

Appendix F – Transportation Analysis



HEXAGON TRANSPORTATION CONSULTANTS, INC.



123 Sherman Avenue Office Development



Transportation Analysis

Prepared for:

City of Palo Alto



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Transportation Planning Traffic Calming Traffic Control Plans Traffic Simulation Traffic Impact Analysis Traffic Signal Design Travel Demand Forecasting

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Executive Summary

This report presents the results of the transportation analysis conducted for the proposed office development at 123 Sherman Avenue, 150 Grant Avenue, and 2501 Park Boulevard in Palo Alto, California. The sites are currently occupied by office uses. The project, as proposed, would demolish the existing office buildings, consolidate the three parcels, and build a new three-story office building consisting of 48,074 square feet (s.f.) of office space and 3,871 s.f. of ground floor retail space. Parking would be provided in a three-level parking garage with one ground level and two levels of below grade parking. Access to the garage would be provided via a driveway on Sherman Avenue.

The potential transportation impacts of the project were evaluated in accordance with the standards and policies set forth by the City of Palo Alto. The study includes a vehicle miles traveled (VMT) impact analysis in accordance with the CEQA Guidelines and the City of Palo Alto's VMT policy. The study also evaluates potential transportation effects of the project in accordance with the standards and methodologies set forth by the City of Palo Alto and the Santa Clara Valley Transportation Authority (VTA).

VMT Analysis

The project is located within ½ -mile of the California Avenue Caltrain Station and meets the proximity to transit screening criterion. Thus, a VMT analysis is not required.

Project Trip Estimates

Trip generation for the proposed project was estimated based on the square footage of the project and using the average trip rates published in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition. Trip credits were taken for the existing office space on-site. Trip reductions for mixed-use development and proximity to transit were applied based on the guidelines provided in the 2014 *VTA Transportation Impact Analysis Guidelines*. The project is estimated to generate a net 511 daily trips, with 50 net trips (43 inbound and 7 outbound) in the AM peak hour and 66 net trips (18 inbound and 48 outbound) in the PM peak hour.

Intersection Level of Service Analysis

The results of the intersection level of service analysis are shown on Table ES-1. The results show that all study intersections would operate an acceptable level of service under existing and background scenarios, with and without the project. The intersection of El Camino Real/Page Mill Road would operate at a substandard level of service under cumulative conditions. However, since the critical

movement delay does not increase by more than four seconds under cumulative plus project conditions, the addition of project traffic would not cause an adverse effect on traffic operations.

Other Transportation Issues

The site plan shows adequate site access and on-site circulation, and no significant on-site circulation issues are expected to occur as a result of the project. The project would not have an adverse effect on the existing transit, pedestrian, or bicycle facilities in the study area.

Hexagon has the following recommendation resulting from the evaluation of site access, on-site circulation, and parking.

Recommendation

- Signage and instructions should be posted outside of the stackers with contact information in case of malfunction.
- The project applicant should discuss with city staff whether an off-street loading space would be required.
- The project applicant should coordinate with city staff to stripe a loading space on Park Boulevard near the project entrance.
- The project should implement a Transportation Demand Management (TDM) Plan to reduce its parking demand and to encourage alternative transportation modes.

**Table ES-1
Level of Service Summary**

# Intersection	Peak Hour	Existing						Background						Cumulative					
		No Project			with Project			No Project			with Project			No Project			with Project		
		Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Avg. Delay (sec)	LOS	Incr. in Critical V/C	Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Avg. Delay (sec)	LOS	Incr. in Critical V/C	Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Avg. Delay (sec)	LOS	Incr. in Critical V/C
1 Park Boulevard & California Avenue	AM	7.5	A	0.0	7.5	A	0.000	7.5	A	0.0	7.5	A	0.001	7.7	A	0.0	7.7	A	0.001
	PM	8.1	A	0.002	8.2	A	0.1	8.2	A	0.1	8.2	A	0.002	8.6	A	0.1	8.7	A	0.003
2 Park Boulevard & Sherman Avenue*	AM	10.8	B	0.000	11.3	B	0.3	10.8	B	0.3	11.3	B	0.000	11.5	B	0.3	12.0	B	0.000
	PM	10.8	B	0.000	14.0	B	0.8	13.8	B	0.8	14.0	B	0.000	15.1	C	0.8	15.4	C	0.000
3 Park Boulevard & Grant Avenue*	AM	10.8	B	0.001	11.0	B	-0.1	10.8	B	-0.1	11.0	B	0.001	11.2	B	-0.1	11.5	B	0.001
	PM	13.6	B	0.008	14.3	B	-0.1	13.7	B	-0.1	14.3	B	0.008	15.1	C	-0.1	15.9	C	0.010
4 Birch Street & Sheridan Avenue*	AM	28.3	D	0.026	29.6	D	0.2	28.9	D	0.2	30.4	D	0.026	36.7	E	0.3	39.1	E	0.027
	PM	21.7	C	0.029	23.0	C	0.5	21.8	C	0.5	23.2	C	0.030	25.5	D	0.6	27.5	D	0.034
5 Park Boulevard & Page Mill Road	AM	14.9	B	0.001	15.4	B	0.1	15.0	B	0.1	15.5	B	0.001	18.7	B	0.1	19.1	B	0.001
	PM	15.9	B	0.001	16.6	B	0.1	15.9	B	0.1	16.6	B	0.001	21.2	C	0.1	21.6	C	0.001
6 El Camino Real & California Avenue	AM	33.7	C	0.009	34.1	C	1.1	35.5	D	1.1	36.1	D	0.009	33.5	C	1.1	34.2	C	0.009
	PM	30.0	C	0.005	30.5	C	0.4	31.2	C	0.4	31.7	C	0.005	30.8	C	0.3	31.2	C	0.004
7 El Camino Real & Page Mill Road (CMP)	AM	64.4	E	0.003	64.6	E	0.3	64.7	E	0.3	64.9	E	0.003	96.8	F	1.1	97.5	F	0.003
	PM	49.1	D	0.003	49.3	D	0.3	49.5	D	0.3	49.7	D	0.003	86.7	F	1.4	87.4	F	0.003

Bold indicates a substandard level of service.

Note:
* Denotes two-way stop-controlled intersection. The worst leg delay is reported.

1. Introduction

This report presents the results of the transportation analysis conducted for the proposed office development at 123 Sherman Avenue, 150 Grant Avenue, and 2501 Park Boulevard in Palo Alto, California (See Figure 1). The sites are currently occupied by office uses. The project, as proposed, would demolish the existing office buildings, consolidate the three parcels, and build a new three-story office building (48,074 sq.ft.) with ground floor retail space (3,871 sq.ft.) and two levels of below grade parking. Access to the garage would be provided via a driveway on Sherman Avenue (See Figure 2).

Scope of Study

The purpose of the study is to identify potential transportation impacts related to the proposed development. Per California Senate Bill 743 (SB 743) and CEQA Guidelines, the study includes a vehicle miles traveled (VMT) analysis. The study also includes a local transportation analysis that evaluates potential transportation effects of the project in accordance with the standards and methodologies set forth by the City of Palo Alto and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the County Congestion Management Program (CMP).

Vehicle Miles Traveled (VMT) Analysis

Per SB 743, the California Natural Resources Agency, with assistance from the Governor's Office of Planning and Research (OPR), adopted new CEQA guidelines in December 2018. The new guidelines state that automobile delay and level of service (LOS), will no longer constitute a significant environmental impact under CEQA, and that VMT is considered the most appropriate metric to evaluate a project's transportation impacts. The new CEQA guidelines became effective July 1, 2020. The evaluation of VMT for this project is based on the City's VMT Policy adopted in June 2020.

The Palo Alto VMT Policy establishes screening criteria for projects that are expected to cause a less-than-significant transportation impact under CEQA based on the land use and/or location. Projects that meet the screening criteria are not required to prepare further VMT analysis. For a project that does not meet the screening criteria, a project's VMT impact is determined by comparing the project VMT to the appropriate thresholds of significance based on the type of development. The project would meet all applicable VMT screening criteria as described in further detail in Chapter 2.

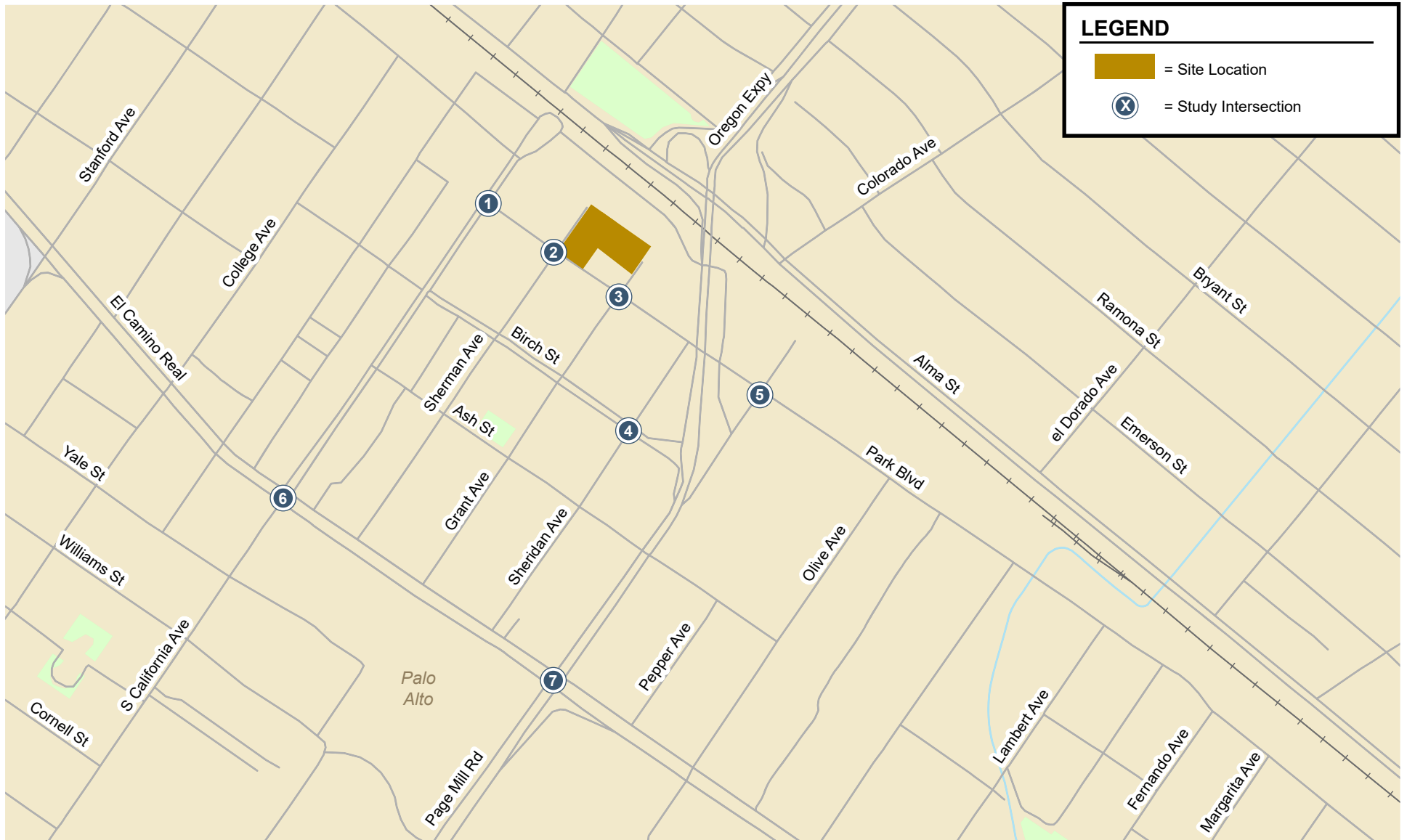


Figure 1
Site Location and Study Intersections

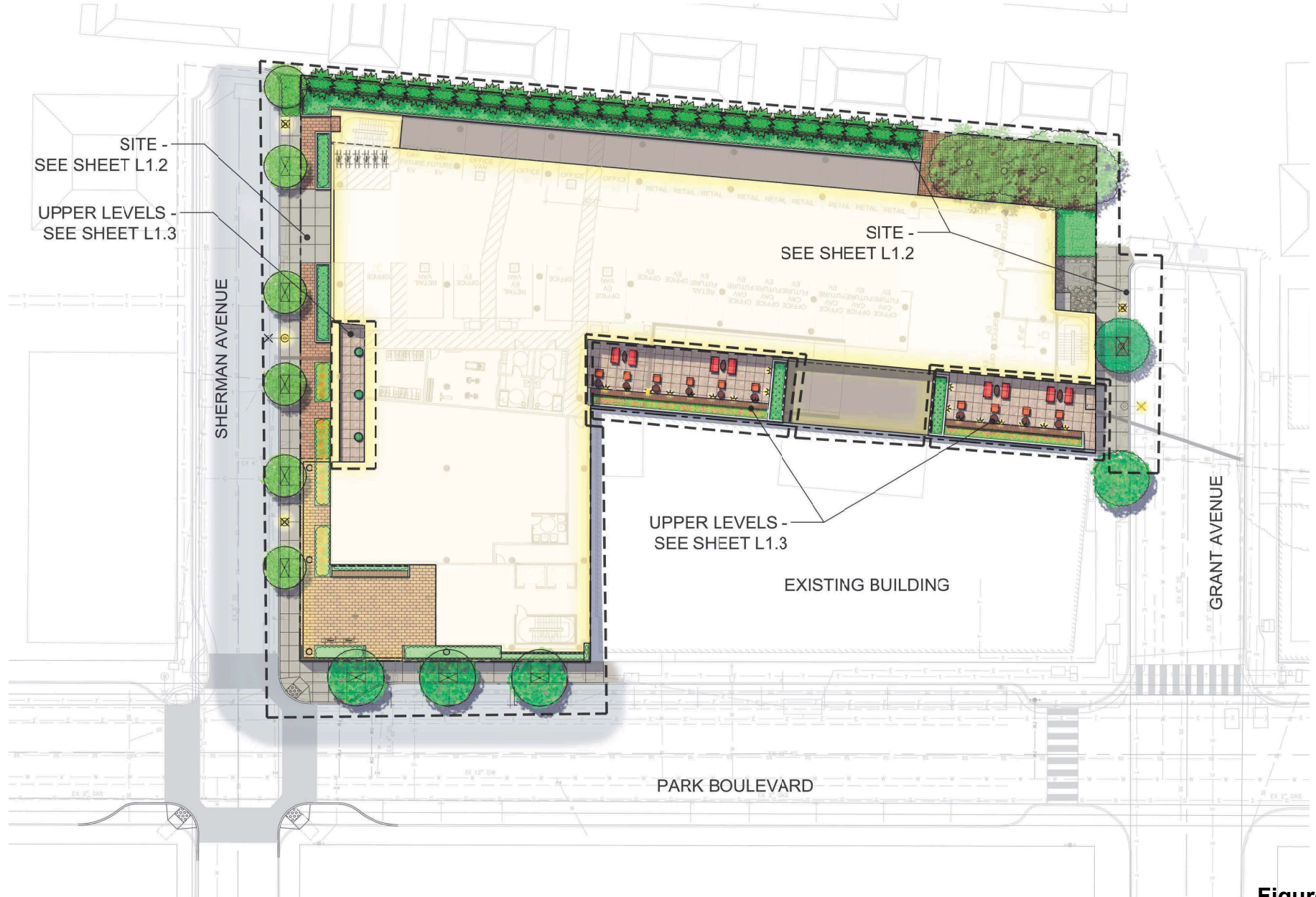


Figure 2
Proposed Site Plan

Local Transportation Analysis (LTA)

The local transportation analysis (LTA) includes an analysis of the traffic operational effects of the project on the key intersections in the vicinity of the site, an evaluation of the transit, bicycle, and pedestrian access and circulation, and a review of site access and on-site circulation.

Study Intersections

The study intersections were selected in accordance with VTA's *Transportation Impact Analysis (TIA) Guidelines* (October 2014) and in consultation with Palo Alto staff. The study intersections are listed below and shown on Figure 1. One study intersection is designated as a CMP intersection.

1. Park Boulevard and California Avenue (unsignalized)
2. Park Boulevard and Sherman Avenue (unsignalized)
3. Park Boulevard and Grant Avenue (unsignalized)
4. Birch Street and Sheridan Avenue (unsignalized)
5. Park Boulevard and Page Mill Road
6. California Avenue and El Camino Real
7. El Camino Real and Page Mill Road/Oregon Expressway (CMP)

Intersection traffic conditions were evaluated for the following scenarios:

- **Existing Conditions.** Existing traffic volumes at the study intersections were based on pre-pandemic traffic counts conducted in 2017 and 2019 and new counts collected in 2022 where pre-pandemic counts were not available. A growth rate of one percent per year was applied to traffic counts that were more than two years old to estimate the traffic volumes for existing conditions. The new counts were factored by comparing the new counts to available pre-pandemic counts.
- **Existing Plus Project Conditions.** Existing plus project traffic volumes were estimated by adding the additional traffic generated by the project.
- **Background Conditions.** Background traffic volumes were estimated by adding to existing traffic volumes the projected volumes from approved but not yet constructed developments in the vicinity of the project. A list of approved but not yet constructed developments was obtained from the City of Palo Alto website.
- **Background Plus Project Conditions.** Background plus project traffic volumes were estimated by adding the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential adverse effects of the project on traffic operations.
- **Cumulative No Project Conditions.** The cumulative no project traffic volumes were estimated by using the Palo Alto Travel Demand Forecasting model for Year 2040.
- **Cumulative Plus Project Conditions.** Cumulative plus project traffic volumes were estimated by adding the new traffic generated by the proposed project. Cumulative plus project conditions were evaluated relative to cumulative conditions in order to determine potential adverse effects of the project on traffic operations.

Other Transportation Issues

The study includes a left-turn vehicle queuing analysis at selected intersections, an evaluation of potential adverse effects to transit services and pedestrian and bicycle facilities, and a review of site access, on-site circulation, and parking.

Intersection Operations Analysis Methodology

This section describes the methods used to determine traffic conditions at the study intersections and the traffic operation effects of the project. 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 previous traffic studies, the City of Palo Alto, the CMP Annual Monitoring Report, and field observations. The following data were collected from these sources:

- Intersection traffic volumes,
- Lane geometries,
- Signal timing and phasing, and
- Approved developments

Intersection Level of Service Analysis Methodology and Standards

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 analysis methods are described below.

Signalized Intersections

The City of Palo Alto evaluates level of service at signalized intersections based on the 2000 *Highway Capacity Manual (HCM)* level of service methodology using TRAFFIX software. Since TRAFFIX is the level of service methodology for the CMP-designated intersections, the City of Palo Alto employs the CMP defaults values for the analysis parameters. This HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The correlation between average delay and level of service is shown in Table 1.

The City of Palo Alto has set forth LOS D as the minimum standard, except on CMP facilities, which has a standard of LOS E. In the study area, the El Camino Real/Page Mill Road intersection is a CMP intersection.

Unsignalized Intersections

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, delays, and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. The level of service is reported based on the average delay for the worst approach. For all-way stop controlled intersections, intersection operations on the basis of average control delay time for all vehicles at the intersection is evaluated. The level of service definitions for unsignalized intersections is shown in Table 2. This study utilizes TRAFFIX software to determine intersection levels of service based on the 2000 *HCM* methodology for unsignalized intersections.

The City of Palo Alto does not have an adopted level of service standard for unsignalized intersections.

Table 1
Signalized Intersection Level of Service Definitions Based on Average 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	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 20.0
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 some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
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 (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
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 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), p.10-16.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Definition of Adverse Intersection Operational Effects

Adverse operational effects on signalized intersections are based on the City of Palo Alto and CMP level of service standards. For unsignalized intersections, the City of Palo Alto does not have a formally adopted level of service policy.

Signalized Intersections

According to the City of Palo Alto and CMP level of service standards, a development is said to create an adverse operational effect on traffic conditions at a signalized intersection if for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection drops below its respective level of service standard (LOS D or better for local intersections and LOS E or better for CMP intersections) when project traffic is added, or
2. An intersection that operates below its level of service standard under no-project conditions experiences an increase in critical-movement delay of four (4) or more seconds, and an increase in critical volume-to-capacity ratio (v/c) of one percent (0.01) or more when project traffic is added.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more.

Unsignalized Intersections

Although the City of Palo Alto does not have an adopted level of service standard for unsignalized intersections, based on City policies, the project is said to create an adverse operational effect at an unsignalized intersection if for either peak hour:

1. The addition of project traffic causes the average intersection delay for all-way stop-controlled or the worst movement/approach for side-street stop-controlled intersections to degrade to LOS F, and
2. The intersection satisfies the *California Manual of Uniform Traffic Control Devices (CA MUTCD)* peak-hour volume signal warrant.

Intersection Vehicle Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis at intersections where the project would add a substantial number of trips to the left-turn movements or stop-controlled approaches. The vehicle queuing analysis is used to determine the appropriate storage lengths for the high demand turn lanes where the project would add a substantial number of trips. 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 for a particular left-turn 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 left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

For 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 larger 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). Thus, turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Vehicle queuing at unsignalized intersections is evaluated based on the delay experienced at the specific study turn movement.

Report Organization

This report has a total of five chapters. Chapter 2 presents the VMT analysis. Chapter 3 describes existing conditions including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 4 presents the intersection operations analysis including the method by which project traffic is estimated, the results of intersection level of service analysis for background, background plus project, and cumulative conditions, and any adverse effects to intersection level of service caused by the project. Chapter 5 presents the analysis of other transportation-related issues, including left-turn vehicle queuing at selected intersections, site access and on-site circulation, parking, and potential adverse effects on bicycle, pedestrian, and transit facilities.

2. Vehicle Miles Traveled Analysis

This chapter presents the VMT analysis for the project, including the result of the VMT screening.

Screening for VMT Analysis

The Palo Alto VMT Policy establishes screening criteria for developments that are expected to cause a less-than-significant transportation impact under CEQA and are not required to prepare further VMT analysis. The Palo Alto VMT Policy provides the following screening criteria to exempt development projects from conducting a full VMT analysis:

- Small developments – Projects that generate fewer than 110 trips per day
- Projects in Low-VMT Areas – Projects located in low-VMT areas that have similar features as existing developments
- Projects in Proximity to Major Transit Stops – Projects that are located within a half mile of an existing or planned high-quality transit corridor or major transit station
- Affordable Housing – 100% affordable housing in infill locations
- Local-Serving Retail – Retail projects of 50,000 s.f. or less
- Transportation Projects – Roadway, transit, bicycle and pedestrian projects

The proximity to major transit stop screening criterion applies to projects that are located within a half mile of an existing or planned high-quality transit corridor or major transit station and meet the following additional criteria for office projects: (1) is high density (minimum floor area ratio [FAR] of 0.75), (2) does not exceed parking requirements, and (3) is consistent with Plan Bay Area.

The project is located within ½ -mile of the California Avenue Caltrain Station, which is considered a major transit station. The project would have an FAR of 1.99, which is greater than the required FAR of 0.75. The project would provide fewer parking spaces than required by the Palo Alto code. The project would not conflict with the strategies described in Plan Bay Area. Therefore, the project meets the proximity to transit screening criterion, and further VMT analysis is not required. The project's impact on VMT would be less than significant.

3.

Existing Transportation Conditions

This chapter describes existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit services, and pedestrian and bicycle facilities.

Existing Roadway Network

Regional access to the project site is provided by US 101 and I-280. Local access to the project site is provided via El Camino Real (SR 82), Page Mill Road/Oregon Expressway, Park Boulevard, California Avenue, Sherman Avenue, and Grant Avenue. For the purposes of this study, US 101, I-280, El Camino Real, and all parallel streets are considered to run north-south, and cross streets, such as Page Mill Road, are considered to run east-west.

US 101 is a north-south freeway that extends through and beyond the Bay Area, connecting San Francisco to San Jose. US 101 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. US 101 provides access to the study area via a full interchange at Oregon Expressway.

I-280 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction) in the vicinity of the site. I-280 extends northward through San Francisco and southward to US 101 in San Jose. East of US 101, it makes a transition into I-680 and extends north to Oakland. Access to and from the site is provided via a full interchange at Page Mill Road.

El Camino Real (SR 82) is a six-lane arterial that extends from Santa Clara County to San Mateo County. El Camino Real is oriented in an approximately north-south direction in the project vicinity. Near the project site, El Camino Real has a raised, landscaped median with left-turn pockets provided at intersections. Sidewalks are present on both sides of the street. On-street parking is permitted on both sides of the street along the project frontage and in the project vicinity. The speed limit is 35 miles per hour (mph). El Camino Real would provide access to the project site via Sherman Avenue.

Page Mill Road is an east-west four-lane arterial. It transitions from Oregon Expressway in the east at El Camino Real and continues west to Skyline Boulevard. Page Mill Road has a landscaped median with left-turn pockets at intersections and has bike lanes and sidewalks on both sides of the street. On-street parking is prohibited on both sides of the street in the project vicinity. The speed limit is 35 mph.

Oregon Expressway is an east-west four-lane arterial. It transitions from Page Mill Road in the west at El Camino Real and continues east to US 101. Oregon Expressway has a landscaped median with left-turn pockets at intersections. In the project vicinity, sidewalks are present on both sides of the street west of Birch Street. Sidewalks are not provided on the underpass of the Caltrain tracks. On-street

parking is prohibited on both sides of the street near the project site. The speed limit is 35 mph. Site access would be provided via its intersection at Birch Street.

Park Boulevard is a two-lane north-south street that extends between El Camino Real and Whittlem Drive. In the project vicinity there are continuous sidewalks, on-street parking, bike lanes, and traffic calming measures like bulb-outs and speed bumps. It provides access to the project site via Sherman Avenue.

California Avenue is a two to four lane east-west street that extends between Park Boulevard and Amherst Street. In the project vicinity the street is a designated bike route with continuous sidewalks, on-street parking, and traffic calming measures like bulb-outs, landscaped center medians, and high visibility crosswalks. It provides access to the project site via Park Boulevard. It should be noted that since the COVID pandemic, California Avenue, between El Camino Real and Birch Street, has been closed to vehicular traffic. The closure has been extended to the end of 2023 and will go to City Council for consideration of a permanent closure.

Sherman Avenue is a two lane east-west street that extends between the project site and El Camino Real. It has continuous sidewalks, and on-street parking is allowed on some segments of the street. On-street parking is prohibited along the project frontage and east of Park Boulevard. Sherman Avenue provides direct access to the project site.

Grant Avenue is a two lane east-west street that extends east of Park Boulevard to El Camino Real in the west. The street segment between Park Boulevard and Birch Street operates as one-way eastbound with 90-degree parking. The rest of the street operates as two-way with on-street parking allowed on both sides of the street. It has continuous sidewalks. It provides access to the project site via Park Boulevard.

Existing Transit Services

Existing transit service to the study area is provided by the Santa Clara Valley Transportation Authority (VTA), Caltrain, and the Stanford Research Park Shuttle. Transit services in the project area are described below and shown on Figure 3.

Bus Service

The project area is served by several VTA bus lines. The bus lines that operate within ¼-mile walking distance of the project site are listed in Table 3, including their route descriptions and commute hour headways. Frequent Route 22, Local Route 89, and Rapid Route 522 serve the project area. The nearest bus stops are located at the California Avenue Caltrain Station and along El Camino Real.

Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain, which currently operates 92 weekday trains. The project site is located adjacent to the California Avenue Caltrain station. Trains stop frequently at the California Avenue station between 4:57 AM and 11:41 PM in the northbound direction, and between 5:56 AM and 1:09 AM in the southbound direction. Caltrain provides passenger train service seven days a week and provides extended service to Morgan Hill and Gilroy during commute hours.

Stanford Research Park Shuttle

The Stanford Research Park shuttle provides service from the Palo Alto Transit Center to the Research Park during the AM commute hours and from the Research Park to the Palo Alto Transit Center during

the PM commute hours. Stops for the shuttle are located approximately 1,000 feet from the project site along El Camino Real.

**Table 3
Existing Transit Services**

Route	Route Description	Weekday Hours of Operation	Headways ¹ (minutes)	Nearest Bus Stops	Walking Distance from Nearest Stop to Project Site (feet)
VTA Bus Routes					
Frequent Route 22	Palo Alto Transit Center - Eastridge Transit Center	4:30 AM - 2:30 AM	15	El Camino Real at California Avenue	1,875
Local Route 89	California Avenue Caltrain - Palo Alto VA Hospital	6:30 AM - 4:30 PM (southbound), 9:00 AM - 6:30 PM (northbound)	20 (southbound AM, northbound PM), 60 (northbound AM, southbound PM)	California Avenue Caltrain Station	725
Rapid Route 522	Palo Alto Transit Center - Eastridge Transit Center	5:30 AM - 11:00 PM	15	El Camino Real at California Avenue	1,875
Notes: Based on transit services as of April 2021. 1. Headways during weekday peak periods in the project area.					

Existing Pedestrian Facilities

Pedestrian facilities consist of sidewalks and crosswalks, which are present along all study area roadways and at signalized intersections. Pedestrian signal heads and push buttons are present at all signalized study intersections. Additionally, marked crosswalks are present along all legs of the Park Boulevard/California Avenue intersection and the east and south legs of the Park Boulevard/Sherman Avenue intersection. High visibility ladder-style crosswalks are present along the north and east legs of the Park Boulevard/Grant Avenue intersection with a flashing pedestrian beacon for pedestrians crossing Park Boulevard. Continuous sidewalks connect the project site to surrounding land uses, including restaurants, retail stores, and transit in the area. Overall, the existing sidewalks provide good pedestrian connectivity and safe routes to transit, nearby pedestrian destinations, and other points of interest in the project vicinity.

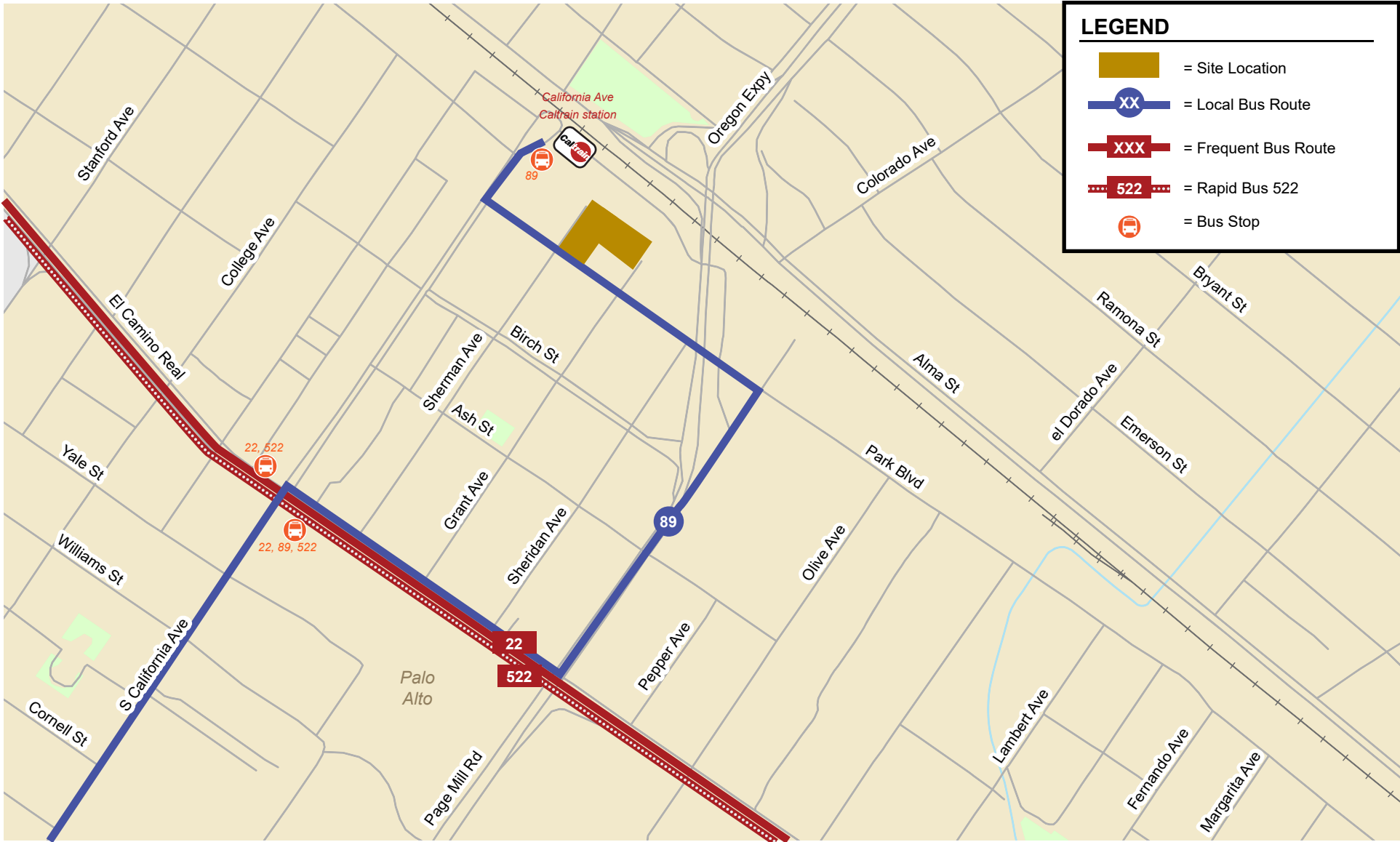


Figure 3
Existing Transit Services

Existing Bicycle Facilities

The bicycle facilities that exist in the project vicinity (see Figure 4) include striped bike lanes (Class II bikeway) and shared bike routes (Class III bikeway). Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are signed bike routes where bicyclists share a travel lane with motorists.

Striped bike lanes are present along the following street segments:

- Park Boulevard, between California Avenue and Lambert Avenue
- Park Boulevard, north of California Avenue
- Stanford Avenue, west of El Camino Real
- California Avenue, between Hanover Street and El Camino Real
- California Avenue, east of the California Avenue Caltrain Station
- Page Mill Road, between El Camino Real and the I-280 underpass
- Hansen Way, between Page Mill Road and El Camino Real

Bike routes are typically designated with sharrows (shared-lane pavement markings), and bikes may take the travel lane. Bike routes are appropriate for low-volume streets with slow travel speeds, especially those on which motorist volumes are low enough that passing maneuvers can use the full street width, on roadways with bicycle demand but without adequate space for bike lanes, and as “gap fillers” where there are short breaks in bike lanes due to right-of-way constraints. Bike routes are present along the following street segments:

- California Avenue, between El Camino Real and the California Avenue Caltrain Station
- Park Boulevard, south of Lambert Avenue

A bicycle undercrossing is present at the California Avenue Caltrain Station that connects bicyclists from the project area to bicycle facilities east of the rail tracks.

It should be noted that since the COVID pandemic, California Avenue, between El Camino Real and Birch Street, has been closed to vehicular traffic and has been converted into a pedestrian street. The closure has been extended to the end of 2023 and will go to City Council for consideration of a permanent closure.

Existing Lane Configurations

The existing lane configurations at the study intersections were obtained from field observations (see Figure 5).

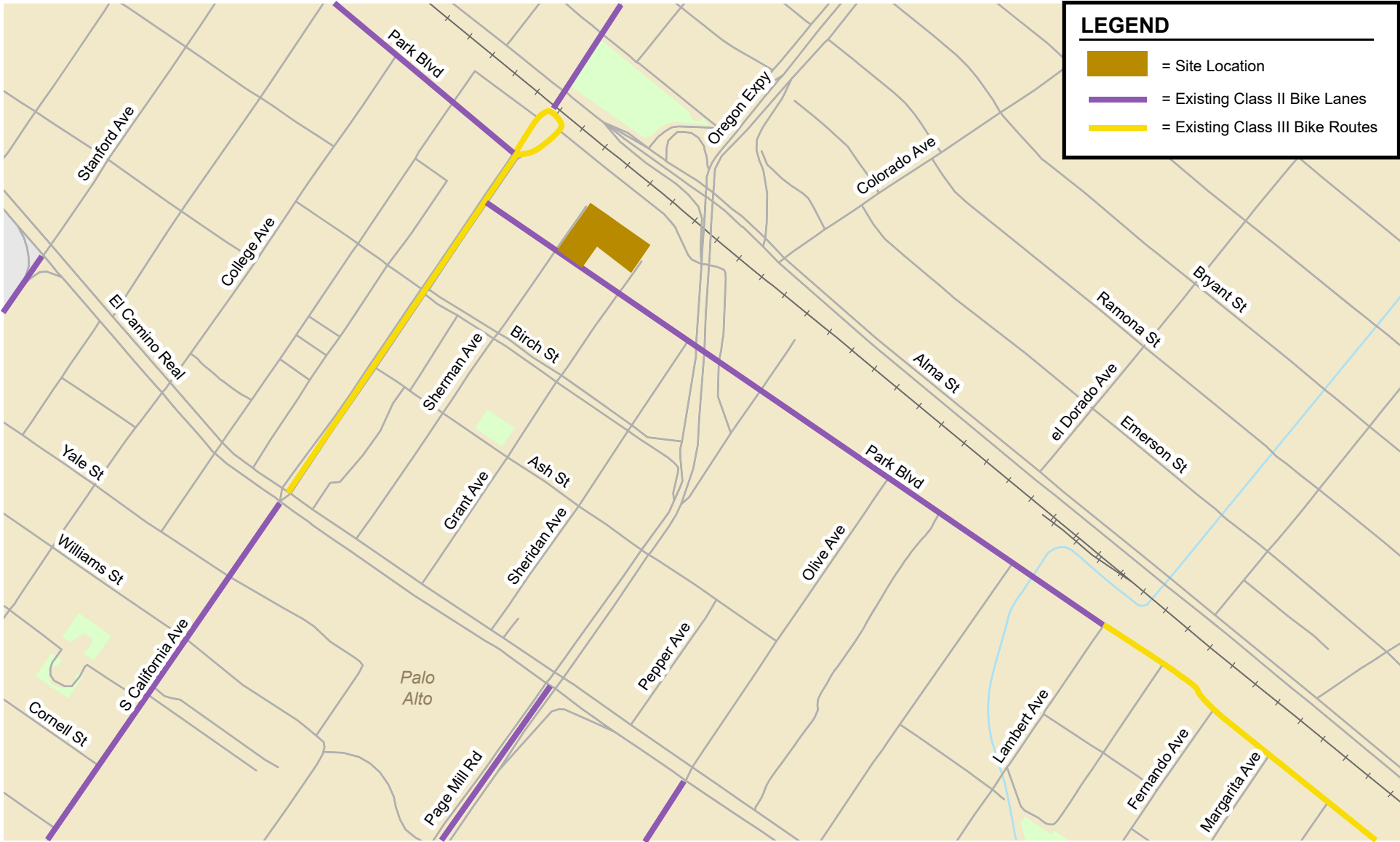


Figure 4
Existing Bicycle Facilities

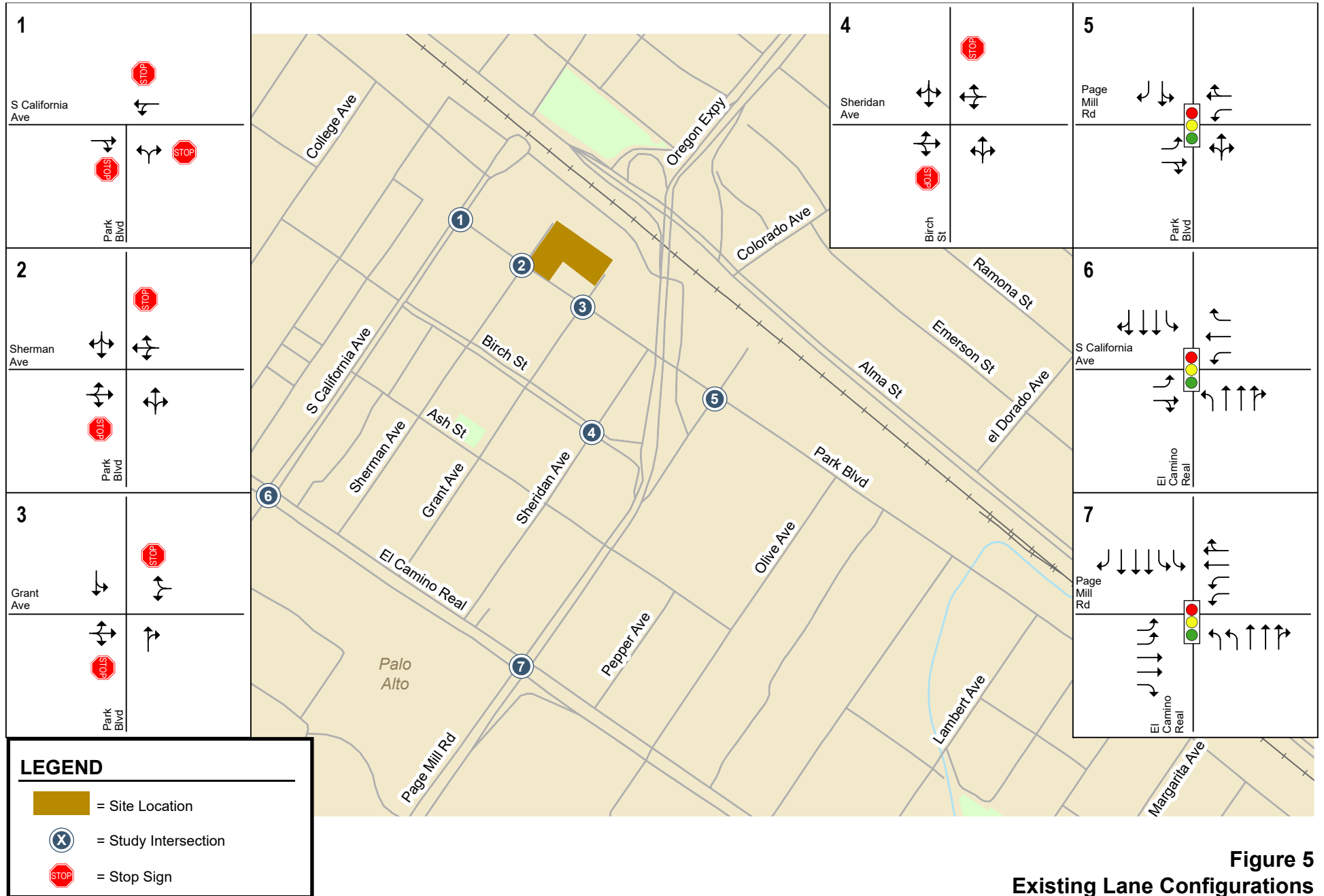


Figure 5
Existing Lane Configurations

4. Intersection Operations Analysis

This chapter presents the intersection operations analysis including the method by which project traffic is estimated, the results of the intersection level of service analysis, and any adverse effects to intersection level of service caused by the project. A potential adverse effect on a study intersection is not considered a CEQA impact.

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 development 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 show trip generation rates for many types of land uses. The research is compiled in the publication *Trip Generation Manual, 11th Edition*, by the Institute of Transportation Engineers (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trips that would be generated by the proposed office were estimated using the ITE trip rates for “General Office” (Land Use 710) and “Strip Retail Plaza” (Land Use 822). Strip Retail Plaza is defined by a retail use with less than 40,000 s.f. of space. Trip credits were taken for the existing office space on-site. Trip reductions for mixed-use development and proximity to transit were applied based on the guidelines provided in the 2014 *VTA Transportation Impact Analysis Guidelines*. The project is estimated to generate a net new 511 daily trips, including 50 net new trips (43 inbound and 7 outbound) in the AM peak hour and 66 net new trips (18 inbound and 48 outbound) in the PM peak hour, as shown in Table 4.

Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns on the surrounding roadway network and the locations of complementary land uses (see Figure 6). The peak-hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern and the location of the project driveway (see Figure 7).

**Table 4
Project Trip Generation Estimates**

Land Use	Reduction %	Size	Daily		AM Peak Hour			PM Peak Hour					
			Rate	Trip	Trip			Trip					
					Rate	In	Out	Total	Rate	In	Out	Total	
Proposed Land Uses													
#710 - General Office Building		48,074 Square Feet	10.840	521	1.520	64	9	73	1.440	12	57	69	
<i>Employment & Retail Reduction¹</i>	3%			-16		-2	0	-2		0	-2	-2	
<i>Employment near LRT, BRT, or Caltrain Station Reduction¹</i>	6%			-31		-4	-1	-5		-1	-3	-4	
#822 - Strip Retail Plaza (<40k)		3,871 Square Feet	54.450	211	2.360	5	4	9	6.590	13	13	26	
<i>Employment & Retail Reduction¹</i>	3%			-16		0	-2	-2		-2	0	-2	
Total Project Trips				669		63	10	73		22	65	87	
Existing Land Uses													
#710 - General Office Building		15,523 Square Feet	10.840	168	1.520	21	3	24	1.440	4	18	22	
<i>Employment near LRT, BRT, or Caltrain Station Reduction¹</i>	6%			-10		-1	0	-1		0	-1	-1	
Total Existing Trips				158		20	3	23		4	17	21	
Net Project Trips				511		43	7	50		18	48	66	
Source: ITE Trip Generation Manual, 11 th Edition 2021.													
¹ The following trip reductions are prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014).													
<u>Mixed-Used Development Project</u>													
with employment and employee-serving retail - 3% off employment component													
<u>Location Within 2,000-Foot Walk of Transit Facility</u>													
Employment near LRT, BRT, or Caltrain Station - 6%													

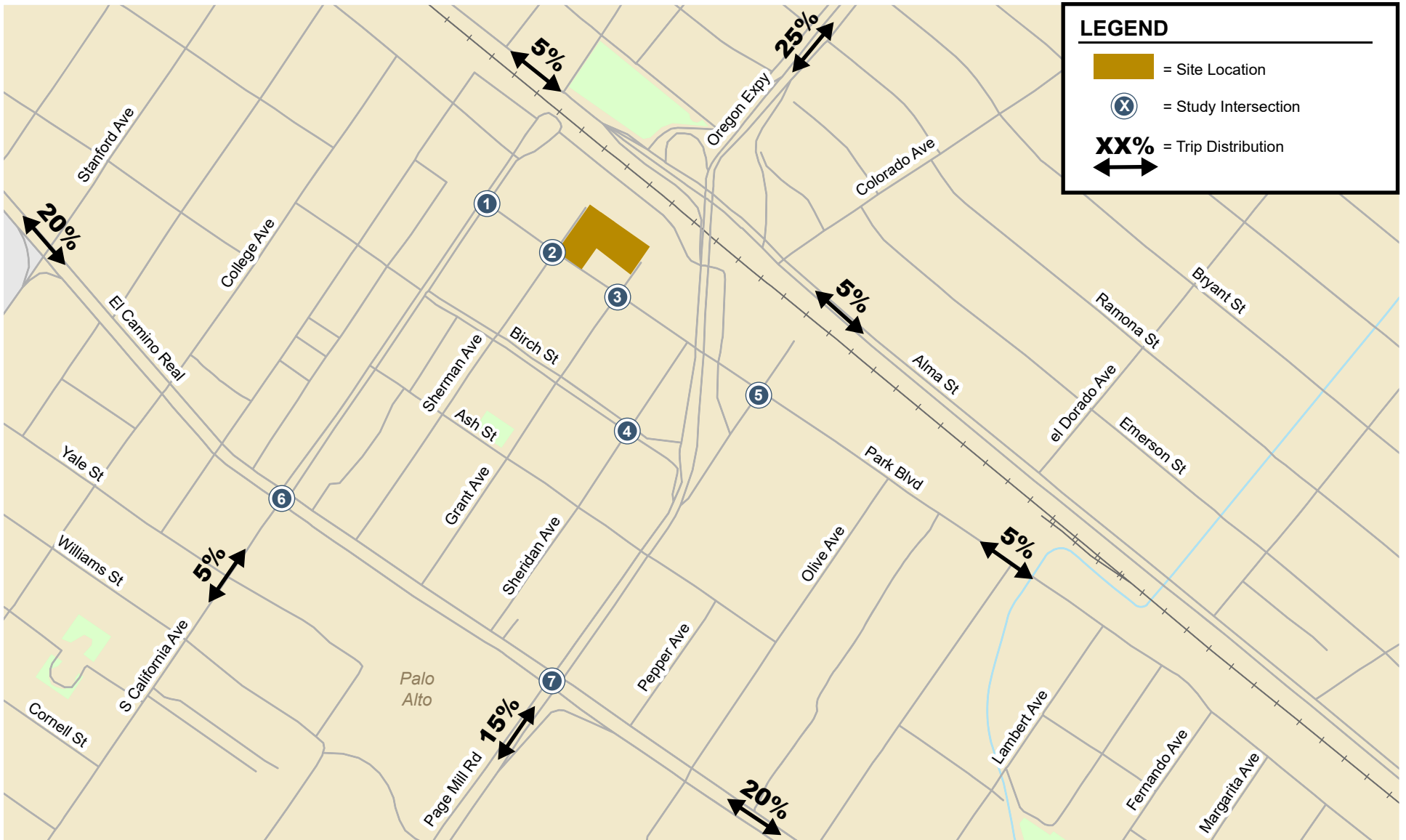


Figure 6
Project Trip Distribution

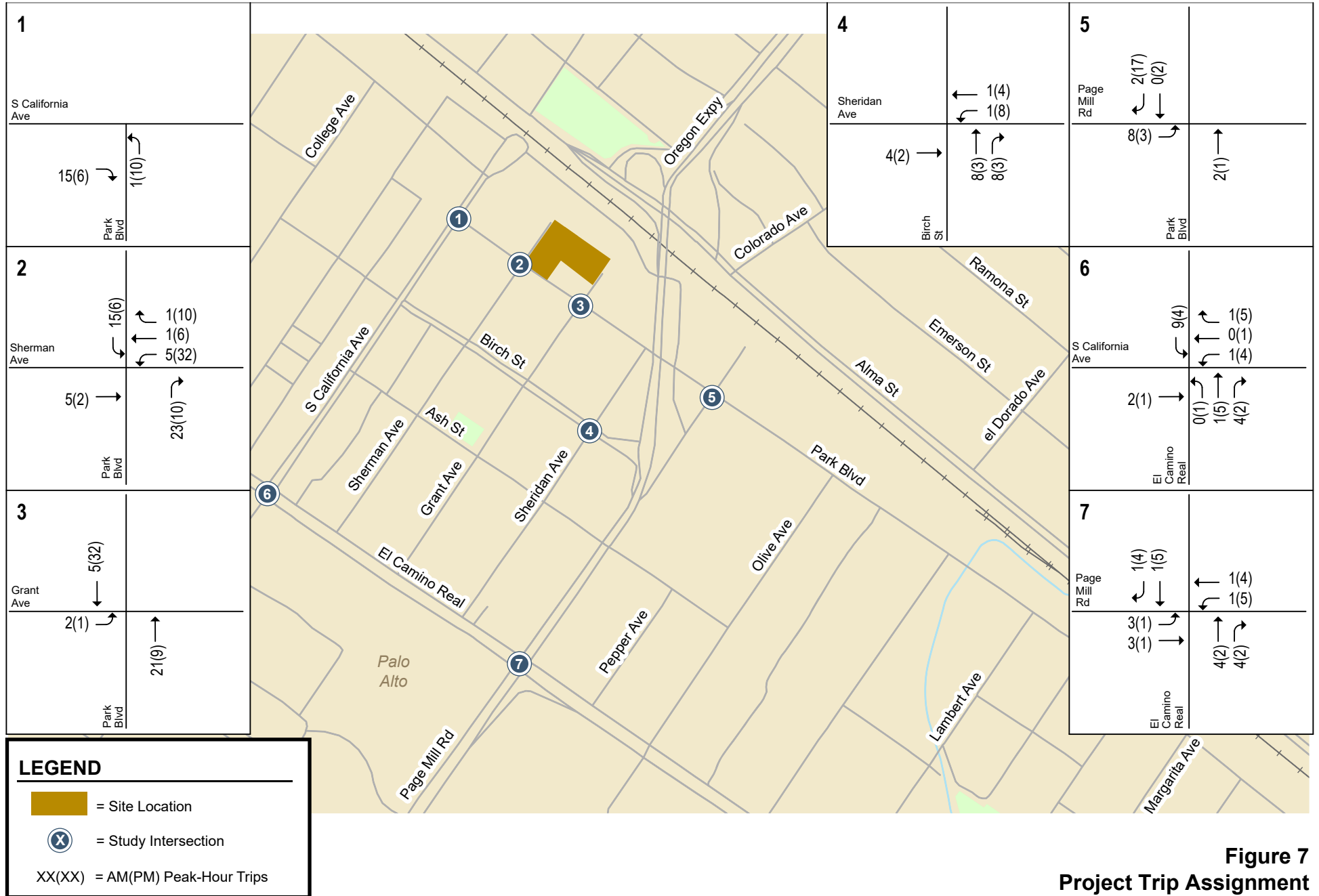


Figure 7
Project Trip Assignment

Traffic Volumes

Existing Traffic Volumes

Existing peak-hour traffic volumes at study intersections are based on available pre-pandemic traffic counts conducted for nearby studies, the VTA Congestion Management Program (CMP), and new traffic counts at the study intersection where pre-pandemic traffic counts were not available.

The El Camino Real/California Avenue intersection has turning movement counts conducted in 2019. The El Camino Real/Page Mill Road has turning movement counts conducted in 2017 and 2018. The Birch Street/Sheridan Avenue intersection has turning movement counts conducted in 2017. Since these counts are older than two years, they were grown by one percent per year to 2022.

At the remaining study intersections where counts were not available, new traffic counts were conducted in March 2022. Due to regional shelter-in-place orders during the Covid-19 pandemic, the new traffic counts do not represent typical conditions. These counts were factored by comparing the new counts to available pre-pandemic counts. Factors were derived based on comparing new traffic counts collected at the three study intersections that had pre-pandemic counts. On average, the new counts were 37 percent lower during the AM peak hour and 56 percent lower during the PM peak hour.

It should also be noted that during the count collection in March 2022, Sherman Avenue, between Birch Street and Park Boulevard, was closed to eastbound traffic due to construction activities. Traffic volumes at this intersection were adjusted by assuming the eastbound Sherman Avenue leg would have similar volumes to eastbound Grant Avenue.

The estimated existing volumes are shown in Figure 8. The intersection turning-movement counts conducted for this analysis are presented in Appendix A. The estimates of existing traffic volumes are tabulated in Appendix B.

Existing Plus Project Traffic Volumes

Project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 9).

Background Traffic Volumes

Background traffic volumes for the study intersections (see Figure 10) were estimated by adding to the existing traffic volumes the trips generated by nearby approved projects that have not been constructed or occupied.

Lists of approved projects were obtained from the City of Palo Alto website. Hexagon considered both the location and size of the approved projects in order to eliminate those that were too far away or too small to affect traffic conditions of the study intersections. Approved projects considered for the study include the 1451-1601 California Avenue project. Trip estimates for the approved project were developed using rates published in the ITE *Trip Generation Manual*. The estimated trips were assigned to the study intersections according to distributions based on our knowledge of the study area.

Background Plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 11).

The approved trips and traffic volumes for all components of traffic are tabulated in Appendix B.

Cumulative Traffic Volumes

The cumulative no project traffic volumes were estimated using the Palo Alto Travel Demand Forecasting model for Year 2040. Cumulative no project traffic volumes were estimated using the traffic growth derived from projected baseline (2015) and 2040 volumes from the model. The intersections of Park Boulevard/Sherman Avenue and Park Boulevard/Birch Avenue were not included in the model. Therefore, the average growth factor from the nearest intersections were used to develop a growth factor that was applied to traffic volumes at these intersections. The AM and PM peak-hour traffic volumes at the study intersections under cumulative conditions are shown on Figure 12.

The project trips were then added to the cumulative no project traffic volumes to yield cumulative plus project traffic volumes (see Figure 13). Traffic volumes for all components of traffic are tabulated in Appendix B.

Roadway Network

The roadway network under background and cumulative conditions would be the same as existing conditions because there are no planned and funded transportation improvements at the study intersections. The project would not alter the existing intersection lane configurations.

It should be noted that since the COVID pandemic, California Avenue has been closed to vehicular traffic. The closure has been extended to the end of 2023 and will go to City Council for consideration of a permanent closure. The existing and proposed project vehicles would need to utilize adjacent streets (Cambridge Avenue, Sherman Avenue, and Grant Avenue) to access the Evergreen Park area and the project vicinity. Due to the relatively small existing traffic volume and small number of project-generated trips that utilize California Avenue, these adjacent streets (and their respective intersections at El Camino Real) can easily accommodate the rerouted project traffic.

Intersection Levels of Service

The results of the level of service analysis are presented in Table 5. The intersection level of service calculation sheets are included in Appendix C.

Existing Plus Project Conditions

The results of the intersection level of service analysis show that all study intersections would operate at acceptable levels during both the AM and PM peak hours of traffic under existing plus project conditions. Therefore, the project traffic would not cause an adverse effect on traffic operations.

Background and Project Conditions

The results of the intersection level of service analysis show that all study intersections would operate at acceptable levels during both the AM and PM peak hours of traffic under background conditions, with and without the project. Therefore, the project traffic would not cause an adverse effect on traffic operations.

Cumulative and Project Conditions

The results of the intersection level of service analysis show that most study intersections would operate at acceptable levels during both the AM and PM peak hours of traffic, with and without the project. The intersection of El Camino Real/Page Mill Road would operate at a substandard level of service under cumulative conditions. However, because the project would not increase the critical movement delay by more than four seconds, the addition of project traffic would not cause an adverse effect on traffic operations.

Table 5
Intersection Levels of Service Analysis

# Intersection	Peak Hour	Existing							Background							Cumulative						
		No Project			with Project				No Project			with Project				No Project			with Project			
		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		Avg. Delay (sec)	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C
1 Park Boulevard & California Avenue	AM	7.5	A		7.5	A	0.0	0.000	7.5	A		7.5	A	0.0	0.001	7.7	A		7.7	A	0.0	0.001
	PM	8.1	A		8.2	A	0.1	0.002	8.2	A		8.2	A	0.1	0.002	8.6	A		8.7	A	0.1	0.003
2 Park Boulevard & Sherman Avenue*	AM	10.8	B		11.3	B	0.3	0.000	10.8	B		11.3	B	0.3	0.000	11.5	B		12.0	B	0.3	0.000
	PM	10.8	B		14.0	B	0.8	0.000	13.8	B		14.0	B	0.8	0.000	15.1	C		15.4	C	0.8	0.000
3 Park Boulevard & Grant Avenue*	AM	10.8	B		11.0	B	-0.1	0.001	10.8	B		11.0	B	-0.1	0.001	11.2	B		11.5	B	-0.1	0.001
	PM	13.6	B		14.3	B	-0.1	0.008	13.7	B		14.3	B	-0.1	0.008	15.1	C		15.9	C	-0.1	0.010
4 Birch Street & Sheridan Avenue*	AM	28.3	D		29.6	D	0.2	0.026	28.9	D		30.4	D	0.2	0.026	36.7	E		39.1	E	0.3	0.027
	PM	21.7	C		23.0	C	0.5	0.029	21.8	C		23.2	C	0.5	0.030	25.5	D		27.5	D	0.6	0.034
5 Park Boulevard & Page Mill Road	AM	14.9	B		15.4	B	0.1	0.001	15.0	B		15.5	B	0.1	0.001	18.7	B		19.1	B	0.1	0.001
	PM	15.9	B		16.6	B	0.1	0.001	15.9	B		16.6	B	0.1	0.001	21.2	C		21.6	C	0.1	0.001
6 El Camino Real & California Avenue	AM	33.7	C		34.1	C	1.1	0.009	35.5	D		36.1	D	1.1	0.009	33.5	C		34.2	C	1.1	0.009
	PM	30.0	C		30.5	C	0.4	0.005	31.2	C		31.7	C	0.4	0.005	30.8	C		31.2	C	0.3	0.004
7 El Camino Real & Page Mill Road (CMP)	AM	64.4	E		64.6	E	0.3	0.003	64.7	E		64.9	E	0.3	0.003	96.8	F		97.5	F	1.1	0.003
	PM	49.1	D		49.3	D	0.3	0.003	49.5	D		49.7	D	0.3	0.003	86.7	F		87.4	F	1.4	0.003

Bold indicates a substandard level of service.

Note:
* Denotes two-way stop-controlled intersection. The worst leg delay is reported.

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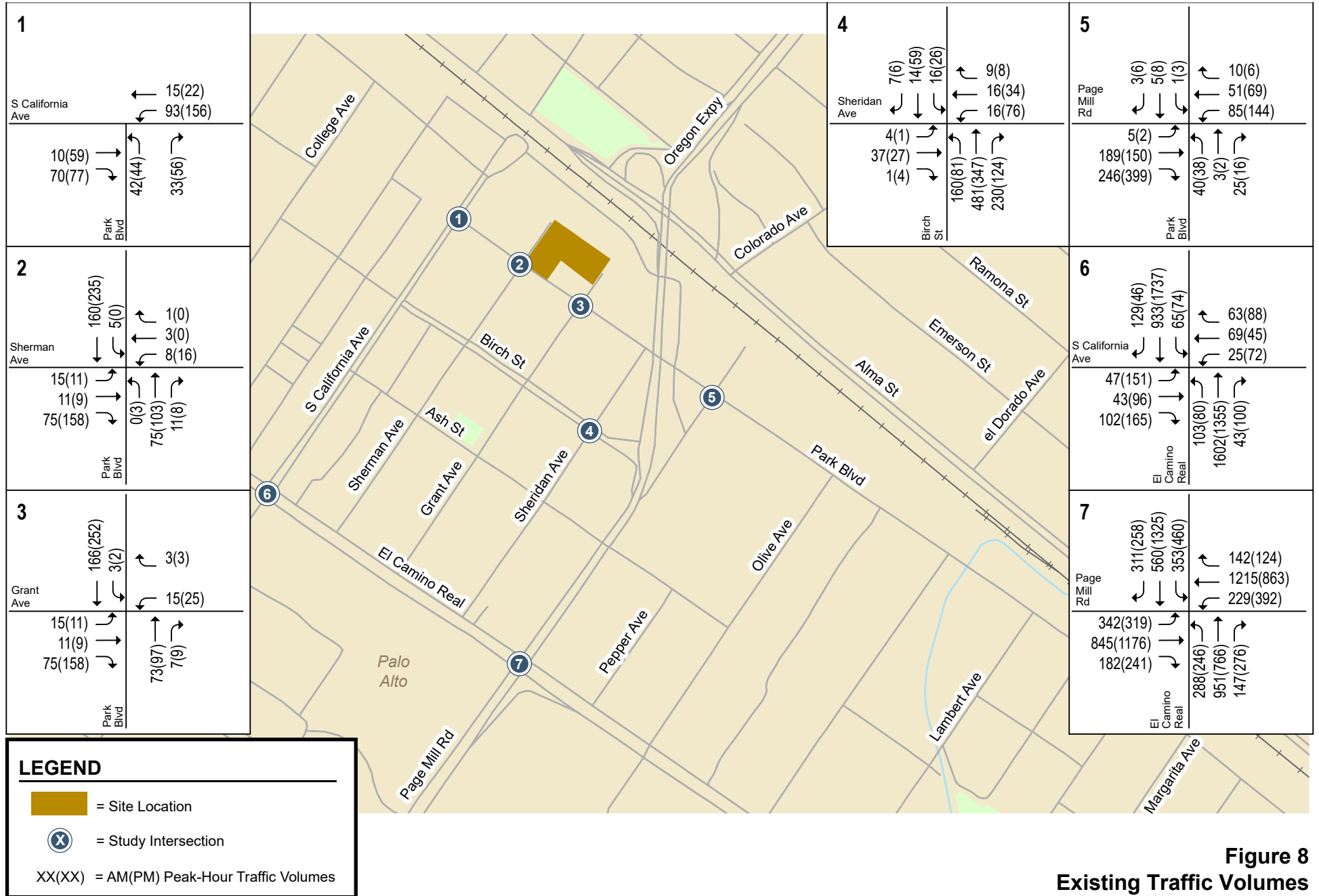
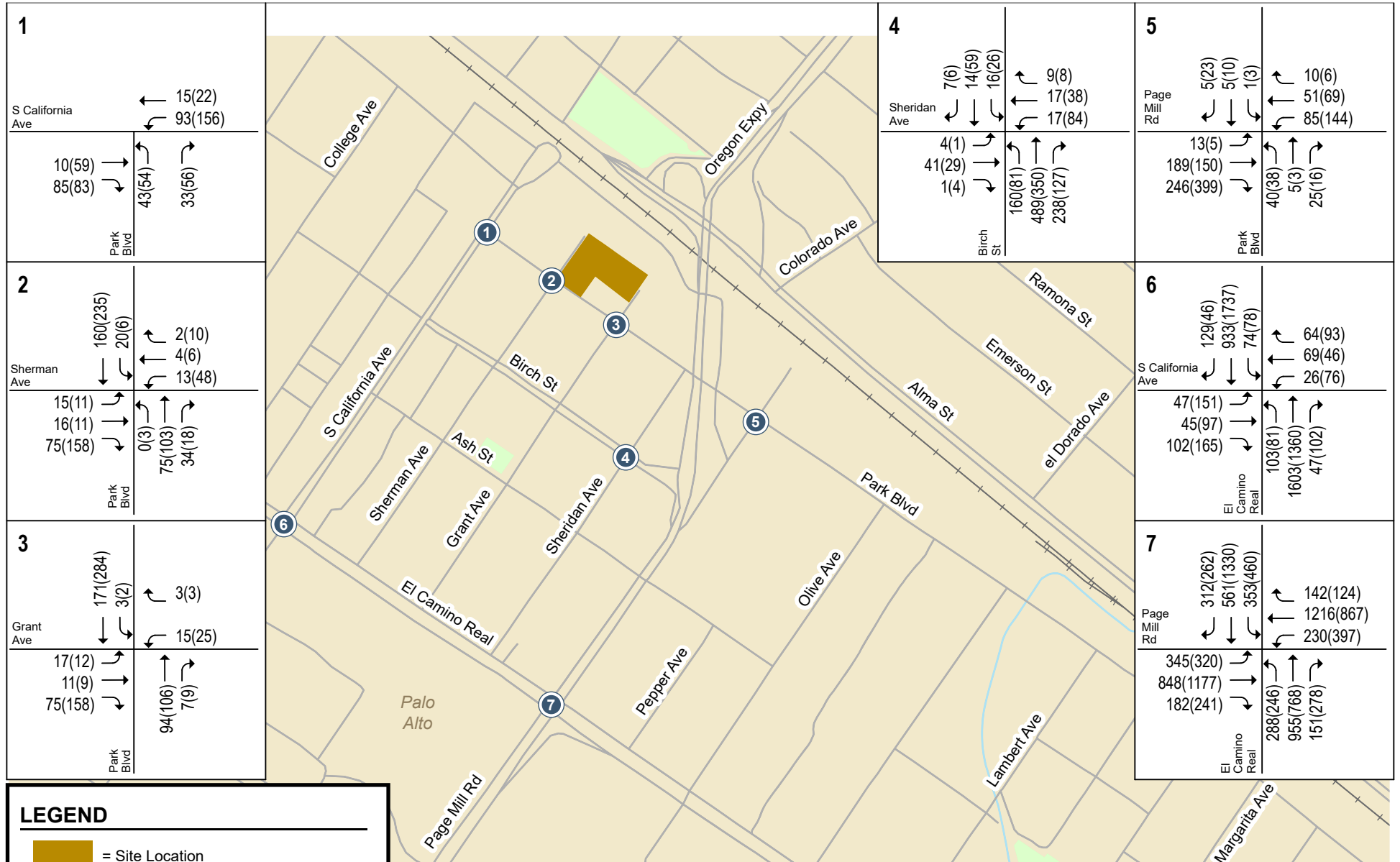


Figure 8
Existing Traffic Volumes

123 Sherman Ave Office TA

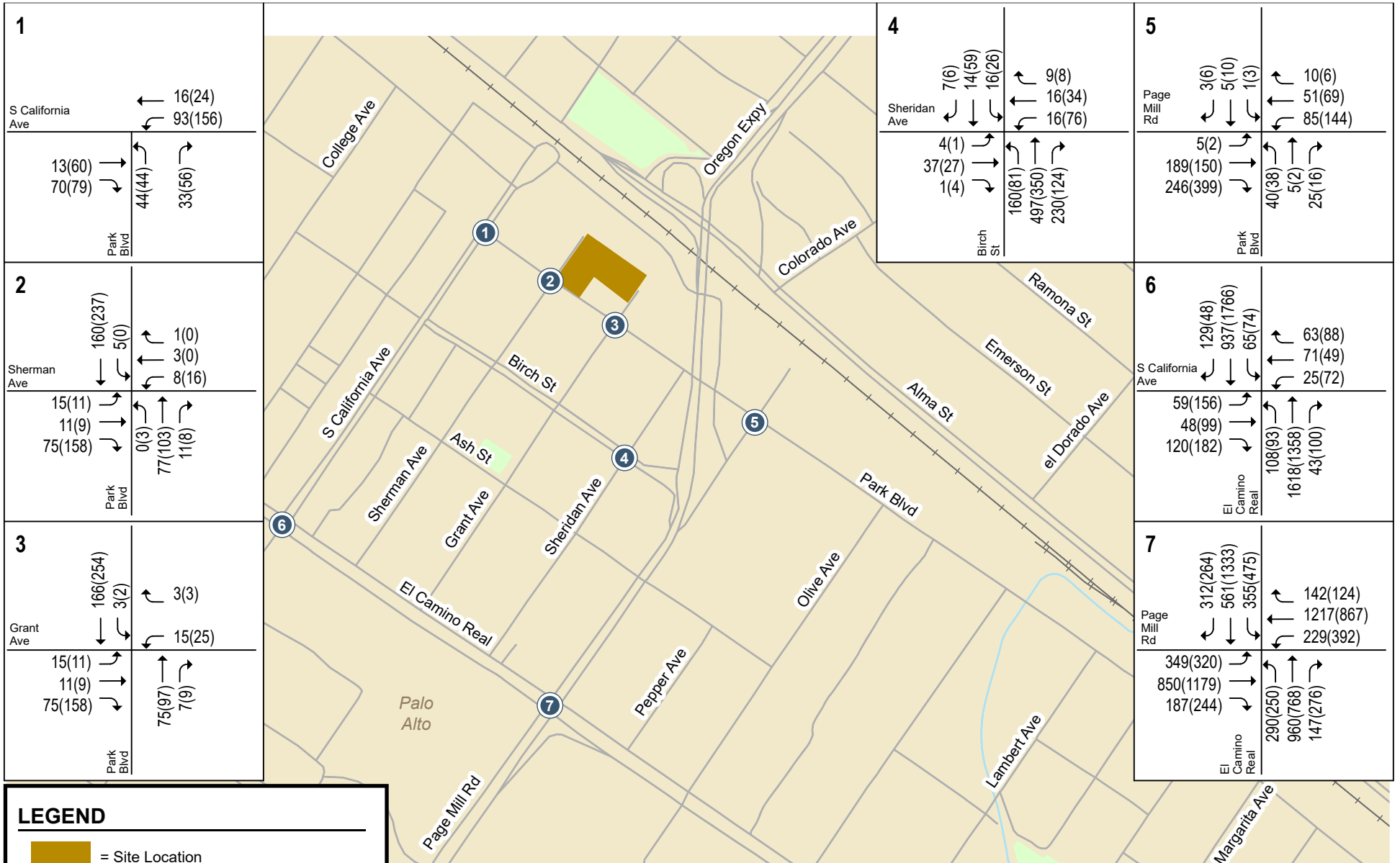


LEGEND

- = Site Location
- X = Study Intersection
- XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 9
Existing Plus Project Traffic Volumes

123 Sherman Ave Office TA



LEGEND

- = Site Location
- X = Study Intersection
- XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Background Traffic Volumes

123 Sherman Ave Office TA

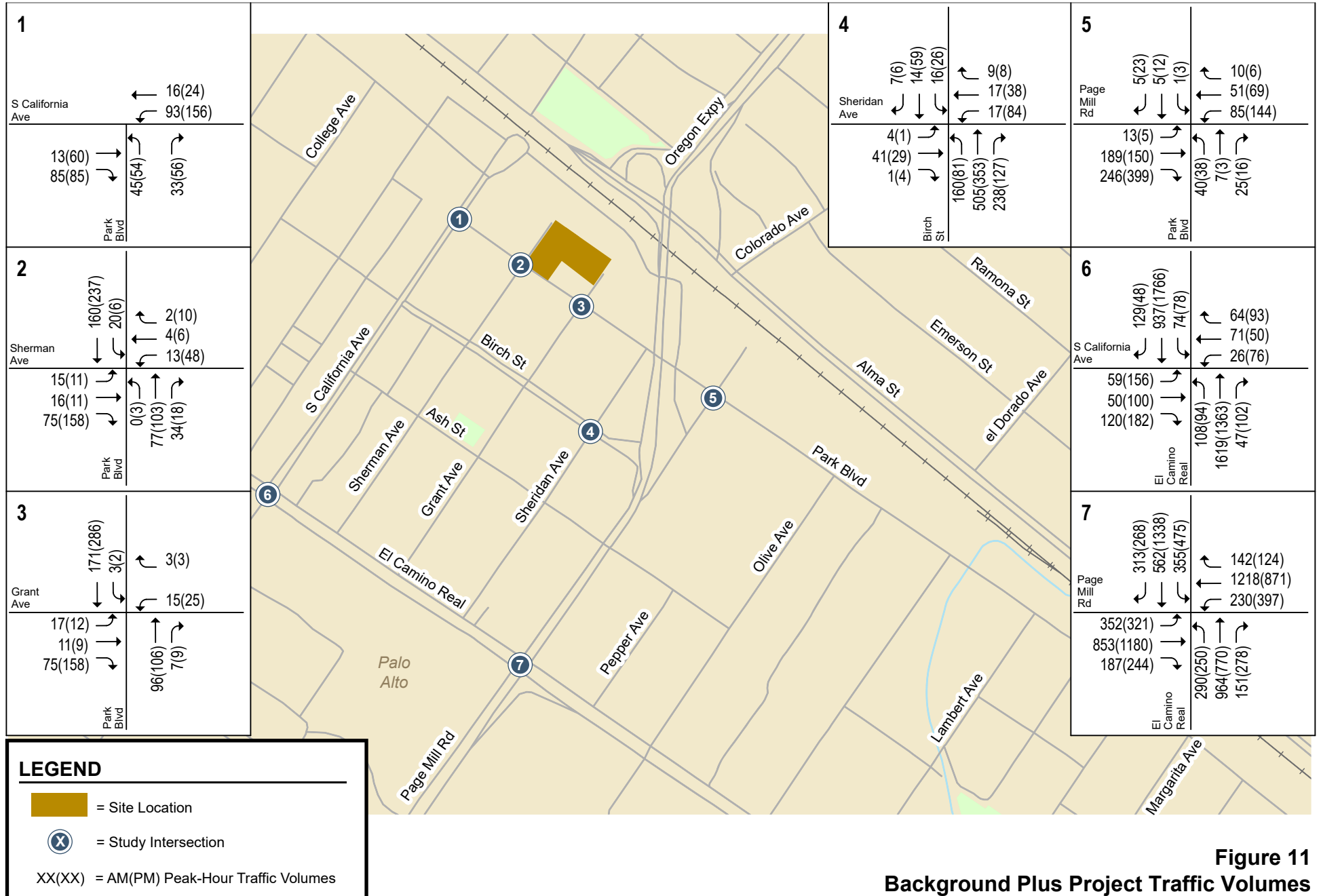


Figure 11
Background Plus Project Traffic Volumes

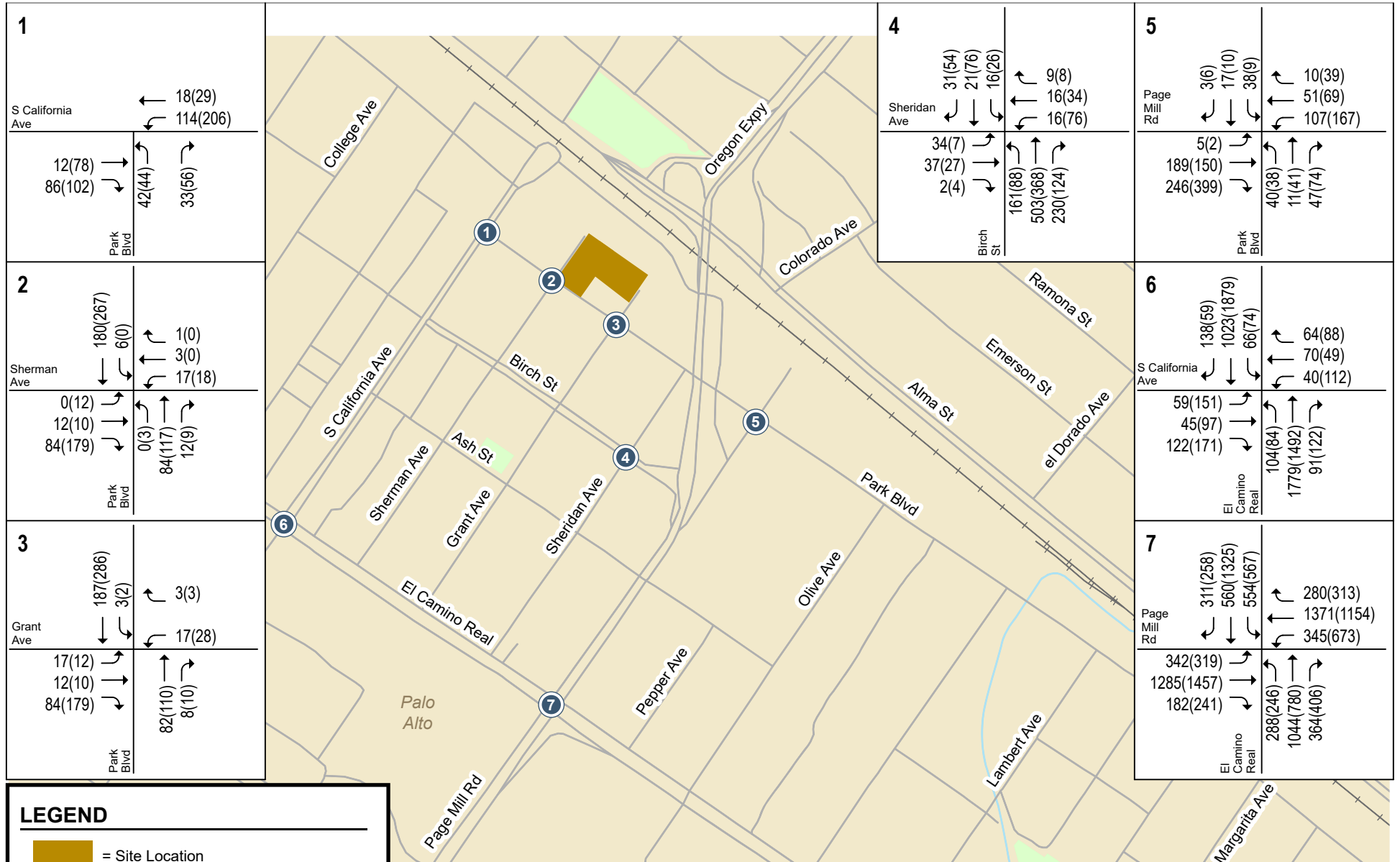
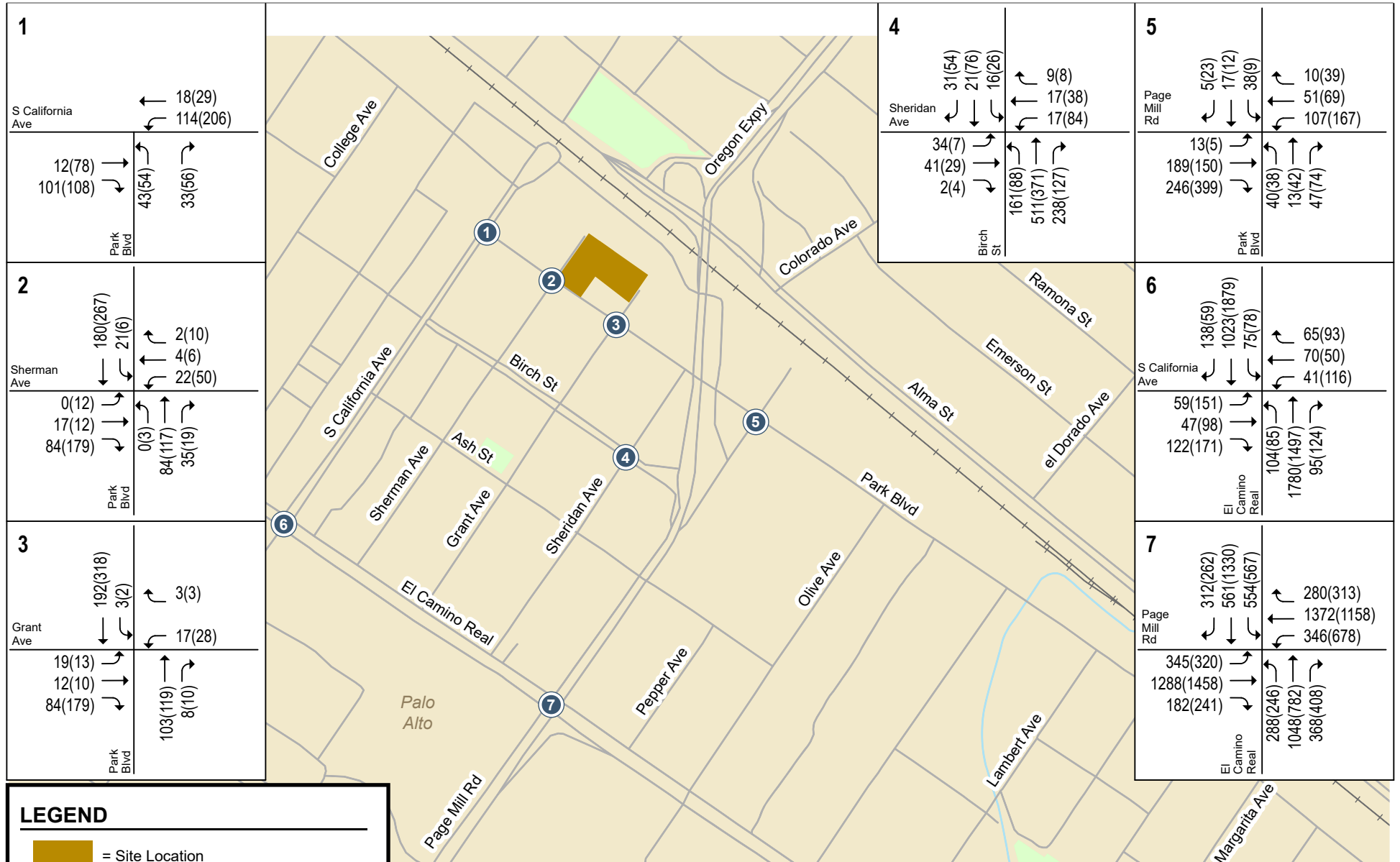


Figure 12
Cumulative No Project Traffic Volumes

123 Sherman Ave Office TA



LEGEND

- = Site Location
- X = Study Intersection
- XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 13
Cumulative Plus Project Traffic Volumes

5. Other Transportation Issues

This chapter presents other transportation issues associated with the project, including:

- Turn pocket queuing analysis
- Signal warrant analysis
- Site access and circulation
- Pedestrians, bicycles, and transit facility assessment
- Parking

The analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Turn Pocket Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis for intersections where the project would add a substantial number of trips to the left-turn movements. This analysis provides a basis for estimating future storage requirements at the intersections under existing, background, and project conditions. Vehicle queues were estimated using a Poisson probability distribution, as described in Chapter 1. The following left-turn movements were evaluated, and the results of the queueing analysis are summarized in Table 6:

- Park Boulevard left turn to westbound California Avenue (PM Peak Hour)
- Park Boulevard left turn to eastbound Sherman Avenue (AM Peak Hour)
- Sherman Avenue left turn to southbound Park Boulevard (PM Peak Hour)

The queueing analysis shows that none of the movements would have queuing issues. The addition of project trips would increase the 95th percentile queue by at most one vehicle and would not cause the estimated maximum vehicle queue to exceed the storage capacity.

Table 6
Queuing Analysis Summary

Measurement	Park Boulevard & Sherman Avenue		
	Park Boulevard & California Avenue	Park Boulevard & Sherman Avenue	
	NBL PM	SBL AM	WBL PM
Existing			
Cycle/Delay ¹ (sec)	7.3	7.4	13.8
Volume (vphpl)	44	5	16
95th % Queue (veh/ln.)	0	0	0
95th % Queue (ft./ln.) ²	0	0	0
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y
Existing Plus Project			
Cycle/Delay ¹ (sec)	7.3	7.4	14.0
Volume (vphpl)	54	20	48
95th % Queue (veh/ln.)	1	0	1
95th % Queue (ft./ln.) ²	25	0	25
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y
Background			
Cycle/Delay ¹ (sec)	7.3	7.4	13.8
Volume (vphpl)	44	5	16
95th % Queue (veh/ln.)	0	0	0
95th % Queue (ft./ln.) ²	0	0	0
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y
Background Plus Project			
Cycle/Delay ¹ (sec)	7.3	7.4	14.0
Volume (vphpl)	54	20	48
95th % Queue (veh/ln.)	1	0	1
95th % Queue (ft./ln.) ²	25	0	25
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y
Cumulative			
Cycle/Delay ¹ (sec)	7.6	7.4	15.1
Volume (vphpl)	44	6	18
95th % Queue (veh/ln.)	0	0	0
95th % Queue (ft./ln.) ²	0	0	0
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y
Cumulative Plus Project			
Cycle/Delay ¹ (sec)	7.7	7.5	15.4
Volume (vphpl)	54	21	50
95th % Queue (veh/ln.)	1	0	1
95th % Queue (ft./ln.) ²	25	0	25
Storage (ft./ln.)	275	275	100
Adequate (Y/N)	Y	Y	Y

Notes:

NBL = northbound left movement, WBL = westbound left movement.

¹ Vehicle queue calculations based on cycle length for signalized intersections and control delay for unsignalized intersections.

² Assumes 25 Feet Per Vehicle Queued.

Peak-Hour Signal Warrant

A signal warrant check (*MUTCD 2014 edition, Section 4C, Warrant 3*) was conducted for the unsignalized study intersections based on the peak-hour traffic warrant. The minor street threshold is 100 vehicles for a single lane minor road. The intersection of Birch Street/Sheridan Avenue meets this threshold, and the peak-hour signal warrant was checked for this intersection.

For the signal warrant analysis, Birch Street was considered the major street, while Sheridan Avenue was considered the minor road. The peak hour signal warrant would not be met for either peak hour under any scenario, with or without the project. The peak-hour signal warrant calculation sheets can be found in Appendix D.

Site Access and Circulation

A review of the project site plan was performed to determine if adequate site access and on-site circulation would be provided and to identify any access or circulation issues that should be improved. This review is based on the site plan prepared by Korth Sunseri Hagey Architects, dated February 4, 2022, presented on Figures 14 through 16 and in accordance with generally accepted traffic engineering standards.

Vehicle Site Access

Vehicle access to and from the project site would be provided via a full access driveway on Sherman Avenue. The project driveway would measure 20 feet wide which meets the City's minimum width requirement of 20 feet, as described in the City of Palo Alto's Zoning Ordinance, Section 36.32.80I.

Sight Distance at Project Driveway

The proposed driveway location was evaluated to determine if the sight distance at the driveway would be adequate. Adequate sight distance reduces the likelihood of a collision at the driveways and provides drivers with the ability to locate sufficient gaps in traffic to exit a driveway. Sight distance of a driveway is evaluated based on the stopping sight distance recommended by Caltrans for a given design speed.

The project driveway would be located approximately 30 feet west of the dead end on Sherman Avenue. Conversely, the driveway is located approximately 130 feet east of the Park Boulevard/Sherman Avenue intersection. 130 feet of sight distance is adequate for roadway speeds up to 20 mph. Vehicles turning from Park Boulevard would be traveling at slow speeds. Vehicles from Sherman Avenue, north of Park Boulevard would be stopped at the intersection before proceeding through. Therefore, sight distance is adequate if exiting drivers are able to see the eastbound lane from the intersection.

According to the site plan, the landscape plan shows street trees would be added along the project frontage on Sherman Avenue. The street trees should have a high canopy and not obstruct the view of drivers exiting the project driveway. The trees should be maintained so that the vision of exiting drivers is not obstructed. On-street parking is prohibited on Sherman Avenue along the project frontage.

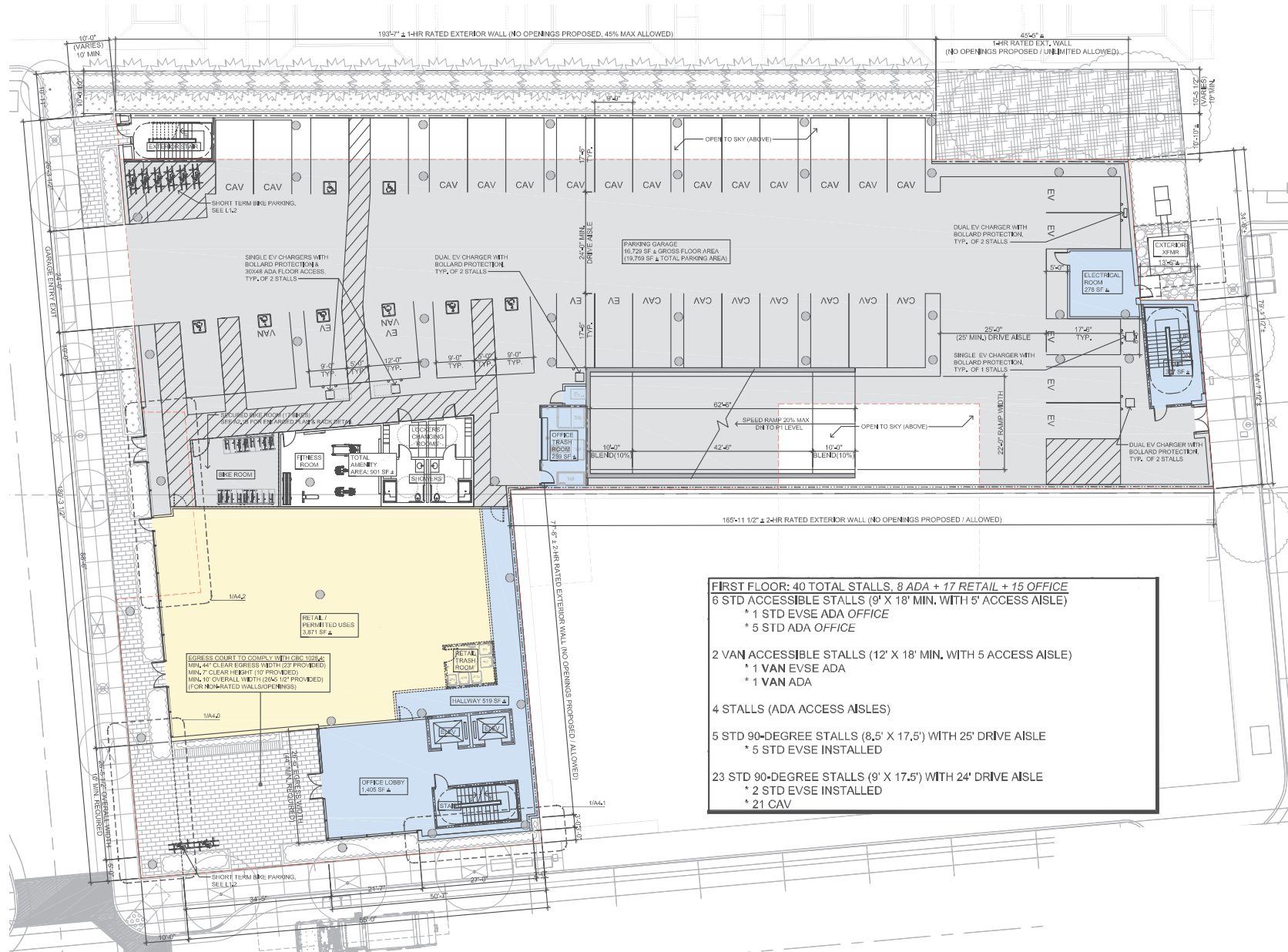


Figure 14
Ground Level Site Plan

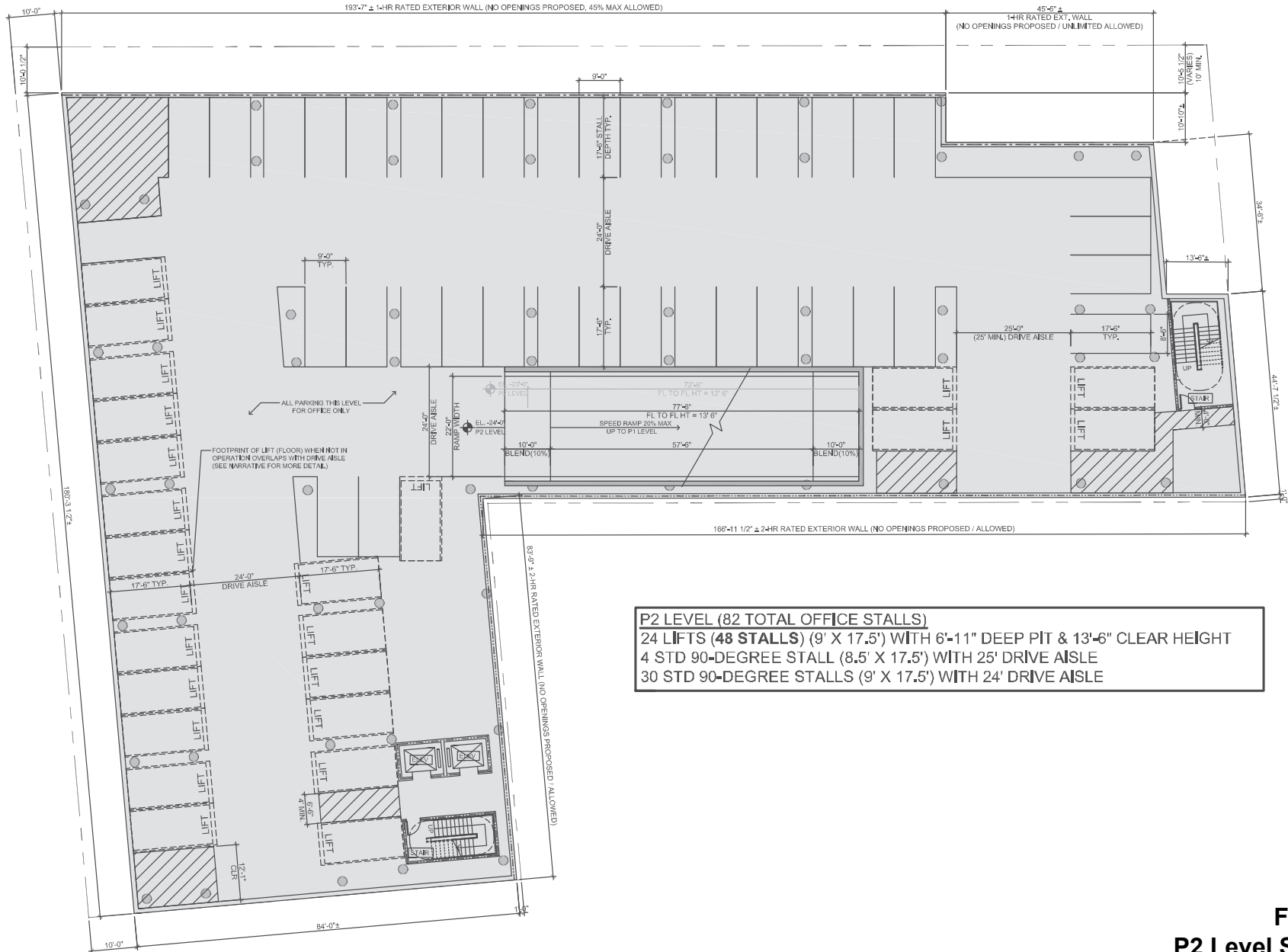


Figure 16
P2 Level Site Plan

Project Driveway Operations

The estimated trips occurring at the project driveway would be 63 inbound trips and 10 outbound trips during the AM peak hour and 22 inbound trips and 65 outbound trips during the PM peak hour (see Figure 14). This equates to approximately one inbound vehicle every 57 seconds in the AM peak hour and one outbound vehicle every 55 seconds during the PM peak hour. There are several parking spaces immediately inboard of the driveway. Inbound vehicles might need to stop while waiting for parked vehicles to back out of those spaces. However, simultaneous occurrences of vehicles entering the driveway at the same time as vehicles exiting these spaces would be rare. Therefore, operational issues for inbound and outbound traffic are not expected to occur at the driveway.

Vehicle On-Site Circulation

The project would provide 90-degree uniform parking stalls throughout the garage. The garage would have parking at ground level and two underground levels. The ramp connecting the levels would have a 20% grade with transition slopes of 10% at either end so that vehicles would not “bottom out” entering or exiting the ramps.

The project proposes internal drive aisles measuring 24 to 26 feet in width, providing adequate width for two-way operation and for vehicles to back out of parking spaces.

On-site vehicle circulation was also evaluated to identify whether there are dead-end aisles within the parking garage. Dead-end aisles are undesirable because drivers can enter the aisle, and upon discovering that there is no available parking, must back out or conduct three-point turns. The site plan shows dead-end aisles within the basement levels of the parking garage. However, adequate turn-around space has been provided at the end of each aisle.

The site plan shows mechanical puzzle lift stackers. Unless the stacker spaces are assigned, all employees should be instructed in the use of the mechanical stackers. In addition, signage and instructions should be posted outside of the stackers with contact information in case of malfunction.

The project site plans do not specify the model or dimensions of the mechanical vehicle stackers. The project applicant should verify that the design of the mechanical vehicle stackers would provide adequate clearance for large vehicles.

Parking Stall Dimensions

Parking spaces are shown to be a minimum of 17.5 feet long by 9 feet wide. According to the City of Palo Alto Zoning Code all standard parking stalls should be at least 8.5 feet in width by 17.5 feet in length. The proposed parking space dimensions would meet the City requirements.

Recommendation: Signage and instructions should be posted outside of the stackers with contact information in case of malfunction.

Truck Access and Circulation

Emergency response vehicles would access the project site along its frontages on Park Boulevard, Sherman Avenue, and Grant Avenue.

Based on the Palo Alto Zoning Code, Section 18.52.040, the project is required to provide one loading space for the office portion of the project. The site plan does not show a loading space. The zoning code allows city staff to waive the requirement of one off-street loading space provided that the project has alternative means for loading and unloading activities. The project applicant should discuss with city staff whether an off-street loading space would be required.

The project would generate a small number of delivery vehicles. Since the project site plans do not show an off-street loading space, the project should coordinate with the city to stripe a loading space along Park Boulevard. The site plan proposes a 40-foot-long loading space along Park Boulevard that can be used for deliveries and staging for retail trash bins. The loading space could be used for the small number of delivery vehicles as well as passenger pick-ups and drop-offs.

The project would provide a trash room within the ground level of the parking garage for the office use. The retail space would have its own trash room in the rear of the space. Since garbage collection vehicles could not access the parking garage, trash bins for the office use would need to be wheeled out to Grant Avenue on garbage collection days. The site plan shows a set of doors near the trash room leading onto Grant Avenue. Garbage bins would need to be wheeled through the ground level of the garage to access the doors to Grant Avenue. Similarly, trash bins from the trash room in the retail space would be wheeled out to Park Boulevard on trash garbage collection days.

Recommendation: The project applicant should discuss with city staff whether an off-street loading space would be required.

Recommendation: The project applicant should coordinate with city staff to stripe a loading space on Park Boulevard near the project entrance.

Pedestrian, Bicycle, and Transit Facility Assessment

The following describes the existing and future transit, pedestrian and bicycle facilities that serve the site and evaluates whether appropriate bicycle and pedestrian access and transit service are provided between the site and nearby destinations. As discussed below, the project would not cause any adverse effects to the existing or planned pedestrian, bicycle, and transit facilities.

Pedestrian Facilities

Pedestrian facilities in the study area consist of sidewalks and crosswalks. A complete network of sidewalks is present along all of the surrounding streets. Crosswalks with pedestrian signal heads are located at all of the signalized study intersections in the study area.

Pedestrian access to the project site is provided via sidewalks on Sherman Avenue, Park Boulevard, Grant Avenue, and surrounding streets. The project would provide a 7 to 8.5-foot sidewalk/paseo along its frontage on Sherman Avenue. Additional landscaping (street trees) between the sidewalk and the street would be planted. The site plan shows several columns located within the paseo area. The sidewalk would still provide adequate space for ADA access.

The project would install landscaping along its frontages on Park Boulevard and Grant Avenue and install street trees between the sidewalk and the landscaping. The sidewalks along Park Boulevard and Grant Avenue measure 4 feet in width, providing adequate space for ADA access. The project would add street trees and landscaping to both frontages, which would increase pedestrian comfort.

According to the *2030 Comprehensive Plan*, a neighborhood is walkable when an area is designed and constructed in such a way to provide and encourage pleasant, easy, and efficient pedestrian movement. Convenient walking distance is considered to be a half mile to a mile, a walk that would take 10 to 20 minutes. Within a half mile of the project site there are many restaurants, retail stores, and bus stops along California Avenue and El Camino Real. Similarly, the California Avenue Caltrain station is an 800-foot walk from the project site.

ADA curb ramps are present along all the intersections between the project site and California Avenue. Continuous sidewalks and ADA curb ramps are present at all intersections along California Avenue between the Caltrain Station and El Camino Real.

Bicycle Facilities

There are bike lanes on Park Boulevard that connect cyclists from the project site to the surrounding areas. California Avenue, between the Caltrain station and El Camino Real, is a designated bike route. According to the *Palo Alto Bike and Pedestrian Transportation Plan*, a bicycle boulevard is planned along Park Boulevard. Additional planned bicycle facilities include a Class I multi-use path along California Avenue, between the Caltrain station and El Camino Real, an enhanced bikeway along California Avenue, west of El Camino Real and east of the Caltrain station, and Class II bike lanes along El Camino Real between Page Mill Road and Maybell Avenue. The project design is consistent with the planned bicycle boulevard on Park Boulevard as the project does not plan to make changes to the roadway along the project frontage on Park Boulevard.

The project would provide secure bicycle storage for employees in a bike room located near the southwest corner of the project site. The bike room would be accessed by going through the garage from Sherman Avenue or via a door along Grant Avenue. The site plan also shows bike racks along the frontage on Sherman Avenue.

It is expected that the project would generate some bicycle trips, which could utilize the existing bike lanes on surrounding streets to get to nearby residential areas. According to the 2019 American Community Survey for the Census, the proportion of Palo Alto residents that bicycle to work is about 10 percent, which equates to 7-8 new bicycle trips during the AM and PM peak hours for the project.

Transit Services

The project site is served by VTA Routes 22, 89, and 522 with bus stops located at the California Avenue Caltrain station and along El Camino Real. The site is also served by Caltrain, which is an 800-foot walk from the project site.

It is expected that the project would generate some transit trips to residential areas and other nearby commercial destinations. According to the 2019 American Community Survey for the Census, approximately 8 percent of commute trips in Palo Alto use public transit to get to work. Applying an 8 percent transit mode share equates to 6-7 new transit riders during the AM and PM peak hours. This new ridership generated by the project could be accommodated by the existing services.

Due to the relatively small number of new vehicle trips generated by the project, the project would not cause a noticeable change in transit travel time and vehicle delay for the bus routes in the study area.

Parking

Vehicle Parking

The vehicle parking requirements for the project were calculated based on the City of Palo Alto Zoning Code, which require one space per 250 s.f. of gross floor area of office space and one space per 200 s.f. of retail space. Therefore, the project requires 213 parking spaces, based on 48,074 s.f. of office space and 3,871 s.f. of retail space. The project would provide 172 parking spaces. Thus, the project would not meet the City's requirement. The project could implement a Transportation Demand Management (TDM) Plan to reduce the parking requirement by up to 20%. With the implementation of a TDM Plan, the project would be required to provide 171 parking spaces, and the proposed number of parking spaces would meet the City's requirement.

Recommendation: The project should implement a Transportation Demand Management (TDM) Plan to reduce its parking demand and to encourage alternative transportation modes.

Bicycle Parking

The bicycle parking requirements for the project were calculated based on the City of Palo Alto Zoning Code. The bicycle parking requirement is one secure bicycle parking space per 2,500 s.f. of office space and one bicycle parking space per 2,000 s.f. of retail space. For the office use, 80 percent of the bicycle parking spaces are required to be long-term spaces, and 20 percent of the spaces are required to be short-term spaces. For the retail use, 20 percent must be long-term spaces, and 80 percent must be long-term spaces.

The project would be required to provide 17 bicycle parking spaces in the secure bike room (16 long-term spaces for the office use and 1 space for the retail use) and 6 short-term bike racks (4 short-term spaces for the office use and 2 spaces for the retail use). The site plan shows 17 long-term bicycle parking spaces in the secure bike room and 16 short-term bicycle parking spaces on eight dual-bike racks, meeting the City's requirements.

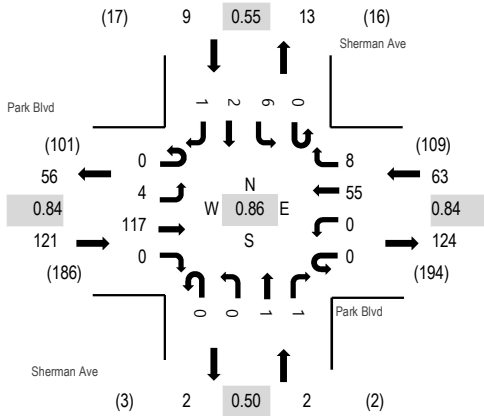
**123 Sherman Avenue
Transportation Analysis**

Technical Appendices

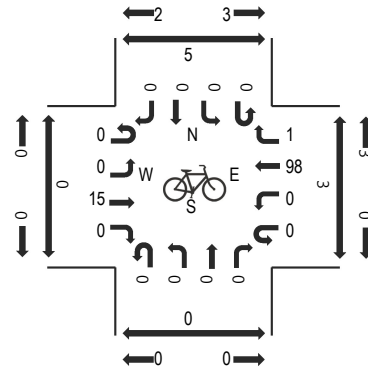
Appendix A

Traffic Counts

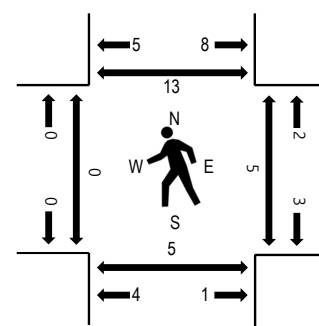
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

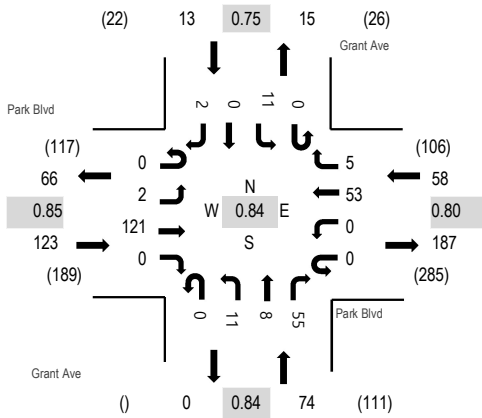
Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Sherman Ave Northbound				Sherman Ave Southbound				Total	Rolling Hour	Pedestrian Crossings						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North			
7:00 AM	0	0	7	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	15	119	1	0	1	0
7:15 AM	0	0	16	0	0	0	14	0	0	0	0	0	0	1	0	1	32	161	0	1	0	3	3		
7:30 AM	0	0	19	0	0	0	9	1	0	0	0	0	0	1	0	0	30	172	0	0	0	3	3		
7:45 AM	0	0	23	0	0	0	12	2	0	0	0	0	0	3	0	2	42	194	0	0	0	3	3		
8:00 AM	0	0	36	0	0	0	18	1	0	0	0	1	0	1	0	0	57	195	0	1	2	1	1		
8:15 AM	0	1	24	0	0	0	13	3	0	0	0	0	0	0	1	1	43		0	0	3	1	1		
8:30 AM	0	0	34	0	0	0	14	1	0	0	0	0	0	3	0	0	52		0	3	0	3	3		
8:45 AM	0	3	23	0	0	0	10	3	0	0	1	0	0	2	1	0	43		0	1	0	8	8		

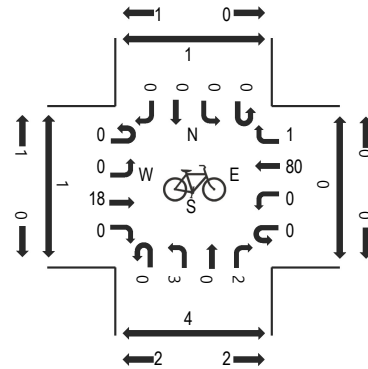
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	2	0	0	1	0	0	0	2	0	5
Lights	0	4	111	0	0	0	49	6	0	0	0	0	0	6	0	1	177
Mediums	0	0	6	0	0	0	6	0	0	0	0	1	0	0	0	0	13
Total	0	4	117	0	0	0	55	8	0	0	1	1	0	6	2	1	195

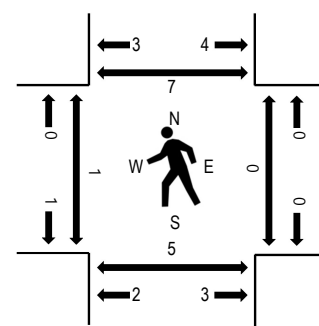
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

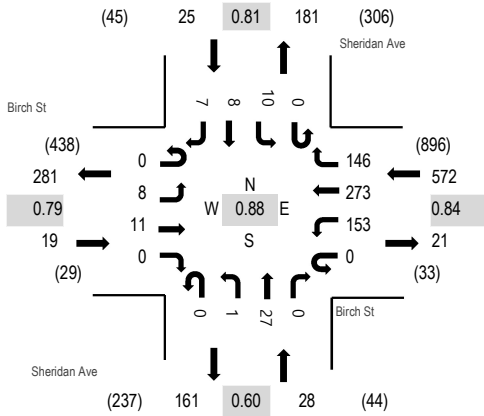
Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Grant Ave Northbound				Grant Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	9	0	0	0	8	2	0	1	0	5	0	1	0	0	26	161	3	0	1	0
7:15 AM	0	0	16	0	0	0	8	1	0	4	0	4	0	3	0	0	36	215	0	0	1	1
7:30 AM	0	0	18	0	0	0	7	1	0	1	0	8	0	1	0	2	38	241	2	0	0	4
7:45 AM	0	1	27	0	0	0	12	0	0	2	3	11	0	5	0	0	61	268	0	0	0	3
8:00 AM	0	1	35	0	0	0	18	0	0	5	2	15	0	2	0	2	80	267	0	0	2	0
8:15 AM	0	0	24	0	0	0	14	5	0	2	1	13	0	3	0	0	62		0	0	1	2
8:30 AM	0	0	35	0	0	0	9	0	0	2	2	16	0	1	0	0	65		1	0	2	2
8:45 AM	0	1	22	0	0	0	17	4	0	3	2	9	0	2	0	0	60		3	1	4	4

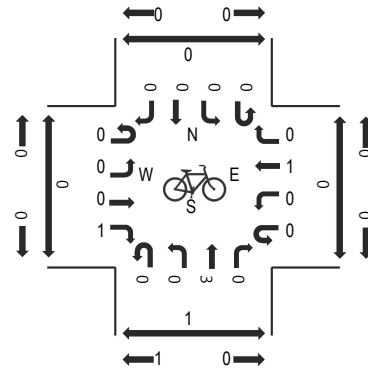
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Lights	0	2	113	0	0	0	49	5	0	8	8	52	0	11	0	2	250
Mediums	0	0	8	0	0	0	4	0	0	2	0	3	0	0	0	0	17
Total	0	2	121	0	0	0	53	5	0	11	8	55	0	11	0	2	268

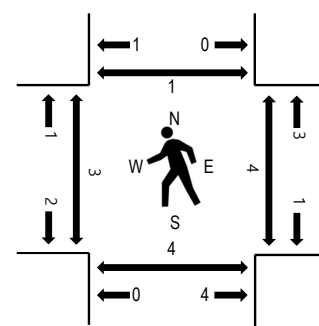
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

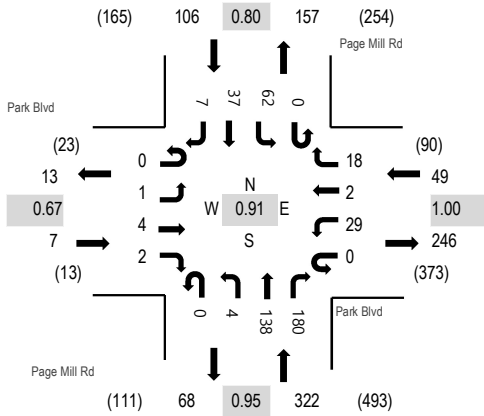
Traffic Counts - Motorized Vehicles

Interval Start Time	Birch St Eastbound				Birch St Westbound				Sheridan Ave Northbound				Sheridan Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	0	0	0	8	21	18	0	0	3	0	0	0	1	1	55	370	0	0	0	0
7:15 AM	0	0	0	0	0	9	38	17	0	0	7	0	0	4	2	0	77	461	2	1	1	0
7:30 AM	0	2	1	0	0	21	35	28	0	0	1	0	0	1	1	2	92	530	0	3	1	0
7:45 AM	0	2	2	0	0	33	57	39	0	0	5	0	0	4	1	3	146	608	0	0	1	0
8:00 AM	0	1	3	0	0	37	48	37	0	0	12	0	0	0	6	2	146	644	0	2	2	0
8:15 AM	0	2	4	0	0	32	62	34	0	0	8	0	0	2	1	1	146		1	1	2	0
8:30 AM	0	3	2	0	0	41	76	35	0	0	4	0	0	7	0	2	170		1	0	0	0
8:45 AM	0	2	2	0	0	43	87	40	0	1	3	0	0	1	1	2	182		1	1	0	1

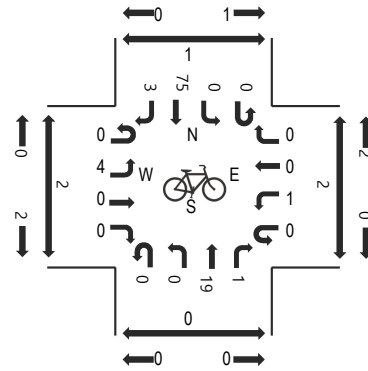
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Lights	0	8	10	0	0	150	266	144	0	1	27	0	0	6	8	6	626
Mediums	0	0	1	0	0	3	5	2	0	0	0	0	0	4	0	1	16
Total	0	8	11	0	0	153	273	146	0	1	27	0	0	10	8	7	644

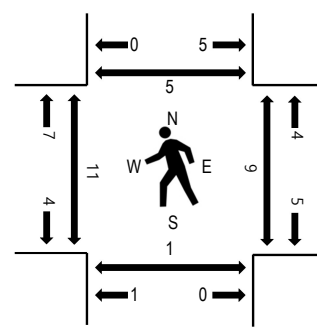
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Page Mill Rd Northbound				Page Mill Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	1	0	0	4	0	1	0	0	14	13	0	7	2	2	44	295	1	1	0	0
7:15 AM	0	0	2	0	0	5	0	2	0	0	19	22	0	7	6	0	63	384	3	1	0	0
7:30 AM	0	0	2	1	0	8	2	5	0	2	20	25	0	11	1	2	79	445	7	1	0	0
7:45 AM	0	0	1	0	0	4	1	2	0	3	37	39	0	12	10	0	109	484	6	1	0	4
8:00 AM	0	0	1	0	0	10	0	4	0	0	36	49	0	20	10	3	133	466	1	2	0	1
8:15 AM	0	1	1	1	0	8	1	5	0	1	29	45	0	19	9	4	124		2	2	0	0
8:30 AM	0	0	1	1	0	7	0	7	0	0	36	47	0	11	8	0	118		2	4	1	0
8:45 AM	0	0	0	0	0	7	0	7	0	0	29	27	0	10	9	2	91		5	3	1	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	4	2	0	26	2	18	0	4	136	176	0	62	37	4	472
Mediums	0	0	0	0	0	3	0	0	0	0	2	4	0	0	0	3	12
Total	0	1	4	2	0	29	2	18	0	4	138	180	0	62	37	7	484

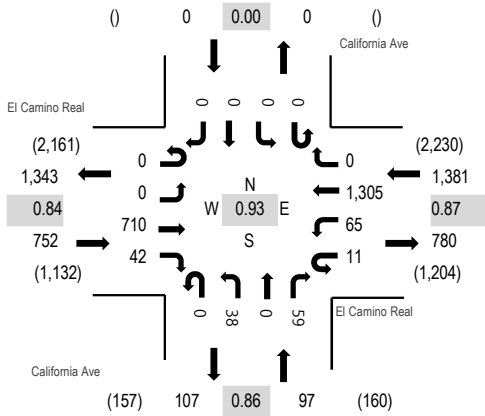
Location: 6 California Ave & El Camino Real AM

Date: Tuesday, March 8, 2022

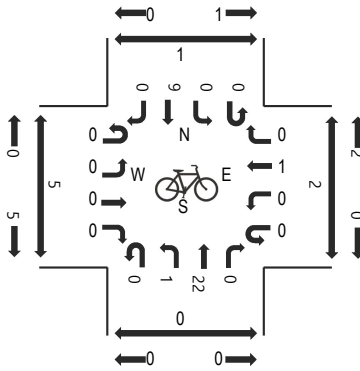
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

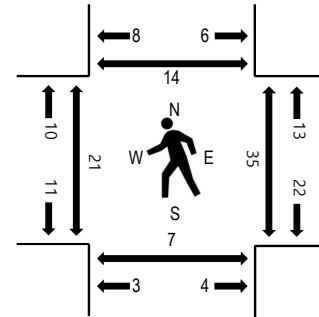
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

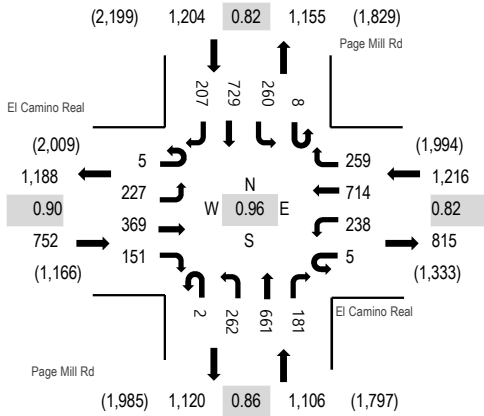
Traffic Counts - Motorized Vehicles

Interval Start Time	El Camino Real Eastbound				El Camino Real Westbound				California Ave Northbound				California Ave Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
7:00 AM	0	0	55	4	2	6	139	0	0	0	1	0	7	0	0	0	0	214	1,292	3	5	2	0
7:15 AM	0	0	90	5	3	6	162	0	0	0	4	0	10	0	0	0	0	280	1,663	3	6	3	2
7:30 AM	0	0	99	2	3	15	220	0	0	0	5	0	12	0	0	0	0	356	1,931	2	7	0	2
7:45 AM	0	0	121	4	3	8	282	0	0	0	5	0	19	0	0	0	0	442	2,070	9	8	1	4
8:00 AM	0	0	217	8	3	13	319	0	0	0	4	0	21	0	0	0	0	585	2,230	3	3	3	2
8:15 AM	0	0	161	9	3	19	326	0	0	0	10	0	20	0	0	0	0	548		8	12	1	6
8:30 AM	0	0	160	12	1	17	281	0	0	0	17	0	7	0	0	0	0	495		4	9	1	2
8:45 AM	0	0	172	13	4	16	379	0	0	0	7	0	11	0	0	0	0	602		6	11	2	4

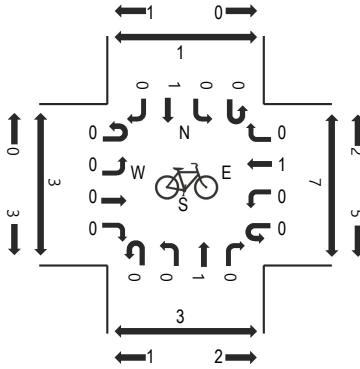
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
Articulated Trucks	0	0	11	0	0	0	10	0	0	0	0	0	0	0	0	0	21	
Lights	0	0	668	41	11	62	1,268	0	0	0	37	0	56	0	0	0	0	2,143
Mediums	0	0	31	1	0	3	27	0	0	0	1	0	3	0	0	0	0	66
Total	0	0	710	42	11	65	1,305	0	0	0	38	0	59	0	0	0	0	2,230

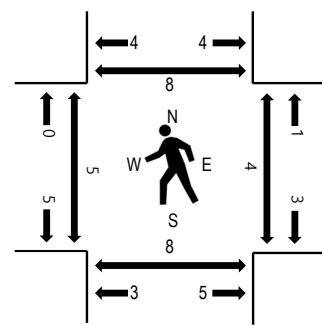
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

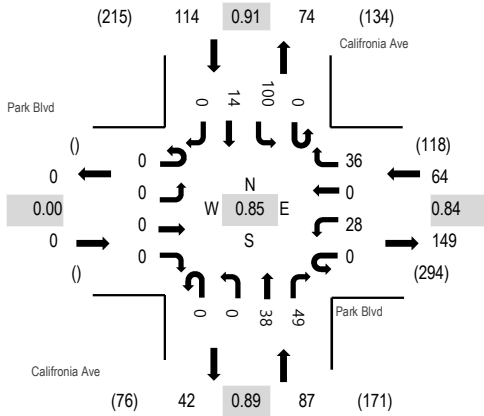
Traffic Counts - Motorized Vehicles

Interval Start Time	El Camino Real Eastbound				El Camino Real Westbound				Page Mill Rd Northbound				Page Mill Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	16	37	7	0	24	68	34	0	44	55	16	0	36	139	32	508	2,878	0	0	0	0
7:15 AM	2	29	47	23	2	34	99	37	0	36	76	22	1	54	175	36	673	3,438	1	1	4	2
7:30 AM	1	35	58	27	1	41	146	42	0	66	96	38	2	42	136	25	756	3,876	0	0	4	0
7:45 AM	2	54	56	20	0	41	153	56	1	70	136	35	5	74	197	41	941	4,146	0	3	4	3
8:00 AM	2	66	106	36	1	43	148	64	0	59	211	51	1	58	170	52	1,068	4,278	2	3	3	2
8:15 AM	1	64	91	26	1	68	213	91	0	49	177	48	2	75	159	46	1,111		0	1	2	3
8:30 AM	1	48	99	43	2	67	212	58	0	76	109	38	3	61	168	41	1,026		1	0	0	3
8:45 AM	1	49	73	46	1	60	141	46	2	78	164	44	2	66	232	68	1,073		2	0	3	0

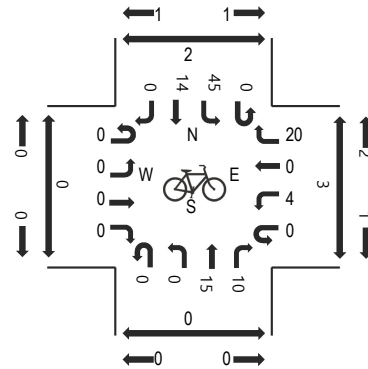
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	11	0	0	0	7	0	0	0	0	1	0	0	3	0	22
Lights	5	222	338	144	5	237	698	252	2	257	639	176	8	253	698	196	4,130
Mediums	0	5	20	7	0	1	9	7	0	5	22	4	0	7	28	11	126
Total	5	227	369	151	5	238	714	259	2	262	661	181	8	260	729	207	4,278

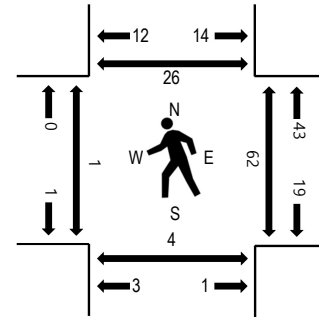
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

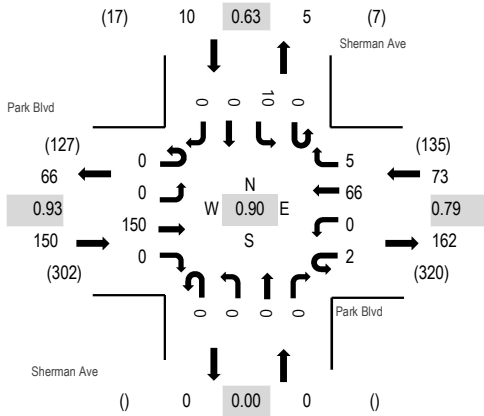
Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				California Ave Northbound				California Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	4	0	8	0	0	6	17	0	21	3	0	59	251	1	21	4	2
4:15 PM	0	0	0	0	0	4	0	8	0	0	6	12	0	24	7	0	61	257	3	21	4	7
4:30 PM	0	0	0	0	0	8	0	11	0	0	15	12	0	28	4	0	78	265	0	21	2	4
4:45 PM	0	0	0	0	0	8	0	7	0	0	4	10	0	23	1	0	53	239	0	20	2	8
5:00 PM	0	0	0	0	0	3	0	8	0	0	11	14	0	23	6	0	65	253	0	8	0	8
5:15 PM	0	0	0	0	0	9	0	10	0	0	8	13	0	26	3	0	69		1	13	0	6
5:30 PM	0	0	0	0	0	2	0	12	0	0	4	14	0	17	3	0	52		0	7	0	5
5:45 PM	0	0	0	0	0	8	0	8	0	0	8	17	0	23	3	0	67		0	21	0	8

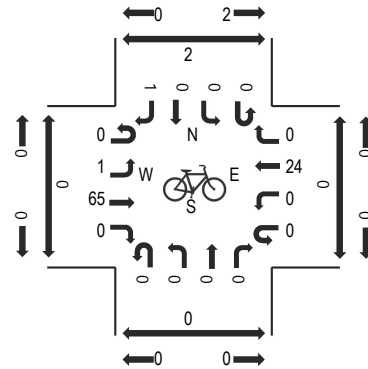
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	0	28	0	34	0	0	38	49	0	97	14	0	260
Mediums	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	5
Total	0	0	0	0	0	28	0	36	0	0	38	49	0	100	14	0	265

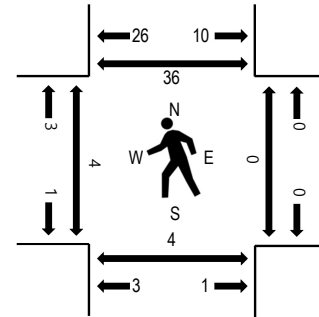
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

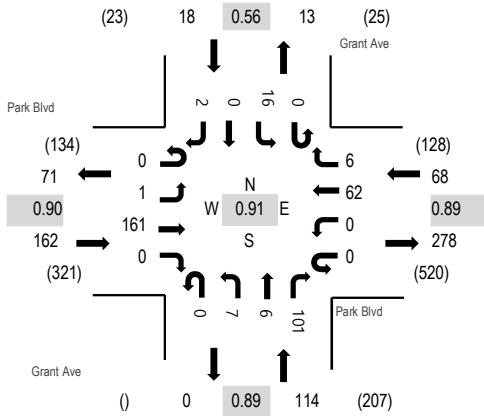
Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Sherman Ave Northbound				Sherman Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	39	0	0	0	16	0	0	0	0	0	0	3	0	1	59	221	0	2	0	6
4:15 PM	0	0	38	0	0	0	11	2	0	0	0	0	0	1	0	0	52	214	2	0	0	4
4:30 PM	0	0	41	0	0	0	16	0	0	0	0	0	0	1	0	0	58	227	0	0	1	4
4:45 PM	0	0	34	0	0	0	17	0	0	0	0	0	0	1	0	0	52	220	1	2	2	12
5:00 PM	0	0	37	0	0	0	13	2	0	0	0	0	0	0	0	0	52	233	2	0	3	4
5:15 PM	0	0	39	0	0	0	22	1	0	0	0	0	0	3	0	0	65		1	0	0	11
5:30 PM	0	0	32	0	0	0	15	1	0	0	0	0	0	3	0	0	51		0	0	0	9
5:45 PM	0	0	42	0	2	0	16	1	0	0	0	0	0	4	0	0	65		1	0	1	12

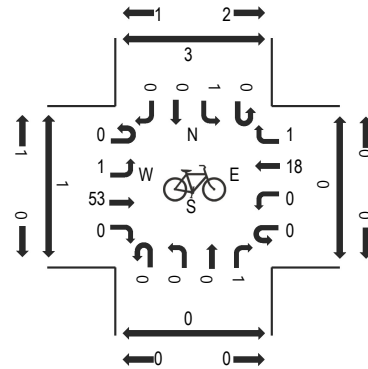
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	0	148	0	1	0	64	5	0	0	0	0	0	10	0	0	228
Mediums	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4
Total	0	0	150	0	2	0	66	5	0	0	0	0	0	10	0	0	233

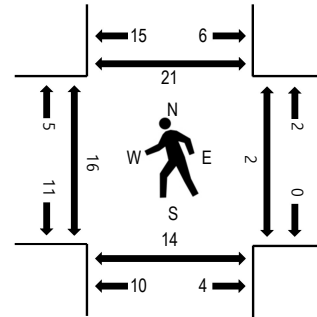
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Grant Ave Northbound				Grant Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	45	0	0	0	14	2	0	2	0	25	0	0	0	0	88	334	0	0	0	6
4:15 PM	0	0	35	0	0	0	10	2	0	3	1	11	0	1	0	0	63	337	0	0	0	2
4:30 PM	0	0	45	0	0	0	15	1	0	3	2	25	0	8	0	0	99	362	1	0	3	1
4:45 PM	0	1	33	0	0	0	14	2	0	1	3	25	0	4	0	1	84	331	4	0	4	11
5:00 PM	0	0	40	0	0	0	15	2	0	0	1	31	0	2	0	0	91	345	6	0	2	5
5:15 PM	0	0	43	0	0	0	18	1	0	3	0	20	0	2	0	1	88		5	2	5	4
5:30 PM	0	1	33	0	0	0	15	0	0	2	2	15	0	0	0	0	68		6	1	6	5
5:45 PM	0	0	45	0	0	0	16	1	0	1	3	28	0	4	0	0	98		5	0	2	10

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	158	0	0	0	60	6	0	7	6	100	0	16	0	2	356	
Mediums	0	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	6	
Total	0	1	161	0	0	0	62	6	0	7	6	101	0	16	0	2	362	

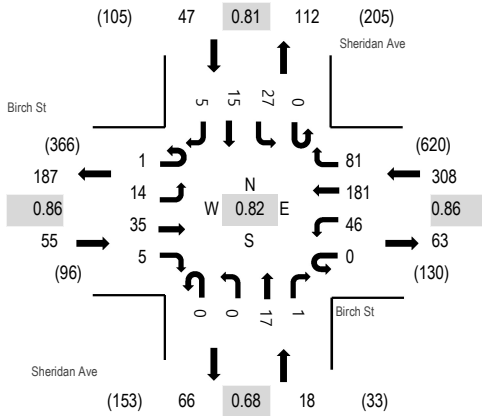
Location: 4 Sheridan Ave & Birch St PM

Date: Tuesday, March 8, 2022

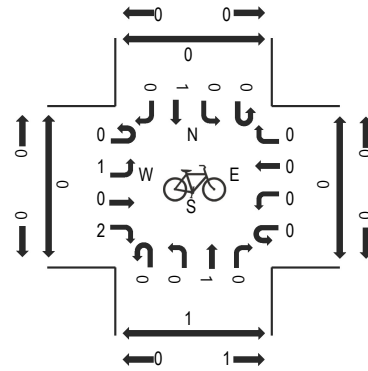
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

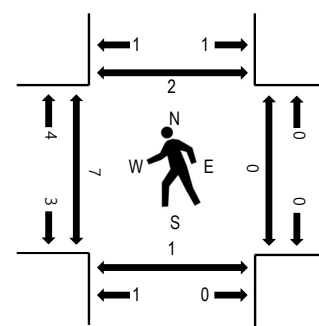
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

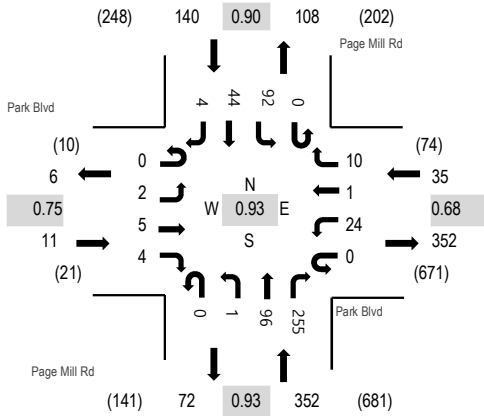
Traffic Counts - Motorized Vehicles

Interval Start Time	Birch St Eastbound				Birch St Westbound				Sheridan Ave Northbound				Sheridan Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	5	8	0	0	17	59	18	0	0	5	0	0	8	8	2	130	428	0	0	1	0
4:15 PM	0	3	5	2	0	10	47	24	0	0	3	0	0	7	2	0	103	400	2	0	0	0
4:30 PM	0	2	11	3	0	8	38	18	0	0	6	1	0	9	4	1	101	410	1	0	0	1
4:45 PM	1	4	11	0	0	11	37	21	0	0	3	0	0	3	1	2	94	415	4	0	0	1
5:00 PM	0	4	9	0	0	17	39	14	0	0	5	1	0	10	2	1	102	426	2	0	0	1
5:15 PM	0	1	3	2	0	21	51	19	0	0	1	2	0	7	5	1	113		2	1	1	1
5:30 PM	0	4	4	1	0	17	39	20	0	0	3	0	0	14	3	1	106		9	0	0	5
5:45 PM	0	1	11	1	0	10	47	18	0	0	3	0	0	6	8	0	105		3	0	0	4

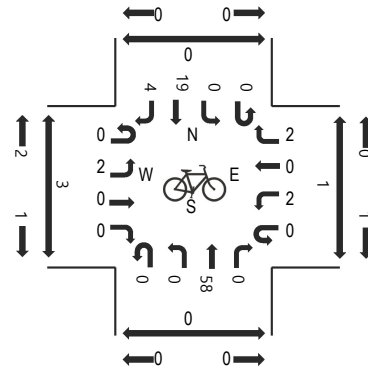
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	1	14	32	5	0	46	180	80	0	0	17	1	0	24	15	5	420
Mediums	0	0	3	0	0	0	1	1	0	0	0	0	0	3	0	0	8
Total	1	14	35	5	0	46	181	81	0	0	17	1	0	27	15	5	428

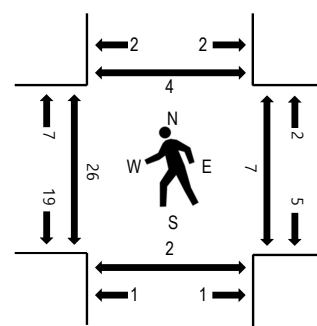
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	Park Blvd Eastbound				Park Blvd Westbound				Page Mill Rd Northbound				Page Mill Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	1	0	0	8	2	1	0	0	22	72	0	20	12	0	138	517	7	2	0	3
4:15 PM	0	0	4	1	0	4	1	4	0	0	19	53	0	14	5	0	105	524	7	3	0	1
4:30 PM	0	1	3	1	0	11	0	4	0	0	28	66	0	22	9	0	145	538	5	1	0	1
4:45 PM	0	0	0	1	0	3	0	3	0	0	30	55	0	26	11	0	129	504	9	1	1	0
5:00 PM	0	1	2	1	0	5	1	1	0	1	17	77	0	25	10	4	145	507	7	2	1	1
5:15 PM	0	0	0	1	0	5	0	2	0	0	21	57	0	19	14	0	119		5	3	0	2
5:30 PM	0	1	1	2	0	7	0	1	0	1	17	54	0	14	13	0	111		3	7	0	1
5:45 PM	0	0	0	0	0	4	0	7	0	0	22	69	0	17	13	0	132		8	4	1	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	2	5	4	0	22	1	10	0	1	96	253	0	92	44	2	532
Mediums	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	2	6
Total	0	2	5	4	0	24	1	10	0	1	96	255	0	92	44	4	538

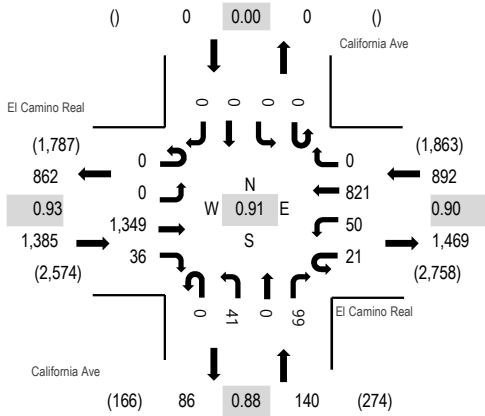
Location: 6 California Ave & El Camino Real PM

Date: Tuesday, March 8, 2022

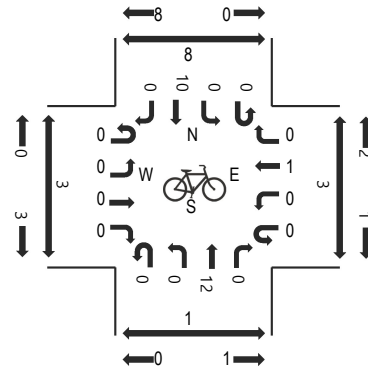
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

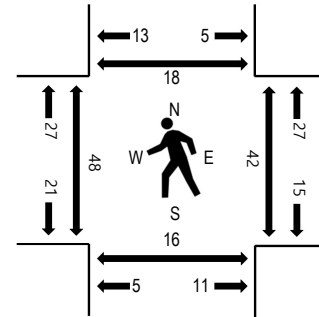
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	El Camino Real Eastbound				El Camino Real Westbound				California Ave Northbound				California Ave Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	278	4	5	10	243	0	0	7	0	18	0	0	0	0	565	2,351	7	18	5	3
4:15 PM	0	0	361	11	5	11	239	0	0	15	0	19	0	0	0	0	661	2,417	10	8	2	10
4:30 PM	0	0	290	7	7	15	197	0	0	12	0	25	0	0	0	0	553	2,350	15	12	4	2
4:45 PM	0	0	334	8	2	15	183	0	0	9	0	21	0	0	0	0	572	2,312	17	11	4	3
5:00 PM	0	0	364	10	7	9	202	0	0	5	0	34	0	0	0	0	631	2,360	6	11	6	3
5:15 PM	0	0	341	7	13	13	185	0	0	14	0	21	0	0	0	0	594		4	8	3	3
5:30 PM	0	0	193	6	7	13	254	0	0	12	0	30	0	0	0	0	515		14	16	4	5
5:45 PM	0	0	353	7	9	20	199	0	0	11	0	21	0	0	0	0	620		10	12	2	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	9	0	0	0	7	0	0	0	0	0	0	0	0	0	16
Lights	0	0	1,332	36	21	48	804	0	0	41	0	92	0	0	0	0	2,374
Mediums	0	0	8	0	0	2	10	0	0	0	0	7	0	0	0	0	27
Total	0	0	1,349	36	21	50	821	0	0	41	0	99	0	0	0	0	2,417

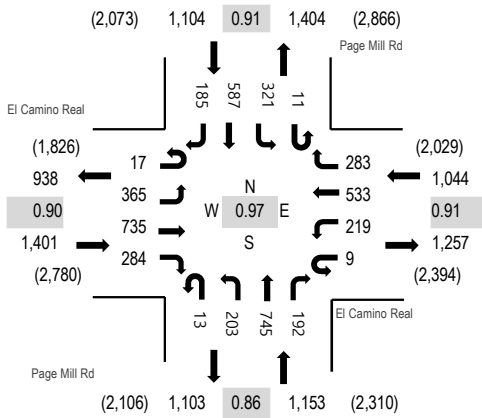
Location: 7 Page Mill Rd & El Camino Real PM

Date: Tuesday, March 8, 2022

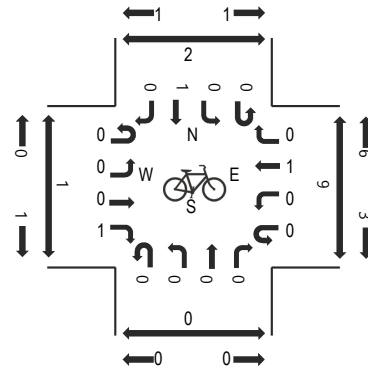
Peak Hour: 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

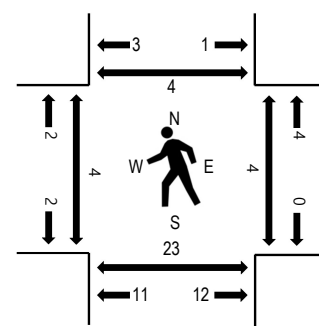
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	El Camino Real Eastbound				El Camino Real Westbound				Page Mill Rd Northbound				Page Mill Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	11	79	193	63	5	52	145	85	2	52	199	40	3	68	144	53	1,194	4,490	1	0	4	1
4:15 PM	3	115	197	64	0	37	129	53	4	57	185	44	6	57	116	33	1,100	4,493	1	0	4	1
4:30 PM	1	103	145	79	2	62	103	77	1	50	240	45	7	55	131	43	1,144	4,559	0	5	2	1
4:45 PM	0	83	190	53	3	57	123	52	1	35	174	28	1	65	137	50	1,052	4,622	2	3	4	5
5:00 PM	1	87	195	78	1	58	132	88	0	43	198	44	4	88	150	30	1,197	4,702	2	1	3	1
5:15 PM	3	81	172	73	5	64	122	63	12	44	189	34	2	69	186	47	1,166		1	1	4	0
5:30 PM	11	103	149	60	1	58	164	66	1	61	202	62	3	85	130	51	1,207		0	1	14	1
5:45 PM	2	94	219	73	2	39	115	66	0	55	156	52	2	79	121	57	1,132		1	1	2	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	7	0	0	0	10	0	0	0	0	0	0	0	2	0	21
Lights	17	356	715	280	9	215	522	280	13	198	739	192	11	319	581	185	4,632
Mediums	0	7	13	4	0	4	1	3	0	5	6	0	0	2	4	0	49
Total	17	365	735	284	9	219	533	283	13	203	745	192	11	321	587	185	4,702

Appendix B
Volume Summary

Intersection Number: 1 Traffic Node Number: 1 Intersection Name: Park Boulevard & California Avenue Peak Hour: AM Count Date: 2022 Date of Analysis: 04/07/22																																																																																																																																																																																																	
Movements																																																																																																																																																																																																	
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	North Approach			East Approach			South Approach			West Approach			Total																																																																																																																																																																																				
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	North Approach			East Approach			South Approach			West Approach			Total																																																																																																																																																																																				
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Cumulative + Project	0	180	21	2	4	22	36	84	0	84	18	0	451																																																																																																																																																																																				

Intersection Number:		3												
Traffix Node Number:		3												
Intersection Name:		Park Bouelvard & Grant Avenue												
Peak Hour:		AM												
Count Date:		2022												
		Date of Analysis: 04/07/22												
Movements														
		North Approach			East Approach			South Approach			West Approach			
Scenario:		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions		0	166	3	3	0	15	7	73	0	75	11	15	368
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	0	0	0	0	0	0	2	0	0	0	0	2
<i>Total Approved Trips</i>		0	0	0	0	0	0	0	2	0	0	0	0	2
Background Conditions		0	166	3	3	0	15	7	75	0	75	11	15	370
Cumulative Conditions		0	187	3	3	0	17	8	82	0	84	12	17	413
Project Trips		0	5	0	0	0	0	0	21	0	0	0	2	28
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Background + Project		0	171	3	3	0	15	7	96	0	75	11	17	398
Cumulative + Project		0	192	3	3	0	17	8	103	0	84	12	19	441
Intersection Number:		4												
Traffix Node Number:		4												
Intersection Name:		Birch Street & Sheridan Avenue												
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Count Date:		2017												
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Movements														
		North Approach			East Approach			South Approach			West Approach			
Scenario:		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions		7	14	16	9	16	16	230	481	160	1	37	4	991
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	0	0	0	0	0	0	16	0	0	0	0	16
<i>Total Approved Trips</i>		0	0	0	0	0	0	0	16	0	0	0	0	16
Background Conditions		7	14	16	9	16	16	230	497	160	1	37	4	1007
Cumulative Conditions		31	21	16	9	16	16	230	503	161	2	37	34	1076
Project Trips		0	0	0	0	1	1	8	8	0	0	4	0	22
Existing + Project		7	14	16	9	17	17	238	489	160	1	41	4	1013
Background + Project		7	14	16	9	17	17	238	505	160	1	41	4	1029
Cumulative + Project		31	21	16	9	17	17	238	511	161	2	41	34	1098

Intersection Number: 5 Traffic Node Number: 5 Intersection Name: Park Bouelvard & Page Mill Road Peak Hour: AM Count Date: 2022 Date of Analysis: 04/07/22																																																																																																																																																																																																	
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	North Approach			East Approach			South Approach			West Approach			Total																																																																																																																																																																																				
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380-410 Cambridge Avenue	0	0	0	0	0	0	0	2	0	0	0	0	2																																																																																																																																																																																				
<i>Total Approved Trips</i>	0	0	0	0	0	0	0	2	0	0	0	0	2																																																																																																																																																																																				
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Cumulative Conditions	3	17	38	10	51	107	47	11	40	246	189	5	764																																																																																																																																																																																				
Project Trips	2	0	0	0	0	0	0	2	0	0	0	8	12																																																																																																																																																																																				
Existing + Project	5	5	1	10	51	85	25	5	40	246	189	13	675																																																																																																																																																																																				
Background + Project	5	5	1	10	51	85	25	7	40	246	189	13	677																																																																																																																																																																																				
Cumulative + Project	5	17	38	10	51	107	47	13	40	246	189	13	776																																																																																																																																																																																				
Intersection Number: 6 Traffic Node Number: 6 Intersection Name: El Camino Real & California Avenue Peak Hour: AM Count Date: 2019 Date of Analysis: 04/07/22																																																																																																																																																																																																	
Movements																																																																																																																																																																																																	
Scenario: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">North Approach</th> <th colspan="3">East Approach</th> <th colspan="3">South Approach</th> <th colspan="3">West Approach</th> <th rowspan="2">Total</th> </tr> <tr> <th>RT</th> <th>TH</th> <th>LT</th> <th>RT</th> <th>TH</th> <th>LT</th> <th>RT</th> <th>TH</th> <th>LT</th> <th>RT</th> <th>TH</th> <th>LT</th> </tr> </thead> <tbody> <tr> <td>Existing Conditions</td> <td>129</td> <td>933</td> <td>65</td> <td>63</td> <td>69</td> <td>25</td> <td>43</td> <td>1602</td> <td>103</td> <td>102</td> <td>43</td> <td>47</td> <td>3224</td> </tr> <tr> <td colspan="14">Approved Project Trips</td> </tr> <tr> <td>1451-1601 California Avenue</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> <td>5</td> <td>18</td> <td>5</td> <td>10</td> <td>40</td> </tr> <tr> <td>380-410 Cambridge Avenue</td> <td>0</td> <td>4</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>16</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>22</td> </tr> <tr> <td><i>Total Approved Trips</i></td> <td>0</td> <td>4</td> <td>0</td> <td>0</td> <td>2</td> <td>0</td> <td>0</td> <td>16</td> <td>5</td> <td>18</td> <td>5</td> <td>12</td> <td>62</td> </tr> <tr> <td>Background Conditions</td> <td>129</td> <td>937</td> <td>65</td> <td>63</td> <td>71</td> <td>25</td> <td>43</td> <td>1618</td> <td>108</td> <td>120</td> <td>48</td> <td>59</td> <td>3286</td> </tr> <tr> <td>Cumulative Conditions</td> <td>138</td> <td>1023</td> <td>66</td> <td>64</td> <td>70</td> <td>40</td> <td>91</td> <td>1779</td> <td>104</td> <td>122</td> <td>45</td> <td>59</td> <td>3601</td> </tr> <tr> <td>Project Trips</td> <td>0</td> <td>0</td> <td>9</td> <td>1</td> <td>0</td> <td>1</td> <td>4</td> <td>1</td> <td>0</td> <td>0</td> <td>2</td> <td>0</td> <td>18</td> </tr> <tr> <td>Existing + Project</td> <td>129</td> <td>933</td> <td>74</td> <td>64</td> <td>69</td> <td>26</td> <td>47</td> <td>1603</td> <td>103</td> <td>102</td> <td>45</td> <td>47</td> <td>3242</td> </tr> <tr> <td>Background + Project</td> <td>129</td> <td>937</td> <td>74</td> <td>64</td> <td>71</td> <td>26</td> <td>47</td> <td>1619</td> <td>108</td> <td>120</td> <td>50</td> <td>59</td> <td>3304</td> </tr> <tr> <td>Cumulative + Project</td> <td>138</td> <td>1023</td> <td>75</td> <td>65</td> <td>70</td> <td>41</td> <td>95</td> <td>1780</td> <td>104</td> <td>122</td> <td>47</td> <td>59</td> <td>3619</td> </tr> </tbody> </table>															North Approach			East Approach			South Approach			West Approach			Total	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Existing Conditions	129	933	65	63	69	25	43	1602	103	102	43	47	3224	Approved Project Trips														1451-1601 California Avenue	0	0	0	0	2	0	0	0	5	18	5	10	40	380-410 Cambridge Avenue	0	4	0	0	0	0	0	16	0	0	0	2	22	<i>Total Approved Trips</i>	0	4	0	0	2	0	0	16	5	18	5	12	62	Background Conditions	129	937	65	63	71	25	43	1618	108	120	48	59	3286	Cumulative Conditions	138	1023	66	64	70	40	91	1779	104	122	45	59	3601	Project Trips	0	0	9	1	0	1	4	1	0	0	2	0	18	Existing + Project	129	933	74	64	69	26	47	1603	103	102	45	47	3242	Background + Project	129	937	74	64	71	26	47	1619	108	120	50	59	3304	Cumulative + Project	138	1023	75	65	70	41	95	1780	104	122	47	59	3619
	North Approach			East Approach			South Approach			West Approach			Total																																																																																																																																																																																				
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT																																																																																																																																																																																					
Existing Conditions	129	933	65	63	69	25	43	1602	103	102	43	47	3224																																																																																																																																																																																				
Approved Project Trips																																																																																																																																																																																																	
1451-1601 California Avenue	0	0	0	0	2	0	0	0	5	18	5	10	40																																																																																																																																																																																				
380-410 Cambridge Avenue	0	4	0	0	0	0	0	16	0	0	0	2	22																																																																																																																																																																																				
<i>Total Approved Trips</i>	0	4	0	0	2	0	0	16	5	18	5	12	62																																																																																																																																																																																				
Background Conditions	129	937	65	63	71	25	43	1618	108	120	48	59	3286																																																																																																																																																																																				
Cumulative Conditions	138	1023	66	64	70	40	91	1779	104	122	45	59	3601																																																																																																																																																																																				
Project Trips	0	0	9	1	0	1	4	1	0	0	2	0	18																																																																																																																																																																																				
Existing + Project	129	933	74	64	69	26	47	1603	103	102	45	47	3242																																																																																																																																																																																				
Background + Project	129	937	74	64	71	26	47	1619	108	120	50	59	3304																																																																																																																																																																																				
Cumulative + Project	138	1023	75	65	70	41	95	1780	104	122	47	59	3619																																																																																																																																																																																				

Intersection Number:	7												
Traffic Node Number:	7												
Intersection Name:	El Camino Real & Page Mill Road												
Peak Hour:	AM											Date of Analysis: 04/07/22	
Count Date:	2017												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	311	560	353	142	1215	229	147	951	288	182	845	342	5565
Approved Project Trips													
1451-1601 California Avenue	0	0	0	0	2	0	0	0	2	5	5	0	14
380-410 Cambridge Avenue	1	1	2	0	0	0	0	9	0	0	0	7	20
<i>Total Approved Trips</i>	1	1	2	0	2	0	0	9	2	5	5	7	34
Background Conditions	312	561	355	142	1217	229	147	960	290	187	850	349	5599
Cumulative Conditions	311	560	554	280	1371	345	364	1044	288	182	1285	342	6926
Project Trips	1	1	0	0	1	1	4	4	0	0	3	3	18
Existing + Project	312	561	353	142	1216	230	151	955	288	182	848	345	5583
Background + Project	313	562	355	142	1218	230	151	964	290	187	853	352	5617
Cumulative + Project	312	561	554	280	1372	346	368	1048	288	182	1288	345	6944

Intersection Number:		1												
Traffix Node Number:		1												
Intersection Name:		Park Boulevard & California Avenue												
Peak Hour:		PM										Date of Analysis: 04/07/22		
Count Date:		2022												
Movements														
Scenario:		North Approach			East Approach			South Approach			West Approach			Total
		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions		0	0	0	0	22	156	56	0	44	77	59	0	414
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	2	0	0	0	0	0	1	0	3
380-410 Cambridge Avenue		0	0	0	0	0	0	0	0	0	2	0	0	2
<i>Total Approved Trips</i>		0	0	0	0	2	0	0	0	0	2	1	0	5
Background Conditions		0	0	0	0	24	156	56	0	44	79	60	0	419
Cumulative Conditions		0	0	0	0	29	206	56	0	44	102	78	0	515
Project Trips		0	0	0	0	0	0	0	0	10	6	0	0	16
Existing + Project		0	0	0	0	22	156	56	0	54	83	59	0	430
Background + Project		0	0	0	0	24	156	56	0	54	85	60	0	435
Cumulative + Project		0	0	0	0	29	206	56	0	54	108	78	0	531
Intersection Number:		2												
Traffix Node Number:		2												
Intersection Name:		Park Boulevard & Sherman Avenue												
Peak Hour:		PM										Date of Analysis: 04/07/22		
Count Date:		2022												
Movements														
Scenario:		North Approach			East Approach			South Approach			West Approach			Total
		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions		0	235	0	0	0	16	8	103	3	158	9	11	543
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	2	0	0	0	0	0	0	0	0	0	0	2
<i>Total Approved Trips</i>		0	2	0	0	0	0	0	0	0	0	0	0	2
Background Conditions		0	237	0	0	0	16	8	103	3	158	9	11	545
Cumulative Conditions		0	267	0	0	0	18	9	117	3	179	10	12	615
Project Trips		0	0	6	10	6	32	10	0	0	0	2	0	66
Existing + Project		0	235	6	10	6	48	18	103	3	158	11	11	609
Background + Project		0	237	6	10	6	48	18	103	3	158	11	11	611
Cumulative + Project		0	267	6	10	6	50	19	117	3	179	12	12	681

Intersection Number:		3												
Traffix Node Number:		3												
Intersection Name:		Park Bouelvard & Grant Avenue												
Peak Hour:		PM												
Count Date:		2022												
		Date of Analysis: 04/07/22												
Movements														
		North Approach			East Approach			South Approach			West Approach			
Scenario:		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions		0	252	2	3	0	25	9	97	0	158	9	11	566
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	2	0	0	0	0	0	0	0	0	0	0	2
<i>Total Approved Trips</i>		0	2	0	0	0	0	0	0	0	0	0	0	2
Background Conditions		0	254	2	3	0	25	9	97	0	158	9	11	568
Cumulative Conditions		0	286	2	3	0	28	10	110	0	179	10	12	640
Project Trips		0	32	0	0	0	0	0	9	0	0	0	1	42
Existing + Project		0	284	2	3	0	25	9	106	0	158	9	12	608
Background + Project		0	286	2	3	0	25	9	106	0	158	9	12	610
Cumulative + Project		0	318	2	3	0	28	10	119	0	179	10	13	682

Intersection Number:		4												
Traffix Node Number:		4												
Intersection Name:		Birch Street & Sheridan Avenue												
Peak Hour:		PM												
Count Date:		2017												
		Date of Analysis: 04/07/22												
Movements														
		North Approach			East Approach			South Approach			West Approach			
Scenario:		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions		6	59	26	8	34	76	124	347	81	4	27	1	793
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	0	0	0	0	0	0	3	0	0	0	0	3
<i>Total Approved Trips</i>		0	0	0	0	0	0	0	3	0	0	0	0	3
Background Conditions		6	59	26	8	34	76	124	350	81	4	27	1	796
Cumulative Conditions		54	76	26	8	34	76	124	368	88	4	27	7	892
Project Trips		0	0	0	0	4	9	3	3	0	0	2	0	21
Existing + Project		6	59	26	8	38	85	127	350	81	4	29	1	814
Background + Project		6	59	26	8	38	85	127	353	81	4	29	1	817
Cumulative + Project		54	76	26	8	38	85	127	371	88	4	29	7	913

Intersection Number:		5												
Traffix Node Number:		5												
Intersection Name:		Park Bouelvard & Page Mill Road												
Peak Hour:		PM										Date of Analysis: 04/07/22		
Count Date:		2022												
Movements														
Scenario:		North Approach			East Approach			South Approach			West Approach			Total
		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions		6	8	3	6	69	144	16	2	38	399	150	2	843
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	0	0	0	0	0	0	0	0	0
380-410 Cambridge Avenue		0	2	0	0	0	0	0	0	0	0	0	0	2
<i>Total Approved Trips</i>		0	2	0	0	0	0	0	0	0	0	0	0	2
Background Conditions		6	10	3	6	69	144	16	2	38	399	150	2	845
Cumulative Conditions		6	10	9	39	69	167	74	41	38	399	150	2	1004
Project Trips		17	2	0	0	0	0	0	1	0	0	0	3	23
Existing + Project		23	10	3	6	69	144	16	3	38	399	150	5	866
Background + Project		23	12	3	6	69	144	16	3	38	399	150	5	868
Cumulative + Project		23	12	9	39	69	167	74	42	38	399	150	5	1027
Intersection Number:		6												
Traffix Node Number:		6												
Intersection Name:		El Camino Real & California Avenue												
Peak Hour:		PM										Date of Analysis: 04/07/22		
Count Date:		2019												
Movements														
Scenario:		North Approach			East Approach			South Approach			West Approach			Total
		RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Existing Conditions		46	1737	74	88	45	72	100	1355	80	165	96	151	4009
Approved Project Trips														
1451-1601 California Avenue		0	0	0	0	4	0	0	0	13	17	3	5	42
380-410 Cambridge Avenue		2	29	0	0	0	0	0	3	0	0	0	0	34
<i>Total Approved Trips</i>		2	29	0	0	4	0	0	3	13	17	3	5	76
Background Conditions		48	1766	74	88	49	72	100	1358	93	182	99	156	4085
Cumulative Conditions		59	1879	74	88	49	112	122	1492	84	171	97	151	4378
Project Trips		0	0	4	5	1	4	2	5	1	0	1	0	23
Existing + Project		46	1737	78	93	46	76	102	1360	81	165	97	151	4032
Background + Project		48	1766	78	93	50	76	102	1363	94	182	100	156	4108
Cumulative + Project		59	1879	78	93	50	116	124	1497	85	171	98	151	4401

Intersection Number:	7												
Traffic Node Number:	7												
Intersection Name:	El Camino Real & Page Mill Road												
Peak Hour:	PM											Date of Analysis: 04/07/22	
Count Date:	2017												
	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	258	1325	460	124	863	392	276	766	246	241	1176	319	6446
Approved Project Trips													
1451-1601 California Avenue	0	0	0	0	4	0	0	0	4	3	3	0	14
380-410 Cambridge Avenue	6	8	15	0	0	0	0	2	0	0	0	1	32
<i>Total Approved Trips</i>	6	8	15	0	4	0	0	2	4	3	3	1	46
Background Conditions	264	1333	475	124	867	392	276	768	250	244	1179	320	6492
Cumulative Conditions	258	1325	567	313	1154	673	406	780	246	241	1457	319	7739
Project Trips	4	5	0	0	4	5	2	2	0	0	1	1	24
Existing + Project	262	1330	460	124	867	397	278	768	246	241	1177	320	6470
Background + Project	268	1338	475	124	871	397	278	770	250	244	1180	321	6516
Cumulative + Project	262	1330	567	313	1158	678	408	782	246	241	1458	320	7763

Appendix C

Level of Service Calculations

Scenario Report

Scenario: Existing AM
Command: Default Command
Volume: Existing AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.131
Loss Time (sec): 0 Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 0 0 0 1 0 0 0

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Volume Module:
Base Vol: 42 0 33 0 0 0 0 10 70 93 15 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: 42 0 33 0 0 0 0 10 70 93 15 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: 42 0 33 0 0 0 0 10 70 93 15 0
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: 42 0 33 0 0 0 0 10 70 93 15 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 42 0 33 0 0 0 0 10 70 93 15 0
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: 42 0 33 0 0 0 0 10 70 93 15 0

-----|-----|-----|-----|

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.56 0.00 0.44 0.00 0.00 0.00 0.00 0.12 0.88 0.86 0.14 0.00
Final Sat.: 471 0 370 0 0 0 0 121 847 709 114 0

-----|-----|-----|-----|

Capacity Analysis Module:
Vol/Sat: 0.09 xxxx 0.09 xxxx xxxx xxxx 0.08 0.08 0.13 0.13 xxxx
Crit Moves: ****
Delay/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 7.9 7.9 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
AdjDel/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 7.9 7.9 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.5 xxxxxx 7.0 7.9
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.5 xxxxxx 7.0 7.9
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time for different movements.

Capacity Module: Table with 12 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS by movement, shared capacity, and shared queue lengths.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic flows and 10 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: D[28.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 13 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue values.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.403
Loss Time (sec): 9 Average Delay (sec/veh): 14.9
Optimal Cycle: 29 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 40 3 25 1 5 3 5 189 246 85 51 10
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: 40 3 25 1 5 3 5 189 246 85 51 10
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: 40 3 25 1 5 3 5 189 246 85 51 10
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: 40 3 25 1 5 3 5 189 246 85 51 10
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 40 3 25 1 5 3 5 189 246 85 51 10
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: 40 3 25 1 5 3 5 189 246 85 51 10

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.72 0.79 0.72 0.89 0.97 0.78 0.88 0.92 0.84 0.88 0.98 0.90
Lanes: 0.59 0.04 0.37 0.18 0.82 1.00 1.00 0.41 0.59 1.00 0.82 0.18
Final Sat.: 812 61 507 302 1510 1488 1663 720 938 1663 1527 299

Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.05 0.00 0.00 0.00 0.00 0.26 0.26 0.05 0.03 0.03
Crit Moves: ****
Green/Cycle: 0.12 0.12 0.12 0.12 0.12 0.12 0.06 0.65 0.65 0.13 0.71 0.71
Volume/Cap: 0.40 0.40 0.40 0.03 0.03 0.02 0.05 0.40 0.40 0.40 0.05 0.05
Uniform Del: 36.5 36.5 36.5 34.8 34.8 34.7 39.5 7.4 7.4 36.2 3.8 3.8
IncrcmntDel: 1.6 1.6 1.6 0.0 0.0 0.0 0.2 0.2 0.2 1.3 0.0 0.0
InitQueueDel: 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: 38.0 38.0 38.0 34.8 34.8 34.8 39.7 7.7 7.7 37.4 3.8 3.8
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: 38.0 38.0 38.0 34.8 34.8 34.8 39.7 7.7 7.7 37.4 3.8 3.8
LOS by Move: D D D C C C D A A D A A
HCM2kAvgQ: 2 2 2 0 0 0 0 6 6 3 1 1

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.493
Loss Time (sec): 12 Average Delay (sec/veh): 33.4
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume).

Saturation Flow Module: Table with 12 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 0.851
Loss Time (sec): 12 Average Delay (sec/veh): 64.4
Optimal Cycle: 112 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 14 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Scenario Report

Scenario: Existing PM
Command: Default Command
Volume: Existing PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.223
Loss Time (sec): 0 Average Delay (sec/veh): 8.1
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 56 0 0 0 0 59 77 156 22 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: 44 0 56 0 0 0 0 59 77 156 22 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: 44 0 56 0 0 0 0 59 77 156 22 0
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: 44 0 56 0 0 0 0 59 77 156 22 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 44 0 56 0 0 0 0 59 77 156 22 0
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: 44 0 56 0 0 0 0 59 77 156 22 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.44 0.00 0.56 0.00 0.00 0.00 0.00 0.43 0.57 0.88 0.12 0.00
Final Sat.: 349 0 444 0 0 0 0 384 501 699 99 0

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Capacity Analysis Module:
Vol/Sat: 0.13 xxxx 0.13 xxxx xxxx xxxx 0.15 0.15 0.22 0.22 xxxx
Crit Moves: ****
Delay/Veh: 7.9 0.0 7.9 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 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
AdjDel/Veh: 7.9 0.0 7.9 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.9 xxxxxx 7.7 8.7
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.9 xxxxxx 7.7 8.7
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: B[13.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap and follow-up times across four approaches.

Capacity Module: Table with 12 columns for capacity-related metrics and 4 rows of data including Cnflct Vol, Potent Cap., etc.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows of data including 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.2 Worst Case Level Of Service: B[13.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data.

Critical Gap Module: Table with 12 columns for gap and follow-up times.

Capacity Module: Table with 12 columns for capacity-related metrics.

Level Of Service Module: Table with 12 columns for LOS-related metrics.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: C [21.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 13 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue lengths.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.526
Loss Time (sec): 9 Average Delay (sec/veh): 15.9
Optimal Cycle: 35 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1! 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:

Base Vol: 38 2 16 3 8 6 2 150 399 144 69 6
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: 38 2 16 3 8 6 2 150 399 144 69 6
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: 38 2 16 3 8 6 2 150 399 144 69 6
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: 38 2 16 3 8 6 2 150 399 144 69 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 38 2 16 3 8 6 2 150 399 144 69 6
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: 38 2 16 3 8 6 2 150 399 144 69 6

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.69 0.75 0.69 0.86 0.93 0.78 0.88 0.89 0.82 0.88 0.99 0.91
Lanes: 0.68 0.03 0.29 0.29 0.71 1.00 1.00 0.26 0.74 1.00 0.91 0.09
Final Sat.: 891 47 375 470 1254 1488 1663 435 1158 1663 1715 149

Capacity Analysis Module:

Vol/Sat: 0.04 0.04 0.04 0.01 0.01 0.00 0.00 0.34 0.34 0.09 0.04 0.04
Crit Moves: ****
Green/Cycle: 0.08 0.08 0.08 0.08 0.08 0.08 0.02 0.65 0.65 0.16 0.80 0.80
Volume/Cap: 0.53 0.53 0.53 0.08 0.08 0.05 0.05 0.53 0.53 0.53 0.05 0.05
Uniform Del: 39.7 39.7 39.7 38.3 38.3 38.2 42.9 8.2 8.2 34.4 2.0 2.0
IncremntDel: 4.8 4.8 4.8 0.2 0.2 0.2 0.5 0.5 0.5 1.9 0.0 0.0
InitQueueDel: 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: 44.5 44.5 44.5 38.5 38.5 38.3 43.5 8.7 8.7 36.3 2.0 2.0
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: 44.5 44.5 44.5 38.5 38.5 38.3 43.5 8.7 8.7 36.3 2.0 2.0
LOS by Move: D D D D D D D A A D A A
HCM2kAvgQ: 2 2 2 0 0 0 0 9 9 5 0 0

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.641
Loss Time (sec): 12 Average Delay (sec/veh): 30.0
Optimal Cycle: 55 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and various traffic volume and delay metrics.

Volume Module: Table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each movement.

Saturation Flow Module: Table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 130 Critical Vol./Cap.(X): 0.869
Loss Time (sec): 12 Average Delay (sec/veh): 49.1
Optimal Cycle: 108 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

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Volume Module: Table with 12 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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Saturation Flow Module: Table with 12 columns for saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

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Capacity Analysis Module: Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Scenario Report

Scenario: Existing+P AM
Command: Default Command
Volume: Existing AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: Project AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.132
Loss Time (sec): 0 Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 42 0 33 0 0 0 0 10 70 93 15 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: 42 0 33 0 0 0 0 10 70 93 15 0
Added Vol: 1 0 0 0 0 0 0 0 15 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 43 0 33 0 0 0 0 10 85 93 15 0
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: 43 0 33 0 0 0 0 10 85 93 15 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 43 0 33 0 0 0 0 10 85 93 15 0
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: 43 0 33 0 0 0 0 10 85 93 15 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.57 0.00 0.43 0.00 0.00 0.00 0.00 0.11 0.89 0.86 0.14 0.00
Final Sat.: 472 0 362 0 0 0 0 102 867 707 114 0

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Capacity Analysis Module:
Vol/Sat: 0.09 xxxx 0.09 xxxx xxxx xxxx 0.10 0.10 0.13 0.13 xxxx
Crit Moves: ****
Delay/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 8.0 8.0 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
AdjDel/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 8.0 8.0 0.0
LOS by Move: A * A * * * * * A A A A *
ApproachDel: 7.5 xxxxxx 7.0 8.0
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.5 xxxxxx 7.0 8.0
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[11.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[11.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic flows and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap and follow-up times across four approaches.

Capacity Module: Table with 12 columns for capacity metrics across four approaches.

Level of Service Module: Table with 12 columns for LOS metrics across four approaches.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: D[29.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 13 columns showing conflict volume, potential capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 9 Average Delay (sec/veh): 15.4
Optimal Cycle: 29 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 40 3 25 1 5 3 5 189 246 85 51 10
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: 40 3 25 1 5 3 5 189 246 85 51 10
Added Vol: 0 2 0 0 0 2 8 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 40 5 25 1 5 5 13 189 246 85 51 10
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: 40 5 25 1 5 5 13 189 246 85 51 10
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 40 5 25 1 5 5 13 189 246 85 51 10
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: 40 5 25 1 5 5 13 189 246 85 51 10

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.73 0.79 0.73 0.89 0.97 0.78 0.88 0.92 0.84 0.88 0.98 0.90
Lanes: 0.57 0.07 0.36 0.18 0.82 1.00 1.00 0.41 0.59 1.00 0.82 0.18
Final Sat.: 798 100 498 302 1510 1488 1663 720 938 1663 1527 299

Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.05 0.00 0.00 0.00 0.01 0.26 0.26 0.05 0.03 0.03
Crit Moves: ****
Green/Cycle: 0.12 0.12 0.12 0.12 0.12 0.12 0.15 0.65 0.65 0.13 0.63 0.63
Volume/Cap: 0.40 0.40 0.40 0.03 0.03 0.03 0.05 0.40 0.40 0.40 0.05 0.05
Uniform Del: 36.3 36.3 36.3 34.6 34.6 34.6 33.0 7.5 7.5 36.2 6.4 6.4
IncremntDel: 1.5 1.5 1.5 0.0 0.0 0.1 0.1 0.2 0.2 1.3 0.0 0.0
InitQueueDel: 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: 37.9 37.9 37.9 34.7 34.7 34.7 33.1 7.8 7.8 37.5 6.4 6.4
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: 37.9 37.9 37.9 34.7 34.7 34.7 33.1 7.8 7.8 37.5 6.4 6.4
LOS by Move: D D D C C C C A A D A A
HCM2kAvgQ: 2 2 2 0 0 0 0 6 6 3 1 1

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.502
Loss Time (sec): 12 Average Delay (sec/veh): 34.1
Optimal Cycle: 43 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 13 rows of data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 14 rows of data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 0.854
Loss Time (sec): 12 Average Delay (sec/veh): 64.6
Optimal Cycle: 114 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 14 rows of data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Scenario Report

Scenario: Existing+P PM
Command: Default Command
Volume: Existing PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: Project PM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.225
Loss Time (sec): 0 Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 56 0 0 0 0 59 77 156 22 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: 44 0 56 0 0 0 0 59 77 156 22 0
Added Vol: 10 0 0 0 0 0 0 0 6 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 54 0 56 0 0 0 0 59 83 156 22 0
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: 54 0 56 0 0 0 0 59 83 156 22 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 54 0 56 0 0 0 0 59 83 156 22 0
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: 54 0 56 0 0 0 0 59 83 156 22 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.49 0.00 0.51 0.00 0.00 0.00 0.00 0.42 0.58 0.88 0.12 0.00
Final Sat.: 384 0 399 0 0 0 0 365 514 693 98 0

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Capacity Analysis Module:
Vol/Sat: 0.14 xxxx 0.14 xxxx xxxx xxxx 0.16 0.16 0.23 0.23 xxxx
Crit Moves: ****
Delay/Veh: 8.0 0.0 8.0 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 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
AdjDel/Veh: 8.0 0.0 8.0 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 8.0 xxxxxx 7.7 8.7
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.0 xxxxxx 7.7 8.7
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: B[14.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: B[14.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module: Critical Gp, FollowUpTim.

Capacity Module: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: C [23.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 13 columns showing conflict volume, potential capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue values.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 9 Average Delay (sec/veh): 16.6
Optimal Cycle: 35 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:

Base Vol: 38 2 16 3 8 6 2 150 399 144 69 6
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: 38 2 16 3 8 6 2 150 399 144 69 6
Added Vol: 0 1 0 0 2 17 3 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 38 3 16 3 10 23 5 150 399 144 69 6
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: 38 3 16 3 10 23 5 150 399 144 69 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 38 3 16 3 10 23 5 150 399 144 69 6
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: 38 3 16 3 10 23 5 150 399 144 69 6

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.69 0.75 0.69 0.86 0.94 0.78 0.88 0.89 0.82 0.88 0.99 0.91
Lanes: 0.67 0.05 0.28 0.25 0.75 1.00 1.00 0.26 0.74 1.00 0.91 0.09
Final Sat.: 880 69 371 404 1346 1488 1663 435 1158 1663 1715 149

Capacity Analysis Module:

Vol/Sat: 0.04 0.04 0.04 0.01 0.01 0.02 0.00 0.34 0.34 0.09 0.04 0.04
Crit Moves: ****
Green/Cycle: 0.08 0.08 0.08 0.08 0.08 0.08 0.06 0.65 0.65 0.16 0.76 0.76
Volume/Cap: 0.53 0.53 0.53 0.09 0.09 0.19 0.05 0.53 0.53 0.53 0.05 0.05
Uniform Del: 39.6 39.6 39.6 38.2 38.2 38.5 40.1 8.2 8.2 34.4 2.7 2.7
IncrcmntDel: 4.8 4.8 4.8 0.3 0.3 0.8 0.2 0.5 0.5 1.9 0.0 0.0
InitQueueDel: 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: 44.4 44.4 44.4 38.5 38.5 39.3 40.4 8.7 8.7 36.3 2.7 2.7
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: 44.4 44.4 44.4 38.5 38.5 39.3 40.4 8.7 8.7 36.3 2.7 2.7
LOS by Move: D D D D D D D A A D A A
HCM2kAvgQ: 2 2 2 0 0 1 0 9 9 5 1 1

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.646
Loss Time (sec): 12 Average Delay (sec/veh): 30.5
Optimal Cycle: 55 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and various traffic parameters like Min. Green, Y+R, Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec):	130	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	12	Average Delay (sec/veh):	49.3
Optimal Cycle:	109	Level Of Service:	D

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R

Control:	Protected	Protected	Protected	Protected
Rights:	Include	Ovl	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
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
Lanes:	2 0 2 1 0	2 0 3 0 1	2 0 2 0 1	2 0 1 1 0

Volume Module:

Base Vol:	246 766 276	460 1325 258	319 1176 241	392 863 124
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:	246 766 276	460 1325 258	319 1176 241	392 863 124
Added Vol:	0 2 2	0 5 4	1 1 0	5 4 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	246 768 278	460 1330 262	320 1177 241	397 867 124
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:	246 768 278	460 1330 262	320 1177 241	397 867 124
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	246 768 278	460 1330 262	320 1177 241	397 867 124
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:	246 768 278	460 1330 262	320 1177 241	397 867 124

Saturation Flow Module:

Sat/Lane:	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900
Adjustment:	0.79 0.96 0.88	0.79 1.00 0.78	0.79 1.00 0.78	0.79 0.98 0.90
Lanes:	2.00 2.15 0.85	2.00 3.00 1.00	2.00 2.00 1.00	2.00 1.73 0.27
Final Sat.:	2992 3928 1422	2992 5700 1488	2992 3800 1488	2992 3227 461

Capacity Analysis Module:

Vol/Sat:	0.08 0.20 0.20	0.15 0.23 0.18	0.11 0.31 0.16	0.13 0.27 0.27
Crit Moves:	****	****	****	****
Green/Cycle:	0.10 0.22 0.22	0.18 0.30 0.44	0.14 0.36 0.36	0.15 0.36 0.36
Volume/Cap:	0.79 0.87 0.87	0.87 0.79 0.40	0.74 0.87 0.46	0.87 0.74 0.74
Uniform Del:	56.8 48.6 48.6	52.1 42.0 24.7	53.3 39.2 32.3	53.9 36.1 36.1
IncrcmntDel:	12.6 7.2 7.2	14.7 2.6 0.4	6.7 6.5 0.6	16.6 2.2 2.2
InitQueueDel:	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:	69.4 55.9 55.9	66.9 44.6 25.1	60.0 45.7 32.9	70.5 38.3 38.3
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:	69.4 55.9 55.9	66.9 44.6 25.1	60.0 45.7 32.9	70.5 38.3 38.3
LOS by Move:	E E E	E D C	E D C	E D D
HCM2kAvgQ:	8 17 17	14 18 8	9 25 8	12 18 18

Scenario Report

Scenario: Background AM
Command: Default Command
Volume: Background AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.133
Loss Time (sec): 0 Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

Volume Module:
Base Vol: 44 0 33 0 0 0 0 0 13 70 93 16 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 1.00
Initial Bse: 44 0 33 0 0 0 0 0 13 70 93 16 0
Added Vol: 0 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 0
Initial Fut: 44 0 33 0 0 0 0 0 13 70 93 16 0
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 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 1.00
PHF Volume: 44 0 33 0 0 0 0 0 13 70 93 16 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 44 0 33 0 0 0 0 0 13 70 93 16 0
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 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 1.00
FinalVolume: 44 0 33 0 0 0 0 0 13 70 93 16 0

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.57 0.00 0.43 0.00 0.00 0.00 0.00 0.16 0.84 0.85 0.15 0.00
Final Sat.: 479 0 359 0 0 0 0 150 809 702 121 0

Capacity Analysis Module:
Vol/Sat: 0.09 xxxx 0.09 xxxx xxxx xxxx 0.09 0.09 0.13 0.13 xxxx
Crit Moves: ****
Delay/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 7.9 7.9 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
AdjDel/Veh: 7.5 0.0 7.5 0.0 0.0 0.0 0.0 7.0 7.0 7.9 7.9 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.5 xxxxxx 7.0 7.9
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.5 xxxxxx 7.0 7.9
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 12 columns showing conflict volume, potent capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS values for 2Way95thQ, Control Del, LOS by Move, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: D[28.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 13 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue values.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 9 Average Delay (sec/veh): 15.0
Optimal Cycle: 29 Level Of Service: B

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include), and various traffic volume/adjustment metrics.

Volume Module: Table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 12 Average Delay (sec/veh): 35.5
Optimal Cycle: 44 Level Of Service: D

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 0.856
Loss Time (sec): 12 Average Delay (sec/veh): 64.7
Optimal Cycle: 115 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics and 14 rows including Vol/Sat, Crit Moves, Green/Cycle, etc.

Scenario Report

Scenario: Background PM
Command: Default Command
Volume: Background PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.226
Loss Time (sec): 0 Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 56 0 0 0 0 60 79 156 24 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: 44 0 56 0 0 0 0 60 79 156 24 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: 44 0 56 0 0 0 0 60 79 156 24 0
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: 44 0 56 0 0 0 0 60 79 156 24 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 44 0 56 0 0 0 0 60 79 156 24 0
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: 44 0 56 0 0 0 0 60 79 156 24 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.44 0.00 0.56 0.00 0.00 0.00 0.00 0.43 0.57 0.87 0.13 0.00
Final Sat.: 347 0 442 0 0 0 0 382 503 691 106 0

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Capacity Analysis Module:
Vol/Sat: 0.13 xxxx 0.13 xxxx xxxx xxxx 0.16 0.16 0.23 0.23 xxxx
Crit Moves: ****
Delay/Veh: 7.9 0.0 7.9 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 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
AdjDel/Veh: 7.9 0.0 7.9 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.9 xxxxxx 7.7 8.7
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.9 xxxxxx 7.7 8.7
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: B[13.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.2 Worst Case Level Of Service: B[13.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap and follow-up times across four approaches.

Capacity Module: Table with 12 columns for capacity metrics and 4 rows of data including Conflict Vol, Potent Cap., etc.

Level Of Service Module: Table with 12 columns for LOS metrics and 10 rows of data including 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: C [21.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 13 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue lengths.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.526
Loss Time (sec): 9 Average Delay (sec/veh): 15.9
Optimal Cycle: 35 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1! 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 38 2 16 3 10 6 2 150 399 144 69 6
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: 38 2 16 3 10 6 2 150 399 144 69 6
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: 38 2 16 3 10 6 2 150 399 144 69 6
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: 38 2 16 3 10 6 2 150 399 144 69 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 38 2 16 3 10 6 2 150 399 144 69 6
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: 38 2 16 3 10 6 2 150 399 144 69 6

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.69 0.75 0.69 0.86 0.94 0.78 0.88 0.89 0.82 0.88 0.99 0.91
Lanes: 0.68 0.03 0.29 0.25 0.75 1.00 1.00 0.26 0.74 1.00 0.91 0.09
Final Sat.: 890 47 375 404 1346 1488 1663 435 1158 1663 1715 149

Capacity Analysis Module:
Vol/Sat: 0.04 0.04 0.04 0.01 0.01 0.00 0.00 0.34 0.34 0.09 0.04 0.04
Crit Moves: ****
Green/Cycle: 0.08 0.08 0.08 0.08 0.08 0.08 0.02 0.65 0.65 0.16 0.80 0.80
Volume/Cap: 0.53 0.53 0.53 0.09 0.09 0.05 0.05 0.53 0.53 0.53 0.05 0.05
Uniform Del: 39.7 39.7 39.7 38.3 38.3 38.2 42.9 8.2 8.2 34.4 2.0 2.0
IncrcmntDel: 4.8 4.8 4.8 0.3 0.3 0.2 0.5 0.5 0.5 1.9 0.0 0.0
InitQueueDel: 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: 44.5 44.5 44.5 38.6 38.6 38.3 43.5 8.7 8.7 36.3 2.0 2.0
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: 44.5 44.5 44.5 38.6 38.6 38.3 43.5 8.7 8.7 36.3 2.0 2.0
LOS by Move: D D D D D D D A A D A A
HCM2kAvgQ: 2 2 2 0 0 0 0 9 9 5 0 0

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.670
Loss Time (sec): 12 Average Delay (sec/veh): 31.2
Optimal Cycle: 58 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume).

Saturation Flow Module: Table with 12 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 130 Critical Vol./Cap.(X): 0.876
Loss Time (sec): 12 Average Delay (sec/veh): 49.5
Optimal Cycle: 111 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Scenario Report

Scenario: Background+P AM
Command: Default Command
Volume: Background AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: Project AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.133
Loss Time (sec): 0 Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 33 0 0 0 0 0 13 70 93 16 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 1.00
Initial Bse: 44 0 33 0 0 0 0 0 13 70 93 16 0
Added Vol: 1 0 0 0 0 0 0 0 0 15 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 45 0 33 0 0 0 0 0 13 85 93 16 0
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 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 1.00
PHF Volume: 45 0 33 0 0 0 0 0 13 85 93 16 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 45 0 33 0 0 0 0 0 13 85 93 16 0
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 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 1.00
FinalVolume: 45 0 33 0 0 0 0 0 13 85 93 16 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.58 0.00 0.42 0.00 0.00 0.00 0.00 0.00 0.13 0.87 0.85 0.15 0.00
Final Sat.: 479 0 351 0 0 0 0 0 128 835 698 120 0

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Capacity Analysis Module:
Vol/Sat: 0.09 xxxx 0.09 xxxx xxxx xxxx 0.10 0.10 0.13 0.13 xxxx
Crit Moves: ****
Delay/Veh: 7.6 0.0 7.6 0.0 0.0 0.0 0.0 7.1 7.1 8.0 8.0 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
AdjDel/Veh: 7.6 0.0 7.6 0.0 0.0 0.0 0.0 7.1 7.1 8.0 8.0 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.6 xxxxxx 7.1 8.0
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.6 xxxxxx 7.1 8.0
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[11.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[11.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: D[30.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 13 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue values.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 9 Average Delay (sec/veh): 15.5
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Permitted/Protected), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 13 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module: Table with 13 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 13 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 12 Average Delay (sec/veh): 36.1
Optimal Cycle: 45 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 4 rows showing saturation flow rates and adjustments.

Capacity Analysis Module: Table with 12 columns and 14 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 0.859
Loss Time (sec): 12 Average Delay (sec/veh): 64.9
Optimal Cycle: 117 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns for volume metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns for saturation flow metrics. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Scenario Report

Scenario: Background+P PM
Command: Default Command
Volume: Background PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: Project PM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.228
Loss Time (sec): 0 Average Delay (sec/veh): 8.2
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

Volume Module:
Base Vol: 44 0 56 0 0 0 0 0 60 79 156 24 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 1.00
Initial Bse: 44 0 56 0 0 0 0 0 60 79 156 24 0
Added Vol: 10 0 0 0 0 0 0 0 0 6 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 54 0 56 0 0 0 0 0 60 85 156 24 0
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 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 1.00
PHF Volume: 54 0 56 0 0 0 0 0 60 85 156 24 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 54 0 56 0 0 0 0 0 60 85 156 24 0
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 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 1.00
FinalVolume: 54 0 56 0 0 0 0 0 60 85 156 24 0

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.49 0.00 0.51 0.00 0.00 0.00 0.00 0.41 0.59 0.87 0.13 0.00
Final Sat.: 383 0 397 0 0 0 0 364 515 685 105 0

Capacity Analysis Module:
Vol/Sat: 0.14 xxxx 0.14 xxxx xxxx xxxx 0.16 0.16 0.23 0.23 xxxx
Crit Moves: ****
Delay/Veh: 8.0 0.0 8.0 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 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
AdjDel/Veh: 8.0 0.0 8.0 0.0 0.0 0.0 0.0 7.7 7.7 8.7 8.7 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 8.0 xxxxxx 7.7 8.7
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.0 xxxxxx 7.7 8.7
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.2 0.2 0.2 0.3 0.3 0.3

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: B[14.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap and follow-up times across different movements.

Capacity Module: Table with 12 columns for capacity-related metrics and 4 rows of data including Conflict Vol, Potent Cap., etc.

Level Of Service Module: Table with 12 columns for LOS metrics and 10 rows of data including 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: B[14.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time for different movements.

Capacity Module: Table with 12 columns showing conflict volume, potent capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS for 2Way95thQ, control delay, LOS by movement, shared capacity, shared queue, shared control delay, and shared LOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: C [23.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 13 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue lengths.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 9 Average Delay (sec/veh): 16.6
Optimal Cycle: 35 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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
Lanes: 0 0 1! 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 38 2 16 3 10 6 2 150 399 144 69 6
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: 38 2 16 3 10 6 2 150 399 144 69 6
Added Vol: 0 1 0 0 2 17 3 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 38 3 16 3 12 23 5 150 399 144 69 6
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: 38 3 16 3 12 23 5 150 399 144 69 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 38 3 16 3 12 23 5 150 399 144 69 6
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: 38 3 16 3 12 23 5 150 399 144 69 6

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.69 0.75 0.69 0.87 0.95 0.78 0.88 0.89 0.82 0.88 0.99 0.91
Lanes: 0.67 0.05 0.28 0.21 0.79 1.00 1.00 0.26 0.74 1.00 0.91 0.09
Final Sat.: 878 69 370 353 1414 1488 1663 435 1158 1663 1715 149

Capacity Analysis Module:
Vol/Sat: 0.04 0.04 0.04 0.01 0.01 0.02 0.00 0.34 0.34 0.09 0.04 0.04
Crit Moves: ****
Green/Cycle: 0.08 0.08 0.08 0.08 0.08 0.08 0.06 0.65 0.65 0.16 0.76 0.76
Volume/Cap: 0.53 0.53 0.53 0.10 0.10 0.19 0.05 0.53 0.53 0.53 0.05 0.05
Uniform Del: 39.6 39.6 39.6 38.2 38.2 38.5 40.1 8.2 8.2 34.4 2.7 2.7
IncrcmntDel: 4.8 4.8 4.8 0.3 0.3 0.8 0.2 0.5 0.5 1.9 0.0 0.0
InitQueueDel: 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: 44.4 44.4 44.4 38.6 38.6 39.3 40.4 8.7 8.7 36.3 2.7 2.7
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: 44.4 44.4 44.4 38.6 38.6 39.3 40.4 8.7 8.7 36.3 2.7 2.7
LOS by Move: D D D D D D D A A D A A
HCM2kAvgQ: 2 2 2 0 0 1 0 9 9 5 1 1

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 12 Average Delay (sec/veh): 31.7
Optimal Cycle: 59 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and various traffic volume/adjustment metrics.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 130 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 12 Average Delay (sec/veh): 49.7
Optimal Cycle: 113 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data.

Saturation Flow Module: Table with 12 columns representing saturation flow values and 4 rows of data.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics and 12 rows of data.

Scenario Report

Scenario: Cumulative AM
Command: Default Command
Volume: Cumulative AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.161
Loss Time (sec): 0 Average Delay (sec/veh): 7.7
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1! 0 0 0 0 0 0 0 1 0 0 1 0 0 0

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Volume Module:
Base Vol: 42 0 33 0 0 0 0 12 86 114 18 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: 42 0 33 0 0 0 0 12 86 114 18 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: 42 0 33 0 0 0 0 12 86 114 18 0
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: 42 0 33 0 0 0 0 12 86 114 18 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 42 0 33 0 0 0 0 12 86 114 18 0
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: 42 0 33 0 0 0 0 12 86 114 18 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.56 0.00 0.44 0.00 0.00 0.00 0.00 0.12 0.88 0.86 0.14 0.00
Final Sat.: 458 0 360 0 0 0 0 118 842 709 112 0

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Capacity Analysis Module:
Vol/Sat: 0.09 xxxx 0.09 xxxx xxxx xxxx 0.10 0.10 0.16 0.16 xxxx
Crit Moves: ****
Delay/Veh: 7.6 0.0 7.6 0.0 0.0 0.0 0.0 7.1 7.1 8.1 8.1 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
AdjDel/Veh: 7.6 0.0 7.6 0.0 0.0 0.0 0.0 7.1 7.1 8.1 8.1 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 7.6 xxxxxx 7.1 8.1
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 7.6 xxxxxx 7.1 8.1
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.2 0.2

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: B[11.5]

Table with 4 columns: Approach: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module: Critical Gp, FollowUpTim.

Capacity Module: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: B[11.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: E[36.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic components and 13 rows of volume data.

Critical Gap Module: Table with 13 columns for gap and follow-up times across different movements.

Capacity Module: Table with 13 columns for capacity-related metrics and 4 rows of data.

Level of Service Module: Table with 13 columns for LOS metrics and 10 rows of data.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.439
Loss Time (sec): 9 Average Delay (sec/veh): 18.7
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Permitted/Protected), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 13 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module: Table with 13 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 13 columns representing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.554
Loss Time (sec): 12 Average Delay (sec/veh): 33.5
Optimal Cycle: 47 Level Of Service: C

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 1.083
Loss Time (sec): 12 Average Delay (sec/veh): 96.8
Optimal Cycle: 300 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume categories and 12 rows of data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns and 4 rows of data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns and 14 rows of data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Scenario Report

Scenario: Cumulative PM
Command: Default Command
Volume: Cumulative PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: No Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.298
Loss Time (sec): 0 Average Delay (sec/veh): 8.6
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 0 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 56 0 0 0 0 0 78 102 206 29 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 1.00
Initial Bse: 44 0 56 0 0 0 0 0 78 102 206 29 0
Added Vol: 0 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 0
Initial Fut: 44 0 56 0 0 0 0 0 78 102 206 29 0
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 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 1.00
PHF Volume: 44 0 56 0 0 0 0 0 78 102 206 29 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 44 0 56 0 0 0 0 0 78 102 206 29 0
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 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 1.00
FinalVolume: 44 0 56 0 0 0 0 0 78 102 206 29 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.44 0.00 0.56 0.00 0.00 0.00 0.00 0.43 0.57 0.88 0.12 0.00
Final Sat.: 328 0 417 0 0 0 0 377 492 692 97 0

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Capacity Analysis Module:
Vol/Sat: 0.13 xxxx 0.13 xxxx xxxx xxxx 0.21 0.21 0.30 0.30 xxxx
Crit Moves: ****
Delay/Veh: 8.1 0.0 8.1 0.0 0.0 0.0 0.0 8.0 8.0 9.3 9.3 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
AdjDel/Veh: 8.1 0.0 8.1 0.0 0.0 0.0 0.0 8.0 8.0 9.3 9.3 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 8.1 xxxxxx 8.0 9.3
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.1 xxxxxx 8.0 9.3
LOS by Appr: A * A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.2 0.2 0.2 0.4 0.4 0.4

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 4.3 Worst Case Level Of Service: C [15.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.5 Worst Case Level Of Service: C [15.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap and follow-up times across four approaches.

Capacity Module: Table with 12 columns for capacity metrics across four approaches.

Level of Service Module: Table with 12 columns for LOS metrics across four approaches.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: D[25.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 13 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing delay, LOS by movement, shared capacity, and shared queue lengths.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 9 Average Delay (sec/veh): 21.2
Optimal Cycle: 41 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Permitted/Protected), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 13 columns for different volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module: Table with 13 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat).

Capacity Analysis Module: Table with 13 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ).

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.688
Loss Time (sec): 12 Average Delay (sec/veh): 30.8
Optimal Cycle: 61 Level Of Service: C

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 12 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow factors like Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis factors like Vol/Sat, Crit Moves, Green/Cycle, etc.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 130 Critical Vol./Cap.(X): 1.148
Loss Time (sec): 12 Average Delay (sec/veh): 86.7
Optimal Cycle: 300 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

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Volume Module: Table with 12 columns and 15 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

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Saturation Flow Module: Table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, Final Sat.

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Capacity Analysis Module: Table with 12 columns and 15 rows including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Scenario Report

Scenario: Cumulative+P AM
Command: Default Command
Volume: Cumulative AM
Geometry: Existing AM
Impact Fee: Default Impact Fee
Trip Generation: Project AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.162
Loss Time (sec): 0 Average Delay (sec/veh): 7.7
Optimal Cycle: 0 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

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Volume Module: Table with 13 columns for traffic flows and 13 rows for various adjustment factors like Base Vol, Growth Adj, etc.

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Saturation Flow Module: Table with 13 columns for flow and 3 rows for Adjustment, Lanes, and Final Sat.

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Capacity Analysis Module: Table with 13 columns for flow and 13 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: B[12.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time values for different movements.

Capacity Module: Table with 12 columns showing conflict volume, potent capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS values for 2Way95thQ, Control Del, LOS by Move, Shared Cap., Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[11.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up time for different movements.

Capacity Module: Table with 12 columns showing conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: E[39.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic components and 13 rows of volume data.

Critical Gap Module: Table with 13 columns for gap and follow-up times across different movements.

Capacity Module: Table with 13 columns for capacity-related metrics and 4 rows of data.

Level Of Service Module: Table with 13 columns for LOS metrics and 10 rows of data.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.440
Loss Time (sec): 9 Average Delay (sec/veh): 19.1
Optimal Cycle: 31 Level Of Service: B

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include), and various traffic parameters like Min. Green, Y+R, Lanes.

Volume Module: Table with columns for traffic parameters (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume) and values for 12 different movements.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values for 12 movements.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ values for 12 movements.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 190 Critical Vol./Cap.(X): 0.563
Loss Time (sec): 12 Average Delay (sec/veh): 34.2
Optimal Cycle: 48 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and various traffic parameters like Min. Green, Y+R, Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume across 12 lanes.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. across 12 lanes.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ across 12 lanes.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 190 Critical Vol./Cap.(X): 1.086
Loss Time (sec): 12 Average Delay (sec/veh): 97.5
Optimal Cycle: 300 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected), Rights (Include/Ovl), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume types (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module: Table with 12 columns representing saturation flow values for different lanes and adjustments.

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ).

Scenario Report

Scenario: Cumulative+P PM
Command: Default Command
Volume: Cumulative PM
Geometry: Existing PM
Impact Fee: Default Impact Fee
Trip Generation: Project PM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.301
Loss Time (sec): 0 Average Delay (sec/veh): 8.7
Optimal Cycle: 0 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 0 0 0 1 0 0 0

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Volume Module:
Base Vol: 44 0 56 0 0 0 0 0 78 102 206 29 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 1.00
Initial Bse: 44 0 56 0 0 0 0 0 78 102 206 29 0
Added Vol: 10 0 0 0 0 0 0 0 0 6 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 54 0 56 0 0 0 0 0 78 108 206 29 0
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 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 1.00
PHF Volume: 54 0 56 0 0 0 0 0 78 108 206 29 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 54 0 56 0 0 0 0 0 78 108 206 29 0
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 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 1.00
FinalVolume: 54 0 56 0 0 0 0 0 78 108 206 29 0

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Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.49 0.00 0.51 0.00 0.00 0.00 0.00 0.42 0.58 0.88 0.12 0.00
Final Sat.: 362 0 375 0 0 0 0 362 501 685 96 0

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Capacity Analysis Module:
Vol/Sat: 0.15 xxxx 0.15 xxxx xxxx xxxx 0.22 0.22 0.30 0.30 xxxx
Crit Moves: ****
Delay/Veh: 8.3 0.0 8.3 0.0 0.0 0.0 0.0 8.1 8.1 9.4 9.4 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
AdjDel/Veh: 8.3 0.0 8.3 0.0 0.0 0.0 0.0 8.1 8.1 9.4 9.4 0.0
LOS by Move: A * A * * * * A A A A *
ApproachDel: 8.3 xxxxxx 8.1 9.4
Delay Adj: 1.00 xxxxxx 1.00 1.00
ApprAdjDel: 8.3 xxxxxx 8.1 9.4
LOS by Appr: A * A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.3 0.3 0.3 0.4 0.4 0.4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: C [15.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3

Average Delay (sec/veh): 4.4 Worst Case Level Of Service: C [15.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing LOS metrics like 2Way95thQ, Control Del, LOS by Move, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: D[27.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns showing critical gap and follow-up times for different movements.

Capacity Module: Table with 13 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns showing LOS metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #5

Cycle (sec): 90 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 9 Average Delay (sec/veh): 21.6
Optimal Cycle: 41 Level Of Service: C

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include), and various traffic volume/adjustment metrics.

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Volume Module: Table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume across 12 lanes.

-----|-----|-----|-----|-----|

Saturation Flow Module: Table showing Sat/Lane, Adjustment, Lanes, Final Sat. across 12 lanes.

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Capacity Analysis Module: Table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ across 12 lanes.

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #6

Cycle (sec): 130 Critical Vol./Cap.(X): 0.692
Loss Time (sec): 12 Average Delay (sec/veh): 31.2
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Protected, Split Phase), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module: Table with 12 columns representing different volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module: Table with 12 columns representing saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module: Table with 12 columns representing capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Uniform Del, IncremntDel, InitQueueDel, Delay Adj, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ).

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7

Cycle (sec): 130 Critical Vol./Cap.(X): 1.152
Loss Time (sec): 12 Average Delay (sec/veh): 87.4
Optimal Cycle: 300 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, Y+R, and Lanes.

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Volume Module: Table with 12 columns for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

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Saturation Flow Module: Table with 12 columns for saturation flow metrics like Sat/Lane, Adjustment, Lanes, etc.

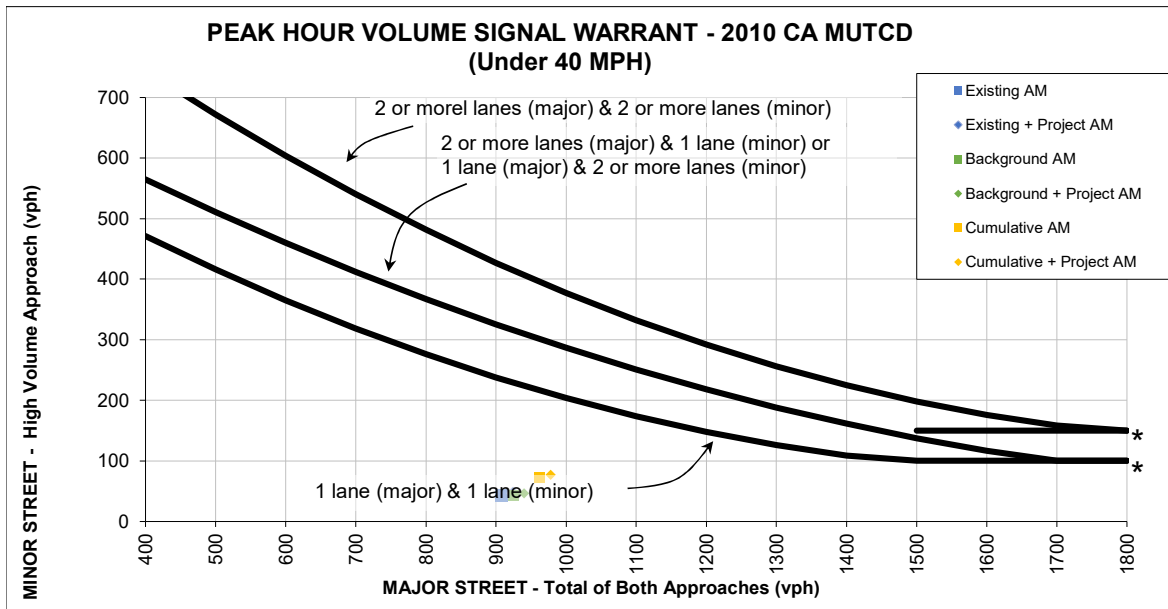
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Capacity Analysis Module: Table with 12 columns for capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

Appendix D

Peak-Hour Signal Warrant

Birch Street and Sheridan Avenue

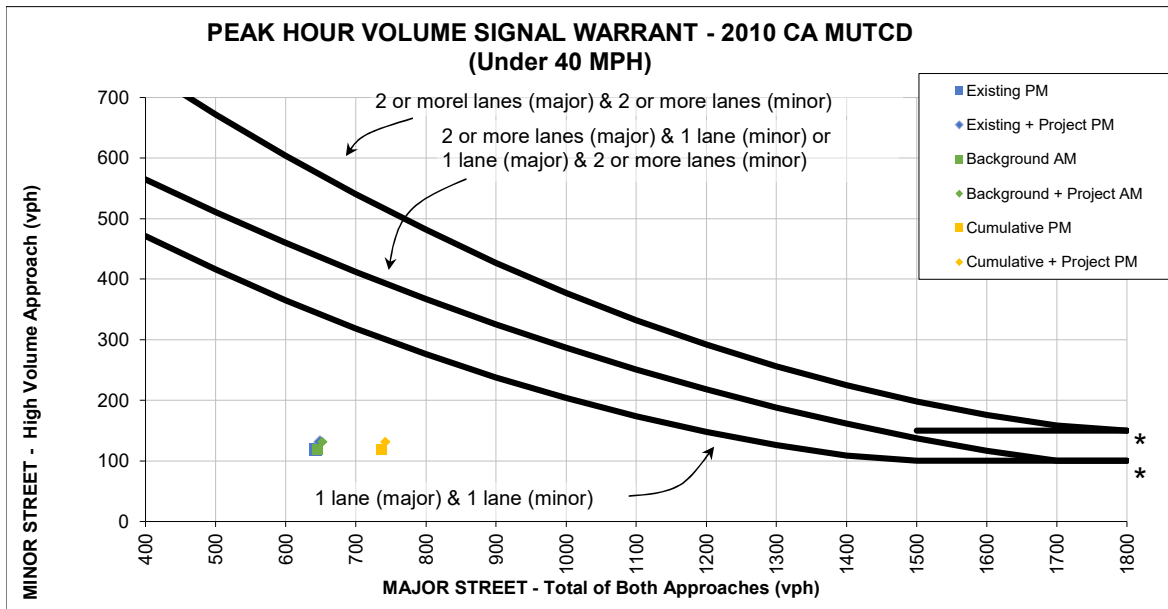


* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

Peak Hour Volume Warrant Per 2003 MUTCD- Under 40 MPH

		AM Peak Hour Volumes							
		Approach Lanes		Existing AM	Existing + Project AM	Background AM	Background + Project AM	Cumulative AM	Cumulative + Project AM
		2 or	One More						
Major Street - Both Approaches	Birch Street	x		908	924	924	940	962	978
Minor Street - Highest Approach	Sheridan Avenue	x		42	46	42	46	73	77
Warrant Met?				no	no	no	no	no	no

Birch Street and Sheridan Avenue



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

Peak Hour Volume Warrant Per 2003 MUTCD- Under 40 MPH

		Approach Lanes		AM Peak Hour Volumes					
				Existing PM	Existing + Project PM	Background AM	Background + Project AM	Cumulative PM	Cumulative + Project PM
Major Street - Both Approaches	Birch Street	x	x	643	649	646	652	736	742
Minor Street - Highest Approach	Sheridan Avenue	x		118	131	118	131	118	131
Warrant Met?				no	no	no	no	no	no