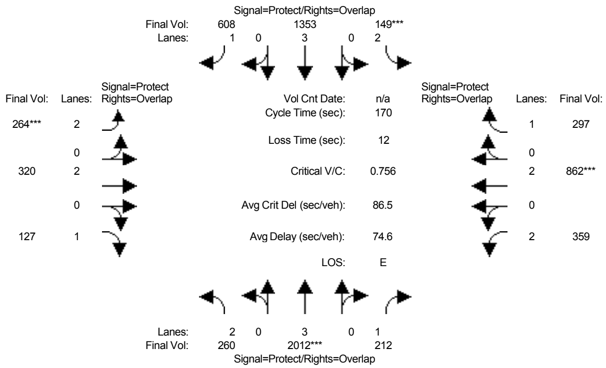


Street Name:	Wolfe Road						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	366	868	521	143	1123	108	124	893	294	495	757	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	366	868	521	143	1123	108	124	893	294	495	757	138
Added Vol:	3	13	7	0	9	0	0	0	2	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	369	881	528	143	1132	108	124	893	296	499	757	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	369	881	528	143	1132	108	124	893	296	499	757	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	369	881	528	143	1132	108	124	893	296	499	757	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	369	881	528	143	1132	108	124	893	296	499	757	138
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.68	0.32
Final Sat.:	3150	3800	1750	3150	3800	1750	1750	3800	1750	3150	3129	570
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.30	0.05	0.30	0.06	0.07	0.24	0.17	0.16	0.24	0.24
Crit Moves:	****				****			****		****		
Green Time:	17.8	51.6	75.7	11.5	45.3	58.9	13.6	35.8	35.8	24.1	46.3	46.3
Volume/Cap:	0.89	0.61	0.54	0.53	0.89	0.14	0.71	0.89	0.64	0.89	0.71	0.71
Uniform Del:	57.6	33.5	18.6	59.1	42.4	22.9	58.8	47.7	43.9	54.1	38.4	38.4
IncremntDel:	20.0	0.7	0.6	2.0	7.9	0.1	12.3	9.7	3.0	15.8	1.8	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	77.6	34.3	19.2	61.2	50.3	23.0	71.1	57.4	46.9	69.9	40.3	40.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.6	34.3	19.2	61.2	50.3	23.0	71.1	57.4	46.9	69.9	40.3	40.3
LOS by Move:	E-	C-	B-	E	D	C+	E	E+	D	E	D	D
HCM2kAvgQ:	10	14	14	3	23	3	5	17	11	13	16	16

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #7: Lawrence Expwy/Homestead Rd

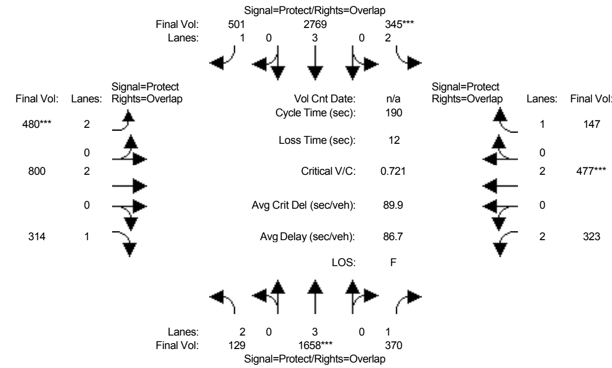


Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	260	2515	212	149	1713	605	262	318	126	359	859	297
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	260	2515	212	149	1713	605	262	318	126	359	859	297
Added Vol:	0	0	0	0	0	3	2	2	1	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	260	2515	212	149	1713	608	264	320	127	359	862	297
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	260	2012	212	149	1353	608	264	320	127	359	862	297
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	2012	212	149	1353	608	264	320	127	359	862	297
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	260	2012	212	149	1353	608	264	320	127	359	862	297
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.35	0.12	0.05	0.24	0.35	0.08	0.08	0.07	0.11	0.23	0.17
Crit Moves:		****		****			****				****	
Green Time:	15.4	72.7	95.6	25.4	82.8	105.6	22.8	38.9	54.3	22.8	38.9	64.3
Volume/Cap:	0.91	0.82	0.22	0.32	0.49	0.56	0.62	0.37	0.23	0.85	0.99	0.45
Uniform Del:	90.6	50.8	21.9	76.4	34.7	22.1	82.2	65.3	50.2	85.0	77.3	46.8
IncremntDel:	31.8	2.4	0.1	0.4	0.1	0.7	2.9	0.3	0.2	14.8	28.3	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	128.4	78.6	40.8	85.7	56.8	46.9	85.1	65.5	50.4	99.8	106	47.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	128.4	78.6	40.8	85.7	56.8	46.9	85.1	65.5	50.4	99.8	106	47.3
LOS by Move:	F	E-	D	F	E+	D	F	E	D	F	F	D
HCM2kAvgQ:	12	40	11	5	24	34	9	8	6	15	31	14

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #7: Lawrence Expwy/Homestead Rd

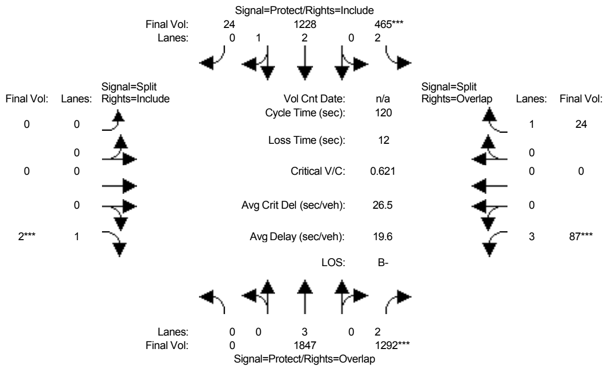


Street Name:	Lawrence Expressway						Homestead Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	18	86	86	30	97	97	27	46	46	27	46	46
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	129	2072	370	345	3505	499	477	797	312	323	475	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	2072	370	345	3505	499	477	797	312	323	475	147
Added Vol:	0	0	0	0	0	2	3	3	2	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	2072	370	345	3505	501	480	800	314	323	477	147
User Adj:	1.00	0.80	1.00	1.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	1658	370	345	2769	501	480	800	314	323	477	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1658	370	345	2769	501	480	800	314	323	477	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	1658	370	345	2769	501	480	800	314	323	477	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.21	0.11	0.49	0.29	0.15	0.21	0.18	0.10	0.13	0.08
Crit Moves:		****		****			****				****	
Green Time:	17.1	81.3	106.8	28.4	92.6	118.1	25.5	43.5	60.6	25.5	43.5	71.8
Volume/Cap:	0.46	0.68	0.38	0.73	1.00	0.46	1.13	0.92	0.56	0.76	0.55	0.22
Uniform Del:	86.8	46.4	24.4	81.7	51.4	20.2	87.0	75.7	56.9	83.9	68.3	42.4
IncremntDel:	1.2	0.8	0.2	5.9	16.3	0.3	85.8	14.7	1.3	8.0	0.7	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.07	1.50	1.86	1.12	1.63	2.10	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	93.7	70.3	45.6	97.1	100	42.6	172.8	90.4	58.2	91.9	69.1	42.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.7	70.3	45.6	97.1	100	42.6	172.8	90.4	58.2	91.9	69.1	42.6
LOS by Move:	F	E	D	F	F	D	F	F	E+	F	E	D
HCM2kAvgQ:	5	31	20	14	62	27	22	24	16	13	13	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #8: Wolfe Rd/Apple Park Wy

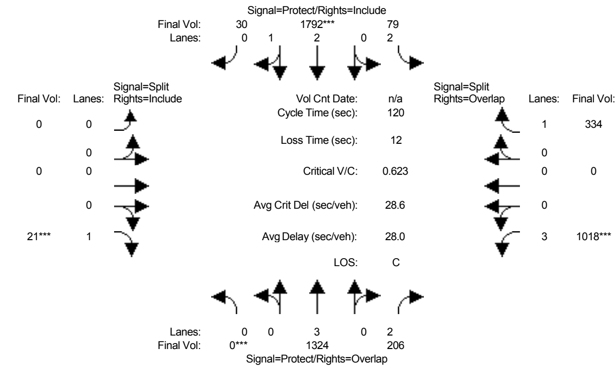


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1830	1292	465	1228	2	0	0	2	87	0	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1830	1292	465	1228	2	0	0	2	87	0	24
Added Vol:	0	17	0	0	0	22	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1847	1292	465	1228	24	0	0	2	87	0	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1847	1292	465	1228	24	0	0	2	87	0	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1847	1292	465	1228	24	0	0	2	87	0	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1847	1292	465	1228	24	0	0	2	87	0	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.94	0.06	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5493	107	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.41	0.15	0.22	0.22	0.00	0.00	0.00	0.02	0.00	0.01
Crit Moves:			****	****					****	****		
Green Time:	0.0	60.6	70.6	27.4	88.0	88.0	0.0	0.0	10.0	10.0	0.0	37.4
Volume/Cap:	0.00	0.64	0.70	0.65	0.30	0.30	0.00	0.00	0.01	0.23	0.00	0.04
Uniform Del:	0.0	21.7	17.2	41.9	5.5	5.5	0.0	0.0	50.5	51.4	0.0	28.8
IncremntDel:	0.0	0.5	1.2	2.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	22.2	18.4	44.0	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.2	18.4	44.0	5.5	5.5	0.0	0.0	50.5	51.7	0.0	28.9
LOS by Move:	A	C+	B-	D	A	A	A	A	D	D-	A	C
HCM2kAvgQ:	0	16	20	9	5	5	0	0	0	1	0	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #8: Wolfe Rd/Apple Park Wy

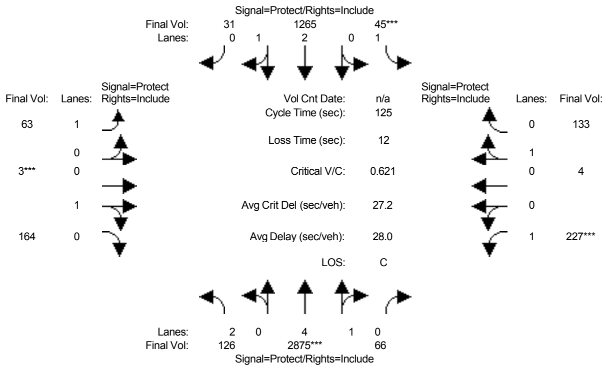


Street Name:	Wolfe Road						Apple Park Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1301	206	79	1792	16	0	0	21	1018	0	334
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1301	206	79	1792	16	0	0	21	1018	0	334
Added Vol:	0	23	0	0	0	14	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1324	206	79	1792	30	0	0	21	1018	0	334
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1324	206	79	1792	30	0	0	21	1018	0	334
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1324	206	79	1792	30	0	0	21	1018	0	334
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1324	206	79	1792	30	0	0	21	1018	0	334
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.83	0.83	0.98	0.95	0.92	1.00	0.92	0.80	1.00	0.92
Lanes:	0.00	3.00	2.00	2.00	2.95	0.05	0.00	0.00	1.00	3.00	0.00	1.00
Final Sat.:	0	5700	3150	3150	5508	92	0	0	1750	4551	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.07	0.03	0.33	0.33	0.00	0.00	0.01	0.22	0.00	0.19
Crit Moves:	****				****				****	****		
Green Time:	0.0	46.4	86.3	11.7	58.1	58.1	0.0	0.0	10.0	39.9	0.0	51.6
Volume/Cap:	0.00	0.60	0.09	0.26	0.67	0.67	0.00	0.00	0.14	0.67	0.00	0.44
Uniform Del:	0.0	29.4	5.1	50.2	23.7	23.7	0.0	0.0	51.0	34.4	0.0	24.1
IncremntDel:	0.0	0.5	0.0	0.4	0.7	0.7	0.0	0.0	0.5	1.2	0.0	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	29.9	5.1	50.6	24.4	24.4	0.0	0.0	51.5	35.6	0.0	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	29.9	5.1	50.6	24.4	24.4	0.0	0.0	51.5	35.6	0.0	24.5
LOS by Move:	A	C	A	D	C	C	A	A	D-	D+	A	C
HCM2kAvgQ:	0	13	1	2	16	16	0	0	1	14	0	9

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #9: Wolfe Rd/Pruneridge Ave

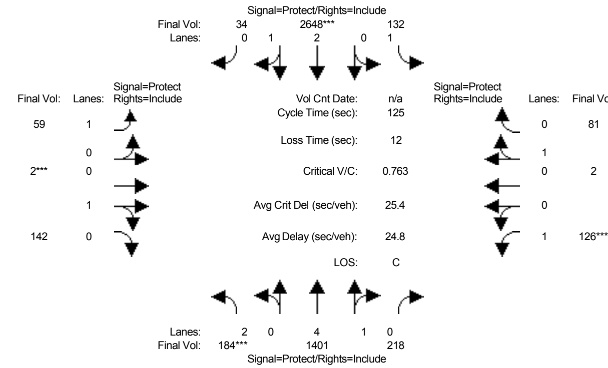


Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	92	2875	66	45	1265	31	46	3	141	227	4	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	2875	66	45	1265	31	46	3	141	227	4	133
Added Vol:	34	0	0	0	0	0	17	0	23	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	126	2875	66	45	1265	31	63	3	164	227	4	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	126	2875	66	45	1265	31	63	3	164	227	4	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	2875	66	45	1265	31	63	3	164	227	4	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	126	2875	66	45	1265	31	63	3	164	227	4	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.88	0.12	1.00	2.93	0.07	1.00	0.02	0.98	1.00	0.03	0.97
Final Sat.:	3150	9189	211	1750	5466	134	1750	32	1768	1750	53	1747
Capacity Analysis Module:												
Vol/Sat:	0.04	0.31	0.31	0.03	0.23	0.23	0.04	0.09	0.09	0.13	0.08	0.08
Crit Moves:		****		****				****		****		
Green Time:	13.4	61.9	61.9	7.0	55.5	55.5	18.1	18.4	18.4	25.7	25.9	25.9
Volume/Cap:	0.37	0.63	0.63	0.46	0.52	0.52	0.25	0.63	0.63	0.63	0.37	0.37
Uniform Del:	51.9	23.1	23.1	57.2	25.1	25.1	47.4	50.1	50.1	45.3	42.5	42.5
IncremntDel:	0.7	0.3	0.3	3.4	0.2	0.2	0.5	4.9	4.9	3.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.6	23.4	23.4	60.5	25.3	25.3	47.9	55.0	55.0	48.9	43.1	43.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	23.4	23.4	60.5	25.3	25.3	47.9	55.0	55.0	48.9	43.1	43.1
LOS by Move:	D-	C	C	E	C	C	D	E+	E+	D	D	D
HCM2kAvgQ:	3	17	17	2	12	12	2	7	7	9	5	5

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #9: Wolfe Rd/Pruneridge Ave



Street Name:	Wolfe Road						Pruneridge Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	162	1401	218	132	2648	34	36	2	112	126	2	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	1401	218	132	2648	34	36	2	112	126	2	81
Added Vol:	22	0	0	0	0	0	23	0	30	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	184	1401	218	132	2648	34	59	2	142	126	2	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	1401	218	132	2648	34	59	2	142	126	2	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	1401	218	132	2648	34	59	2	142	126	2	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	1401	218	132	2648	34	59	2	142	126	2	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.92	0.98	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	2.00	4.30	0.70	1.00	2.96	0.04	1.00	0.01	0.99	1.00	0.02	0.98
Final Sat.:	3150	8132	1265	1750	5529	71	1750	25	1775	1750	43	1757
Capacity Analysis Module:												
Vol/Sat:	0.06	0.17	0.17	0.08	0.48	0.48	0.03	0.08	0.08	0.07	0.05	0.05
Crit Moves:	****				****			****		****		
Green Time:	9.6	61.3	61.3	26.8	78.5	78.5	10.3	13.1	13.1	11.8	14.7	14.7
Volume/Cap:	0.76	0.35	0.35	0.35	0.76	0.76	0.41	0.76	0.76	0.76	0.39	0.39
Uniform Del:	56.6	19.6	19.6	41.7	16.6	16.6	54.5	54.4	54.4	55.2	51.1	51.1
IncremntDel:	13.4	0.0	0.0	0.6	1.0	1.0	1.9	16.6	16.6	18.7	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	70.0	19.7	19.7	42.3	17.6	17.6	56.4	71.1	71.1	73.9	52.3	52.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.0	19.7	19.7	42.3	17.6	17.6	56.4	71.1	71.1	73.9	52.3	52.3
LOS by Move:	E	B-	B-	D	B	B	E+	E	E	E	D-	D-
HCM2kAvgQ:	6	8	8	4	25	25	3	7	7	7	3	3

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #10: Wolfe Rd/I-280 NB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1055 0
Lanes: 1 0 2 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a			
			Cycle Time (sec):	65		2	945***
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.814		0	0
	0		Avg Crit Del (sec/veh):	11.7		0	
0	0		Avg Delay (sec/veh):	10.5		2	515
			LOS:	B+			

Lanes: 0 0 2 1 0
Final Vol: 0 2246*** 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	2226	24	0	1038	99	0	0	0	515	0	931
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2226	24	0	1038	99	0	0	0	515	0	931
Added Vol:	0	20	0	0	17	0	0	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2246	24	0	1055	99	0	0	0	515	0	945
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2246	0	0	1055	0	0	0	0	515	0	945
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2246	0	0	1055	0	0	0	0	515	0	945
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2246	0	0	1055	0	0	0	0	515	0	945
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.16	0.00	0.30
Crit Moves:		****										****
Green Time:	0.0	32.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	24.0	0.0	24.0
Volume/Cap:	0.00	0.81	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.44	0.00	0.81
Uniform Del:	0.0	14.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	15.5	0.0	18.5
IncremntDel:	0.0	2.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.3	0.0	4.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.35	0.00	0.00	0.35	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	6.9	0.0	0.0	4.5	0.0	0.0	0.0	0.0	15.8	0.0	23.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.9	0.0	0.0	4.5	0.0	0.0	0.0	0.0	15.8	0.0	23.0
LOS by Move:	A	A	A	A	A	A	A	A	A	B	A	C
HCM2kAvgQ:	0	11	0	0	4	0	0	0	0	5	0	13

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #10: Wolfe Rd/I-280 NB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1507*** 0
Lanes: 1 0 2 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a			
			Cycle Time (sec):	55		2	547
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.684		0	0
	0		Avg Crit Del (sec/veh):	6.7		0	
0	0		Avg Delay (sec/veh):	7.1		2	553***
			LOS:	A			

Lanes: 0 0 2 1 0
Final Vol: 0 991 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Northbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	0	0	0	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	978	108	0	1485	283	0	0	0	553	0	538
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	978	108	0	1485	283	0	0	0	553	0	538
Added Vol:	0	13	0	0	22	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	991	108	0	1507	283	0	0	0	553	0	547
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	991	0	0	1507	0	0	0	0	553	0	547
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	991	0	0	1507	0	0	0	0	553	0	547
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	991	0	0	1507	0	0	0	0	553	0	547
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83
Lanes:	0.00	3.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	2.00
Final Sat.:	0	5600	0	0	3800	1750	0	0	0	3150	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.18	0.00	0.17
Crit Moves:					****					****		
Green Time:	0.0	31.9	0.0	0.0	31.9	0.0	0.0	0.0	0.0	14.1	0.0	14.1
Volume/Cap:	0.00	0.31	0.00	0.00	0.68	0.00	0.00	0.00	0.00	0.68	0.00	0.68
Uniform Del:	0.0	5.9	0.0	0.0	8.0	0.0	0.0	0.0	0.0	18.4	0.0	18.4
IncremntDel:	0.0	0.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0	2.4	0.0	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.08	0.00	0.00	0.08	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	0.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	20.9	0.0	20.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	20.9	0.0	20.7
LOS by Move:	A	A	A	A	A	A	A	A	A	C+	A	C+
HCM2kAvgQ:	0	1	0	0	3	0	0	0	0	7	0	6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #11: Wolfe Rd/I-280 SB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1080 0
Lanes: 1 0 4 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
1232***	2		Vol Cnt Date:	n/a		0	0
			Cycle Time (sec):	60			
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.915		0	0
	0		Avg Crit Del (sec/veh):	25.4		0	
589	2		Avg Delay (sec/veh):	20.3		0	0
			LOS:	C+			

Lanes: 0 0 2 0 1
Final Vol: 0 1470*** 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1459	10	0	1073	31	1224	0	589	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1459	10	0	1073	31	1224	0	589	0	0	0
Added Vol:	0	11	0	0	7	0	8	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1470	10	0	1080	31	1232	0	589	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1470	0	0	1080	0	1232	0	589	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1470	0	0	1080	0	1232	0	589	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1470	0	0	1080	0	1232	0	589	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.00	0.00	0.14	0.00	0.39	0.00	0.19	0.00	0.00	0.00
Crit Moves:		****					****					
Green Time:	0.0	25.4	0.0	0.0	25.4	0.0	25.6	0.0	25.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.92	0.00	0.00	0.34	0.00	0.92	0.00	0.44	0.00	0.00	0.00
Uniform Del:	0.0	16.3	0.0	0.0	11.7	0.0	16.2	0.0	12.1	0.0	0.0	0.0
IncremntDel:	0.0	8.5	0.0	0.0	0.1	0.0	9.9	0.0	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	24.9	0.0	0.0	11.7	0.0	26.1	0.0	12.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.9	0.0	0.0	11.7	0.0	26.1	0.0	12.3	0.0	0.0	0.0
LOS by Move:	A	C	A	A	B+	A	C	A	B	A	A	A
HCM2kAvgQ:	0	13	0	0	2	0	18	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #11: Wolfe Rd/I-280 SB Ramps

Signal=Permit/Rights=Ignore
Final Vol: 0 1351 0
Lanes: 1 0 4 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
292	2		Vol Cnt Date:	n/a		0	0
			Cycle Time (sec):	55			
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.542		0	0
	0		Avg Crit Del (sec/veh):	9.4		0	
374***	2		Avg Delay (sec/veh):	8.4		0	0
			LOS:	A			

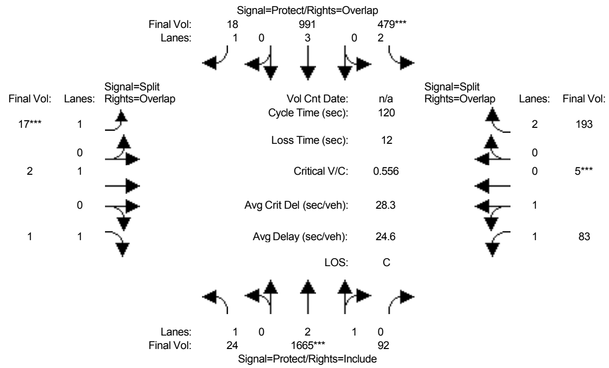
Lanes: 0 0 2 0 1
Final Vol: 0 1271*** 0
Signal=Permit/Rights=Ignore

Street Name:	Wolfe Road						I-280 Southbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	0	0	0
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	0	1264	12	0	1342	203	287	0	374	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1264	12	0	1342	203	287	0	374	0	0	0
Added Vol:	0	7	0	0	9	0	5	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1271	12	0	1351	203	292	0	374	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1271	0	0	1351	0	292	0	374	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1271	0	0	1351	0	292	0	374	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1271	0	0	1351	0	292	0	374	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	0.00	4.00	1.00	2.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	0	7600	1750	3150	0	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.18	0.00	0.09	0.00	0.12	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	0.0	33.9	0.0	0.0	33.9	0.0	12.1	0.0	12.1	0.0	0.0	0.0
Volume/Cap:	0.00	0.54	0.00	0.00	0.29	0.00	0.42	0.00	0.54	0.00	0.00	0.00
Uniform Del:	0.0	6.1	0.0	0.0	4.9	0.0	18.5	0.0	19.0	0.0	0.0	0.0
IncremntDel:	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	6.3	0.0	0.0	4.9	0.0	18.9	0.0	19.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.3	0.0	0.0	4.9	0.0	18.9	0.0	19.9	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B-	A	B-	A	A	A
HCM2kAvgQ:	0	1	0	0	0	0	3	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #12: Wolfe Rd/Vallco Pkwy

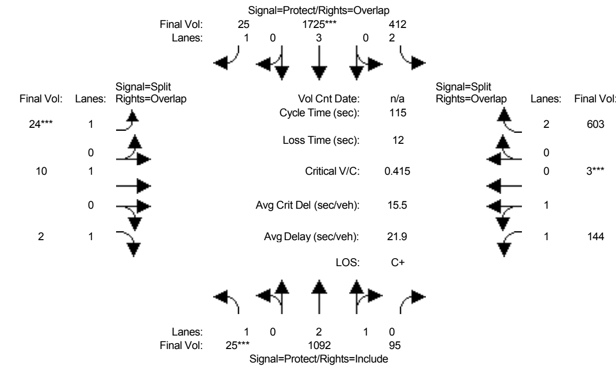


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	24	1654	92	479	984	18	17	2	1	83	5	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	1654	92	479	984	18	17	2	1	83	5	193
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	1665	92	479	991	18	17	2	1	83	5	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	1665	92	479	991	18	17	2	1	83	5	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	1665	92	479	991	18	17	2	1	83	5	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	1665	92	479	991	18	17	2	1	83	5	193
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.84	0.16	2.00	3.00	1.00	1.00	1.00	1.00	1.89	0.11	2.00
Final Sat.:	1750	5306	293	3150	5700	1750	1750	1900	1750	3348	202	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.31	0.31	0.15	0.17	0.01	0.01	0.00	0.00	0.02	0.02	0.06
Crit Moves:		****		****			****				****	
Green Time:	22.1	59.3	59.3	28.7	65.9	75.9	10.0	10.0	32.1	10.0	10.0	38.7
Volume/Cap:	0.07	0.64	0.64	0.64	0.32	0.02	0.12	0.01	0.00	0.30	0.30	0.19
Uniform Del:	40.5	22.4	22.4	40.9	14.8	8.2	50.9	50.5	32.2	51.7	51.7	29.3
IncremntDel:	0.1	0.5	0.5	1.8	0.1	0.0	0.4	0.0	0.0	0.6	0.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.6	22.9	22.9	42.7	14.8	8.2	51.3	50.5	32.2	52.3	52.3	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	22.9	22.9	42.7	14.8	8.2	51.3	50.5	32.2	52.3	52.3	29.4
LOS by Move:	D	C+	C+	D	B	A	D-	D	C-	D-	D-	C
HCM2kAvgQ:	1	16	16	9	6	0	1	0	0	2	2	3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #12: Wolfe Rd/Vallco Pkwy

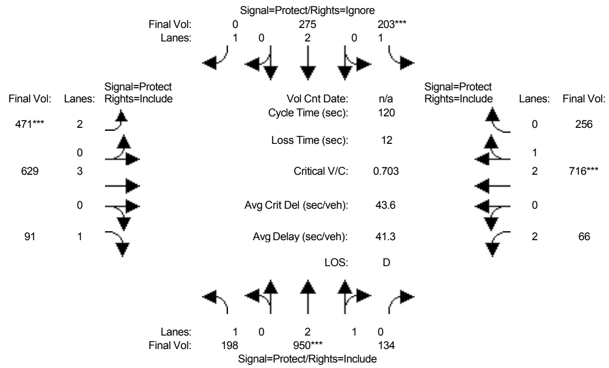


Street Name:	Wolfe Road						Vallco Parkway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	25	1085	95	412	1716	25	24	10	2	144	3	603
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	1085	95	412	1716	25	24	10	2	144	3	603
Added Vol:	0	7	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	1092	95	412	1725	25	24	10	2	144	3	603
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	1092	95	412	1725	25	24	10	2	144	3	603
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	1092	95	412	1725	25	24	10	2	144	3	603
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	1092	95	412	1725	25	24	10	2	144	3	603
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.83	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.83
Lanes:	1.00	2.75	0.25	2.00	3.00	1.00	1.00	1.00	1.00	1.96	0.04	2.00
Final Sat.:	1750	5151	448	3150	5700	1750	1750	1900	1750	3478	72	3150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.21	0.21	0.13	0.30	0.01	0.01	0.01	0.00	0.04	0.04	0.19
Crit Moves:	****				****		****				****	
Green Time:	7.0	48.6	48.6	30.0	71.6	81.6	10.0	10.0	17.0	14.4	14.4	44.4
Volume/Cap:	0.23	0.50	0.50	0.50	0.49	0.02	0.16	0.06	0.01	0.33	0.33	0.50
Uniform Del:	51.4	24.3	24.3	36.1	11.7	4.9	48.6	48.2	41.8	45.9	45.9	26.8
IncremntDel:	1.1	0.2	0.2	0.5	0.1	0.0	0.5	0.2	0.0	0.4	0.4	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.6	24.5	24.5	36.6	11.8	4.9	49.1	48.3	41.8	46.4	46.4	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	24.5	24.5	36.6	11.8	4.9	49.1	48.3	41.8	46.4	46.4	27.2
LOS by Move:	D-	C	C	D+	B+	A	D	D	D	D	D	C
HCM2kAvgQ:	1	10	10	7	11	0	1	0	0	3	3	10

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth AM

Intersection #13: Wolfe Rd/Stevens Creek Blvd

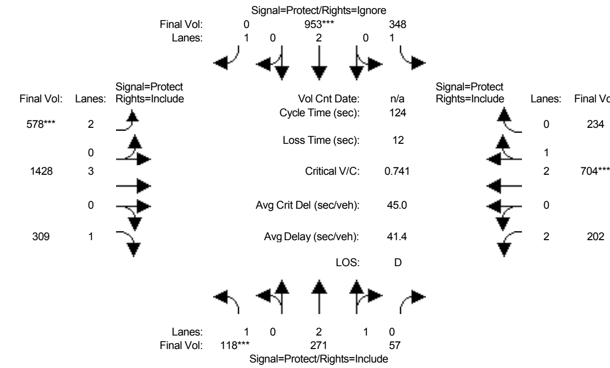


Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	198	949	134	199	274	522	468	629	91	66	716	249
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	949	134	199	274	522	468	629	91	66	716	249
Added Vol:	0	1	0	4	1	2	3	0	0	0	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	950	134	203	275	524	471	629	91	66	716	256
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	950	134	203	275	0	471	629	91	66	716	256
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	950	134	203	275	0	471	629	91	66	716	256
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	198	950	134	203	275	0	471	629	91	66	716	256
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.95
Lanes:	1.00	2.62	0.38	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.18	0.82
Final Sat.:	1750	4907	692	1750	3800	1750	3150	5700	1750	3150	4123	1474
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.19	0.12	0.07	0.00	0.15	0.11	0.05	0.02	0.17	0.17
Crit Moves:		****		****			****				****	
Green Time:	30.4	33.0	33.0	19.8	22.4	0.0	25.5	36.1	36.1	19.1	29.6	29.6
Volume/Cap:	0.45	0.70	0.70	0.70	0.39	0.00	0.70	0.37	0.17	0.13	0.70	0.70
Uniform Del:	37.7	39.1	39.1	47.3	42.8	0.0	43.7	33.0	31.0	43.3	41.2	41.2
IncremntDel:	0.7	1.5	1.5	7.6	0.4	0.0	3.4	0.1	0.2	0.1	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	40.6	40.6	54.9	43.1	0.0	47.1	33.1	31.1	43.5	42.8	42.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	40.6	40.6	54.9	43.1	0.0	47.1	33.1	31.1	43.5	42.8	42.8
LOS by Move:	D+	D	D	D-	D	A	D	C-	C	D	D	D
HCM2kAvgQ:	6	13	13	8	4	0	10	5	2	1	11	11

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Future Growth PM

Intersection #13: Wolfe Rd/Stevens Creek Blvd



Street Name:	Wolfe Road						Stevens Creek Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	118	270	57	342	952	503	576	1428	309	202	704	229
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	270	57	342	952	503	576	1428	309	202	704	229
Added Vol:	0	1	0	6	1	3	2	0	0	0	0	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	271	57	348	953	506	578	1428	309	202	704	234
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	271	57	348	953	0	578	1428	309	202	704	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	271	57	348	953	0	578	1428	309	202	704	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	271	57	348	953	0	578	1428	309	202	704	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	0.99	0.95
Lanes:	1.00	2.46	0.54	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.22	0.78
Final Sat.:	1750	4626	973	1750	3800	1750	3150	5700	1750	3150	4201	1396
Capacity Analysis Module:												
Vol/Sat:	0.07	0.06	0.06	0.20	0.25	0.00	0.18	0.25	0.18	0.06	0.17	0.17
Crit Moves:	****				****		****				****	
Green Time:	11.3	15.4	15.4	37.9	42.0	0.0	30.7	46.8	46.8	12.0	28.0	28.0
Volume/Cap:	0.74	0.47	0.47	0.65	0.74	0.00	0.74	0.66	0.47	0.66	0.74	0.74
Uniform Del:	54.9	50.5	50.5	37.3	36.2	0.0	43.0	32.1	29.2	54.1	44.6	44.6
IncremntDel:	16.9	0.5	0.5	2.8	2.3	0.0	3.8	0.8	0.5	5.5	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.8	51.1	51.1	40.2	38.6	0.0	46.8	32.9	29.7	59.5	47.0	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.8	51.1	51.1	40.2	38.6	0.0	46.8	32.9	29.7	59.5	47.0	47.0
LOS by Move:	E	D-	D-	D	D+	A	D	C-	C	E+	D	D
HCM2kAvgQ:	6	4	4	11	15	0	13	12	7	6	12	12

Note: Queue reported is the number of cars per lane.

Appendix D
Cupertino Village Shopping Center Shared Parking Analysis

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Memorandum

Date: July 9, 2018

To: Mr. Erick Serrano, City of Cupertino

From: Brian Jackson
Lance Knox, AICP

Subject: Shared Parking Analysis for the Cupertino Village Shopping Center and the Proposed Cupertino Village Hotel Project

Hexagon Transportation Consultants, Inc. has completed a shared parking analysis of the existing Cupertino Village Shopping Center and proposed Cupertino Village hotel in Cupertino, California. The shopping center consists of a mix of retail uses, including a grocery store, specialty markets and restaurants. The shopping center has a total of 770 parking stalls (536 surface parking stalls and 234 parking stalls within a parking structure) for employees and patrons.

The project, as proposed, would construct a new hotel at the southern boundary of the shopping center with access via Wolfe Road and Pruneridge Avenue. The project would replace the existing 3,385 square-foot (s.f.) Duke of Edinburgh restaurant and pub and 10,044 s.f. of adjacent vacant commercial space with a 185-room upscale boutique hotel, including a 2,502 s.f. restaurant and 5,568 s.f. of meeting space. The project would eliminate approximately 66 surface parking stalls from the site and construct a two-level below-grade parking garage containing 248 parking stalls.

The purpose of this parking analysis is to determine the maximum number of parking spaces that would be required to serve the peak parking demand of the existing shopping center plus the new hotel based on shared parking calculations.

Shopping Center Parking Demand

Parking counts of the existing Cupertino Village Shopping Center were conducted on Tuesday May 1st, Thursday May 3rd, and Saturday May 12th, 2018, between the hours of 8:00 AM and 10:00 PM. The number of occupied spaces was counted every 30-minutes within the shopping center surface lots and parking garage (see Figure 1). Table 1 shows the total number of occupied parking spaces throughout the day on a typical weekday (average of two weekdays) and on a typical Saturday. The total number of spaces includes unrestricted parking, as well as any short-term and restricted parking.

The chart shown on Figure 2 illustrates that the parking demand on a typical weekday at the shopping center peaks during two different time periods: once during lunch time between about 12:30 PM and 1:30 PM, and again in the evening between 7:00 PM and 8:00 PM. This figure also shows that parking demand during a typical weekday increases gradually from a low at 8:00 AM to a peak occupancy of 464 spaces at 1:00 PM. After 1:00 PM, the demand for parking in the shopping center decreases steadily until about 4:30 PM. After 4:30 PM, the demand for parking begins to increase again, reaching a peak of 376 occupied spaces at 7:30 PM. After 7:30 PM, the parking demand begins to slowly decline. During the hour with the highest parking demand, 60 percent of the total available parking spaces in the shopping center were occupied, leaving 306 parking spaces still available on a typical weekday.

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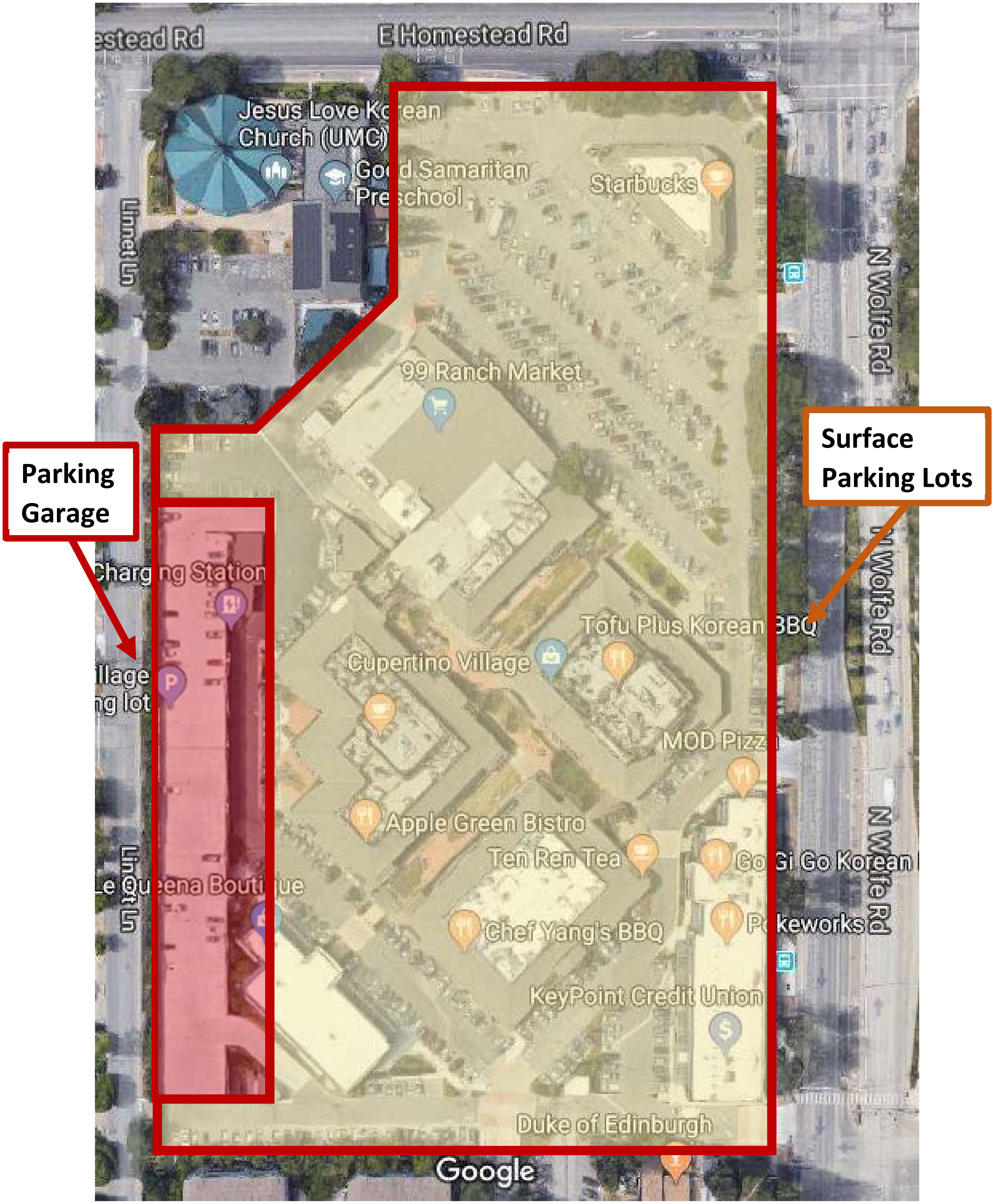


Figure 1
Cupertino Village Shopping Center Parking Study Boundaries

HEXAGON

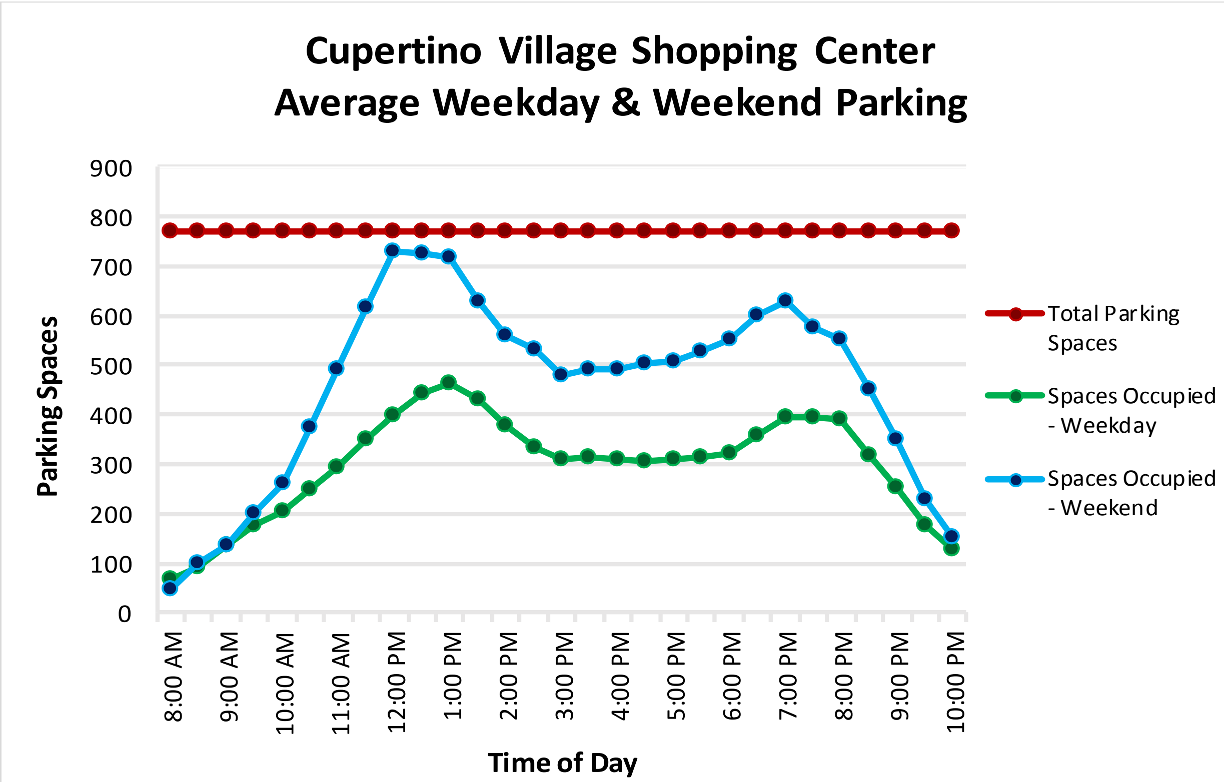
Table 1
Existing Parking Demand at the Cupertino Village Shopping Center

Hour of Day	Average Weekday Parking Counts [1]				Saturday Parking Counts [1]			
	Total Parking Spaces	Spaces Occupied	% Occupied	Spaces Available	Total Parking Spaces	Spaces Occupied	% Occupied	Spaces Available
8:00 AM	770	67	9%	703	770	48	6%	722
8:30 AM	770	94	12%	676	770	100	13%	670
9:00 AM	770	137	18%	633	770	138	18%	632
9:30 AM	770	176	23%	594	770	200	26%	570
10:00 AM	770	206	27%	564	770	263	34%	507
10:30 AM	770	251	33%	519	770	375	49%	395
11:00 AM	770	295	38%	475	770	492	64%	278
11:30 AM	770	351	46%	419	770	619	80%	151
12:00 PM	770	400	52%	370	**770**	**730**	**95%**	**40**
12:30 PM	770	444	58%	326	770	726	94%	44
1:00 PM	**770**	**464**	**60%**	**306**	770	719	93%	51
1:30 PM	770	430	56%	340	770	629	82%	141
2:00 PM	770	379	49%	391	770	562	73%	208
2:30 PM	770	336	44%	434	770	534	69%	236
3:00 PM	770	310	40%	460	770	478	62%	292
3:30 PM	770	315	41%	455	770	492	64%	278
4:00 PM	770	309	40%	461	770	491	64%	279
4:30 PM	770	308	40%	462	770	502	65%	268
5:00 PM	770	309	40%	461	770	509	66%	261
5:30 PM	770	314	41%	456	770	528	69%	242
6:00 PM	770	322	42%	448	770	552	72%	218
6:30 PM	770	358	46%	412	770	602	78%	168
7:00 PM	770	394	51%	376	770	631	82%	139
7:30 PM	770	394	51%	376	770	577	75%	193
8:00 PM	770	392	51%	378	770	552	72%	218
8:30 PM	770	320	42%	450	770	451	59%	319
9:00 PM	770	254	33%	516	770	349	45%	421
9:30 PM	770	177	23%	593	770	231	30%	539
10:00 PM	770	128	17%	642	770	152	20%	618

Notes:
[1] Average weekday parking total is based on parking counts conducted on May 1st and 3rd, 2018. The Saturday parking total is based on parking counts conducted on May 12th, 2018.

Also shown in Table 1 (above) and illustrated on Figure 2 (below), the peak demand for parking on a typical Saturday is significantly higher (35 percent higher) compared to the parking demand on a typical weekday at the shopping center. The demand for parking on a Saturday generally follows the same pattern as the demand for parking on a typical weekday, with two peaks: one around lunch time (between 12:00 PM and 1:00 PM) and the other in the late evening (between 6:30 PM and 7:30 PM). Parking demand at its peak was counted to be 730 occupied spaces (95 percent occupancy) at noon on Saturday, leaving a total of only 40 parking spaces unoccupied.

Figure 2
Cupertino Village Shopping Center Parking Count Data



Hotel Parking Requirement

The City of Cupertino Zoning Code (Section 19.124.040) states that hotel uses are required to provide one parking stall per room plus one parking stall per employee. The project as proposed would construct a 185-room hotel with up to 62 staff members, which would equate to a total parking requirement of 247 spaces (185 + 62 = 247). According to the project site plan, the project would provide a total of 248 parking spaces: 11 spaces at-grade west of the building entrance, 121 spaces on the first below-grade level of the garage, and 116 spaces on the second below-grade level of the garage. Of the 248 parking spaces provided, 16 spaces would be designated for valet services. Valet parking is typically restricted from general guest parking due to either nonstandard parking stall dimensions and/or access limitations. However, it is common for hotels to provide special parking arrangements such as valet parking to meet the required parking demand. Parking exceptions, including valet parking, are allowed with City approval per Section 19.124.060C of the Zoning Code.

Shared Parking

As previously shown in Table 1 and Figure 2, the Cupertino Village Shopping Center parking is nearly fully occupied (95 percent) at noon on a typical Saturday. Thus, there is clearly a potential for parking overflow at the shopping center on Saturdays, particularly on a busy holiday weekend. Since the hotel parking demand would be low (approximately 55 percent occupied) during this period of the day, the hotel parking garage could serve as overflow parking for the shopping center, if necessary, through a shared parking agreement. This shared parking opportunity is described below.

Shared Parking Analysis

Shared parking is the use of a parking space to serve two or more individual land uses due to variations in parking demand by hour among differing land uses. Since the shopping center and proposed hotel are considered complementary uses, some of the total on-site parking could be shared between these uses. An analysis was conducted to determine the number of parking spaces that could be shared. The shared parking analysis presented in this memorandum is based on the observed parking demand of the existing shopping center and the Urban Land Institute's (ULI) publication entitled *Shared Parking*, *2nd Edition* which provides parking occupancy rates for many land uses, including hotel, according to the time of day. The parking occupancy rates can be applied to the peak parking demand for each land use. Comparing the hourly parking demand for each land use separately with the combined parking demand for both the shopping center and hotel components shows whether or not the overall parking supply can be reduced through implementation of a shared parking plan. Thus, the application of the principal of shared parking is an effective way to reduce the total parking demand for a single mixed-use development or two complementary developments.

Table 2 shows the parking occupancy and the possibility for shared parking between the proposed hotel and the adjacent shopping center. Results of the shared parking analysis show how parking demand varies throughout the day, with the peak parking demand for hotels occurring overnight (starting at about 11:00 PM) and the peak parking demand for the shopping center occurring at 1:00 PM during the week and at noon on Saturdays (weekends).

Based on the analysis, the combined parking demand for the Cupertino Village Shopping Center and the new hotel would peak at 1:00 PM on a typical weekday, when the parking demand is at approximately 55% for the hotel and about 60% for the shopping center. During a typical weekend, the combined parking demand for the shopping center and hotel would peak at noon, when the parking demand reaches approximately 55% for the hotel and about 95% for the shopping center. The maximum combined parking demand would be 600 parking spaces during the week and 866 parking spaces on the weekend. Together, the shopping center and hotel would provide a total potential shared parking supply of 1,002 spaces.

Although the counts show the Cupertino Village Shopping Center currently provides adequate parking to serve the peak parking demand generated by all the individual land uses that comprise the shopping center, the lots are nearly fully occupied at noon on a typical Saturday. Thus, there is clearly a potential for parking overflow at the shopping center on weekends, particularly on a busy holiday weekend. Since the hotel parking spaces will only be about 55% occupied during this time period, the hotel parking garage could be used by patrons and/or employees of the shopping center, if necessary, through a shared parking arrangement. While it is unlikely that hotel guests or employees would have a need to utilize the shopping center parking lots or garage because, as proposed, the project is providing adequate parking per the City Code, the hotel would have the option to do so if necessary since the shopping center parking would only be about 15 percent occupied when the hotel parking demand would peak at night (around 11:00 PM).

Table 2
Cupertino Village Shared Parking Analysis

Hour of Day	Shopping Center[1] Wkdy	Shopping Center[1] Wknd	Business Hotel[2] Wkdy[3]	Business Hotel[2] Wknd[4]	Total Demand Wkdy	Total Demand Wknd
Parking Demand by Hour						
6:00 AM	23	23	235	235	**258**	**258**
7:00 AM	54	48	222	222	**276**	**270**
8:00 AM	67	48	198	198	**265**	**246**
9:00 AM	137	138	173	173	**310**	**311**
10:00 AM	206	263	148	148	**354**	**411**
11:00 AM	295	492	148	148	**443**	**640**
Noon	400	**730**	136	136	**536**	**866**
1:00 PM	**464**	719	136	136	**600**	**855**
2:00 PM	379	562	148	148	**527**	**710**
3:00 PM	310	478	148	148	**458**	**626**
4:00 PM	309	491	161	161	**470**	**652**
5:00 PM	309	509	173	173	**482**	**682**
6:00 PM	322	552	185	185	**507**	**737**
7:00 PM	394	631	185	185	**579**	**816**
8:00 PM	392	552	198	198	**590**	**750**
9:00 PM	254	349	210	210	**464**	**559**
10:00 PM	128	152	235	235	**363**	**387**
11:00 PM	85	116	**247**	**247**	**332**	**363**
Midnight	0	0	**247**	**247**	**247**	**247**
Maximum Combined Parking Demand					600	866
Total Shared Parking Supply[5]					1,002	1,002

Notes:
Wkdy = Weekday; Wknd = Weekend
Source: Urban Land Institute (ULI) *Shared Parking, 2nd Edition, 2005*.

1 Shopping Center parking demand by hour was obtained from parking counts conducted by Hexagon in May 2018. The shopping center contains a total of 770 parking spaces.

2 Hotel parking demand by hour was determined by multiplying the City of Cupertino's parking requirement for hotels (per the Zoning Code Section 19.124.040), calculated to be 247 spaces, by the parking occupancy ratios contained in the ULI *Shared Parking*.

3 Business Hotel, weighted average of guest (83%) and employee (17%) ratios on weekdays.

4 Business Hotel, weighted average of guest (80%) and employee (20%) ratios on weekends.

5 The proposed shared parking supply excludes the 16 valet parking stalls that would be introduced by the proposed hotel, since those parking spaces could not be shared.

Reduced Parking Opportunity for the Hotel Project

As demonstrated by the shared parking analysis, there is a clear opportunity for the proposed hotel and existing shopping center to share parking. Based on the shared parking analysis, a maximum of 866 parking spaces would be required to meet the combined parking demand generated by the shopping center and hotel (which occurs on Saturday). Since the shopping center and hotel would provide a combined parking supply of 1,002 spaces, the results of the analysis show that there would always be at least 136 vacant parking spaces for use by hotel or shopping center patrons and employees. This excess parking supply presents an opportunity for the hotel to provide significantly less parking than the standard hotel parking requirement contained in the City Code.

The City of Cupertino Zoning Code (Section 19.124.060) does allow for parking exceptions with City approval. Any project proposing an alternative parking standard (e.g., reduced parking supply) must meet certain criteria before the parking exception will be granted, including the following conditions:

- The applicant must submit a detailed parking study which demonstrates that the proposed use is compatible with the proposed parking supply.
- If adjacent properties are used to share parking, they are in close proximity to each other, and the reciprocal parking and access easements and maintenance agreements are recorded on the applicable properties to run with the land.

For the proposed hotel, we recommend providing 0.76 parking spaces per room. This parking rate reflects the average Saturday parking demand observed at several comparable hotel sites in Santa Clara and San Mateo Counties (see Table 3 below). A parking rate of 0.76 spaces per room equates to a parking supply of 141 spaces, which is 106 fewer spaces than the City's standard parking requirement for hotels.

Table 3
Hotel Parking Demand Ratios

	Holiday Inn Belmont		Fairfield Inn & Suites San Carlos		Hilton Garden Inn Mountain View		Sheraton Inn Sunnyvale		Courtyard by Marriott Sunnyvale		Aloft Hotel Cupertino	
	Wed. 3/30/16	Sat. 4/2/16	Thurs. 4/7/16	Sat. 4/9/16	Thurs. 4/30/15	Sat. 5/2/15	Thurs. 4/30/15	Sat. 5/2/15	Thurs. 4/30/15	Sat. 5/2/15	Wed. 6/11/14	Sat. 6/14/14
Total Rooms	82	82	120	120	160	160	173	173	145	145	123	123
Occupied Rooms	65	68	82	69	155	156	125	164	82	144	123	121
Total Parking Spaces	77	77	112	112	153	153	283	283	127	127	N/A	N/A
Occupied Parking Spaces	39	55	66	88	115	125	88	146	55	107	76	67
Parking Demand Ratio	**0.60**	**0.81**	**0.80**	**1.28**	**0.74**	**0.80**	**0.70**	**0.89**	**0.67**	**0.74**	**0.62**	**0.55**

Average Occupancy Ratio :	0.84	Maximum Occupancy Ratio :	1.00
Average Weekday Parking Demand Ratio :	0.69	Maximum Weekday Parking Demand Ratio :	0.80
Average Weekend Parking Demand Ratio[1]:	0.76	Maximum Weekend Parking Demand Ratio[1]:	0.89

Notes:
[1] The weekend parking demand ratio from the Fairfield Inn & Suites (San Carlos) was omitted due to anomalies. This ratio is significantly greater than the others, and it is very likely that some outside factors affected the parking survey on this day (e.g., people utilizing the free and unrestricted parking to avoid parking fees at other parking locations, such as the airport).

Conclusions

The existing Cupertino Village Shopping Center and proposed hotel experience varying parking demands throughout the day, which will peak at different times. For this reason, the proposed hotel and the shopping center are considered complementary developments and could implement a shared parking arrangement. Based on the shared parking analysis, a maximum of 866 parking spaces would be required to meet the combined parking demand generated by the shopping center and hotel. Together, the shopping center and hotel would provide a total potential shared parking supply of 1,002 spaces, which would be more than adequate to accommodate the peak parking demand generated by the hotel and all the individual land uses that comprise the Cupertino Village Shopping Center.

The excess parking supply as a result of a shared parking agreement between the hotel and the shopping center presents an opportunity for the hotel to provide significantly less parking than the standard hotel parking requirement contained in the City of Cupertino Zoning Code. We recommend the project provide 0.76 parking spaces per room. This parking rate reflects the average Saturday parking demand observed at several comparable hotel sites in Santa Clara and San Mateo Counties. A parking rate of 0.76 spaces per room equates to a parking supply of 141 spaces, which is 106 fewer spaces than the City's standard parking requirement for hotels.